



Information Binder





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Booklet 1

Pregnancy



Section 1: Midwifery Care

Informed Choice Agreement

Welcome to Family Midwifery Care of Guelph! We have developed this document to provide you with information about what you can expect from your care with us. We encourage you to read it and discuss with us any questions you may have. We look forward to caring for you and your family at this special time.

Midwifery Care in Ontario

On January 1, 1994 Midwifery became a fully funded, regulated health profession in Ontario. Since then care from a Registered Midwife has been an option for pregnant women. The philosophy of care emphasizes informed choice, continuity of care and choice of birthplace. Midwifery Care is woman centered and family friendly. Midwifery care is paid for by the Provincial Government for all Ontario residents (even if you don't have OHIP).

Our philosophy

We view pregnancy and birth as normal healthy events in a woman's life. We promote healthy pregnancies and normal birth. We use technology when needed and avoid unnecessary interventions. We believe that skillful care and monitoring during pregnancy empowers women. We also believe that a birthing woman whose emotional and physical needs are met can have a positive birth experience. In an atmosphere of warmth, calm, freedom of movement and nurturing support women are more relaxed and empowered to work with their bodies and babies for a positive birth experience.

Making Choices

We believe it is important to offer support and experienced guidance to women as they make decisions about their health during pregnancy and birth. We respect that the women we care for are the primary decision makers about their pregnancies and births. Our role is to offer information, support and recommendations to help women make the decisions that are right for them. We will make sure there is time for relaxed discussion, and we will provide information so a woman can make informed choices about prenatal testing, use of technology, birthplace, breastfeeding and baby care. If complications arise, our commitment is to continue to offer complete and honest information so that women can continue to feel empowered, listened to and supported in their informed choices.

Your care with Midwives

Midwives provide primary care and guidance during pregnancy, labour and birth as well as care for mother and baby for six weeks after the birth. Our goal is to support your needs and choices so you can have the birth you choose within the realm of safe care.

You do not need to see a physician about your pregnancy unless something happens that is outside of the scope of midwifery care. If there is a complication your midwife may arrange a visit with a physician. In some cases, your care will need to be transferred to a doctor. Even if your care is transferred, your midwife will stay involved in your care to offer support. If you have non-pregnancy related health concerns your midwives will advise you to see another health care provider like your family doctor.

Most of your pregnancy care will happen in our clinic. We will meet you at your home or the hospital if you have urgent concerns.

Our training, standards and guidelines

Every Registered Midwife in our Province meets all the standards of the College of Midwives of Ontario. The Ontario Midwifery Education Program is a specialized four-year university degree program (available at McMaster, Ryerson and Laurentian) which combines academic courses with hands-on training to create new midwives. Many midwives in Ontario have been trained in other countries, and often have many years of experience. These midwives have completed Canadian examinations and have proven to the College of Midwives that they meet Ontario's registration standards.

The College of Midwives of Ontario sets the standards, regulations and guidelines that all midwives must follow. These include when we need to review a case with another midwife or a physician. More details on our scope of practice are provided in your information package. We regularly report our client evaluations and our ongoing training activities to the College as part of our Quality Assurance program.

Ongoing re-certification and training continues to ensure that midwives have all the skills they need for providing great care. Midwives re-certify every year in Neonatal Resuscitation, and every two years in Emergency Skills and Cardiopulmonary Resuscitation. We attend peer review sessions and regular practice meetings. This allows us to regularly discuss new guidelines and research as well as to get input on how to provide woman-centred and safe care in challenging cases.

Our practice

We work together in caring for you. Our midwives work in small pods or teams of 2 or 3 midwives. Using teams means that you have the chance to know your midwives well and allows us to maintain a healthy balance in our own lives by having time off-call.

You will get to know the midwives on your team or pod during your pregnancy. The midwives in your team share on-call and clinic responsibilities and switch regularly. The midwives from your team are never on-call at the same time. When you go into labour, one midwife from your team will be on-call and will attend you. However, there are rare times when the midwife from your pod may be at another birth or may need to be off-call to rest to ensure safe care. If this happens, another midwife that you have not met may answer you. We share information among our practice to ensure that any midwife will be able to provide you with personalized care. While you are in care, the midwives of our practice are on-call for you 24 hours a day, 7 days a week, all year long.

On rare occasions, your office or home visits will need to be rescheduled if your midwife is busy with a birth or emergency. We ask for your patience in these cases. We will give you the same personalized care when you need it!

Communicating with your midwives

Non-urgent concerns

If you have a non-urgent concern or question, please call the office. If one of your midwives is available, you may be able to speak to her right away. You can leave a message in person with our administrator or voicemail. If you leave a message, your midwife will answer it as soon as she can. This might be the same day or it may be her next clinic day. We ask you to call the office and not our pagers for non-urgent concerns to allow us to get much needed rest (even during the day). If it can't wait, then please page your midwife.

Urgent concerns

One of your midwives is always carrying a pager. That is the best way to reach her if you are in labour or if you have an emergency or urgent concern. We use a paging company. When you call the pager number a person will answer. You will need to tell them:

Who your midwives are

What the problem is

A phone number where you are

When you hang up, a message will be sent to your midwife's pager. She will call you back within 10 minutes. Please make sure you keep the line free for her to call back. We are always ready to talk to you about an urgent concern any time of day or night. Call again if your midwife has not called back after 10 minutes to make sure she got the message. We will NEVER IGNORE your call. Keep calling until a midwife answers you.

Appointments

Our office is usually open Monday to Friday. Our office number is 519-763-8568.

Due to the unpredictable nature of midwifery work, we may not always be able to provide appointment times that are convenient to your schedule. Occasionally we may need to change your appointment on short notice. We apologize for the inconvenience and we will make every effort to inform you of changes as soon as possible. Please make sure we have your up to date home, work and/or cell phone numbers so that we can reach you if we need to change your visit.

Student Midwives in Your Care

Family Midwifery Care is proud to be a teaching practice for learning midwives. Demand for midwives in Canada is ever-growing and exceeds the number of working midwives. We feel that it is important to train new midwives in a supportive environment, and we hope that you will join us in being a very important part of our growing profession.

In Ontario, midwives are trained in a four-year Bachelor of Health Sciences degree program at McMaster University, Ryerson University, or Laurentian University. In their second year of studies, students begin hands-on training while continuing their academic studies. Each year, students increase their skills and assume more of a supervised leadership role as they provide care. Internationally trained midwives also spend time in established practices to become familiar with the Canadian system before they are registered.

When student midwives work with us it is usually for a period of several months. You will have the opportunity to develop a relationship over a number of visits and will provide care appropriate to their level of training. We hope that you will join us in supporting our students as they learn. So much of becoming a midwife comes from working directly with women and babies and we greatly value your participation and feedback. If you have any questions or concerns about how students may be involved in your care, please discuss this with your midwives.

Lending Library

We offer a lending library of pregnancy, birth and parenting books and videos to our clients. You are invited to borrow these at any time in your pregnancy and you can feel free to ask for suggestions or recommendations from your midwives. You can speak to our administrator or your midwife to sign out any materials. The cost of materials which are damaged or not returned will be charged to you. We are always grateful for your donations of books or videos you no longer need.

Childbirth Classes

We strongly encourage women expecting their first baby to attend childbirth classes with their partner or a support person. Classes will give you important information about the usual experiences of labour and birth and breastfeeding. Maybe more importantly, you get a chance to connect with other parents. Many families find they develop lasting friendships with the other parents.

Prenatal Care

Regular prenatal visits are important and we aim to make them a comfortable and enjoyable experience. Our routine visits are 30 to 45 minutes long. We find this time allows us to answer your questions and develop a relationship of trust and caring.

Visits are scheduled every month until 28 weeks of pregnancy, at which time we will begin seeing you every 2 weeks. We will begin seeing you every week from 36 weeks until you give birth. One visit will be at your home if you are planning a homebirth.

Your care with us will begin with a detailed health history that includes details of your health as well as your family history. During our visits we assess your health and the well-being of your baby. Bloodwork and ultrasounds are ordered when needed.

Labour and Birth Care

We respect that women's experiences of labour and birth can be varied and different. We are committed to respecting the individual values and needs of labouring women and their families.

In early labour we will be in telephone contact with you and may visit you at home to assess your progress. When labour becomes active, your midwife will stay with you to monitor your vital signs, the baby's heart rate, your contractions and your progress in labour. A second midwife arrives closer to the time of the birth. This is usually a midwife from another team who you have not met.

We encourage you to have a labour support person to be present with you through early labour as midwives are only with you in active labour. Usually your support person is a partner, but it may be a close friend, relative or doula (professional labour support person). You may wish to hire a doula even if you have other support. Research shows that labour support reduces the length of labour and the need for interventions as well as increasing women's satisfaction with their birth experience.

Midwives are fully-qualified primary care providers who will assist you with every part of your normal birth including catching your baby, giving stitches and caring for your new baby. A doctor is only involved if a complication arises.

Choice of Birthplace

Whether you have your baby at home or in the hospital is a choice for women and families in the care of midwives. Your midwives will discuss your options with you, taking into consideration your specific situation including risk factors for mother and baby, distance to the hospital and where you feel most confident and secure.

Home birth

There is a lot of good evidence showing that home birth is safe for low-risk healthy women with midwives in attendance. This is a choice for women and families in the care of midwives. Midwives bring portable versions of emergency equipment and supplies such as suction, oxygen, intravenous fluids, tools and equipment to suture tears and medications for the prevention and treatment of postpartum hemorrhage (heavy

bleeding). Our training includes management of the rare sudden emergencies that might arise at a home birth. Two midwives attend the birth. A second midwife usually comes when the arrival of the baby is near to assist your primary midwife. The second midwife is usually from another team who you have not met.

Some women are more comfortable and relaxed at home. As a result they will have better progress in labour and will enjoy the experience of giving birth much more at home than in the hospital. Home birth is also a great experience for partners and other family members. The watchful guidance of the midwife will ensure early recognition of potential complications and the hospital continues to be an option at any time. Most transfers to the hospital from planned homebirths are not emergencies, and are for slow progress or pain relief. We work with ambulance crews and coordinate with the hospital for emergency transport if that is necessary.

When you plan a home birth, we will come to your home when you are in labour. We will set up our equipment and monitor you and your baby's health. We will work with you to find what helps you cope with your labour. When the birth is close a second midwife (who you usually have not met) will come to assist your primary midwife. After the birth we will give you stitches if you need them, help you to breastfeed, do a head-to-toe exam of your baby and complete paperwork. We will make sure that you are well, that you eat something and have help to get to the washroom/shower. We will stay with you for 3 hours. Usually we leave after we have cleaned up from the birth and tucked you into your own warm, clean bed.

Hospital Birth

Midwifery clients wanting a hospital birth have a choice of two local hospitals where we have privileges: Guelph General Hospital (GGH) and Groves Memorial Community Hospital (GMCH) in Fergus. We will ask for you to pre-register at one of these hospitals even if you plan to give birth at home.

Your midwife may offer to meet you at home to assess your labour or you and your midwife may decide to meet at the hospital. Some women choose to stay at home for a significant portion of their labour. When we will advise you to move to the hospital depends on many factors.

You can expect that your midwife will be with you throughout your active labour, the birth and for about 3 hours after. A second midwife will be called when you are close to delivery to assist your primary midwife. At the hospital you may take a shower, go in the Jacuzzi tub (GGH only), sit on an exercise ball, walk in the hallways, etc.... Your midwife will work with you to find what helps you through your labour. Midwives use the technologies available in the hospital when needed. Two midwives attend the birth. A second midwife usually comes when the arrival of the baby is near to assist your primary midwife. The second midwife is usually from another team who you have not met. Doctors and nurses are not present at a normal hospital birth with midwives.

After the birth, your midwives will give stitches if you need them, help you breastfeed, do a head-to-toe exam of your baby and complete paperwork. We will ensure you eat something and have help to get to the washroom/shower and call housekeeping to tidy your room. If everything has been normal, you will be offered early discharge or a 24-hour hospital stay. Women often go home a few hours after the birth, and our experience tells us that in many cases, going home and settling into a known environment helps to establish confidence and effective breastfeeding. Your midwife is still available to you 24 hours a day after you have your baby.

Usually babies are cared for by their parents in the mother's hospital room. Nurses are available for emergencies and to give breastfeeding help. Your midwife will check on you every day you are in hospital. At Guelph General, babies who need more care will be cared for by nurses and a paediatrician in the special care nursery. Babies who need even more specialized care may be transported to a different hospital.

Children at Your Birth

Children cannot attend births at the hospital. Some families choose for older siblings to witness the births of a new baby at home.

If you are planning to have older children present at your birth, you will need to invite someone you trust to be present during your labour and birth. This person should be someone you feel comfortable with and he or she needs to be comfortable being present at the type of birth you are planning. The primary role of this person should be to meet the needs of the child/children and not to be a support person to you.

Postpartum (After Birth) Care

After the baby is born the midwife will stay with you until you and the baby are stable and our paperwork is done. This usually takes 2 to 4 hours. One of your midwives will visit you and your baby within 24 hours of the birth and at least 2 other times in the first week to check that you are recovering well and your baby remains healthy. These first visits happen wherever you are: at home or in the hospital. A big focus during this time is on breastfeeding. Additional breastfeeding support is available in the community and we may recommend this for you. Clinic visits for mother and baby happen at 2, 4 and 6 weeks after the birth. Support for parents continues throughout this time with a midwife available by pager for urgent concerns and our office for non-urgent issues. After 6 weeks your care is transferred back to your family doctor.

Transfer of Care

Midwives are specialists in normal and low risk obstetrics. When complications beyond the scope of practice arise, your midwives will ensure you get the right care from the right professional. This may mean an obstetrician or a paediatrician. Depending on the complication, it may be necessary for a specialist to take over your care. When care is transferred to a physician, your midwives will stay involved to offer support. Midwives will often take over again after the birth and will provide care for your baby. Your midwives will arrange for a consultation from a paediatrician and a transfer of care if there are concerns for the baby. We will begin caring for you and your baby again if the problem resolves.

Confidentiality and Privacy

Our Midwifery Practice Group is bound by law and professional ethics to safeguard your privacy and the confidentiality of your personal information.

This includes:

- Retaining/destroying records in accordance with the law
- Collecting only the information that may be necessary for your care
- Keeping accurate and up-to-date records
- Safeguarding the medical records in our possession
- Sharing information with other health care professionals on a need to know basis where required for your health care
- Disclosing information to third parties only with your express consent or as permitted or required by law; and

You will be asked to sign a consent form that gives your consent for our collection, use and disclosure of your personal information for purposes related to your care.

You have the right to see your records. You may also obtain copies of your records. Simply ask your midwives and they will provide copies to you.

Please speak with your midwives if you have any concerns about the accuracy of your records.

If you would like to discuss our privacy policy in more detail, or if you have specific questions or complaints about how your information has been treated please speak to your midwife. Alternatively, you can advise our administrator that you would like to speak to our Privacy Officer. The contact information you provide will be forwarded to the Privacy Officer who will contact you directly to discuss your concerns. This person is a partner in the practice and responsible for addressing any privacy concerns you may have.

For additional information, you may ask for a copy of our full privacy policy from our staff. Our full privacy statement is available on our website at www.familymidwiferycare.ca.

We do teach other midwives and parents by telling birth stories. While no names are ever mentioned, it may be possible to recognize your birth story. If you provide us with a photo we will usually display it in our office. Please let us know if either of these would be a concern for you.

Your Responsibilities

Staying Healthy

We ask our clients to take an active role in their health care by taking responsibility for their health. Efforts to make healthy choices about the things you have control over is the best way to grow a healthy baby. This includes good nutrition, not smoking or drinking alcohol, getting adequate rest, regular exercise, relaxation and stress reduction. Please let us know as soon as possible about prescription medication so that we can ensure you are taking the safest drug for the indication. We suggest avoiding over the counter medications unless you have reviewed them with your midwives or the mother risk telephone support line. Alcoholic and caffeinated drinks are not recommended in pregnancy.

Mother Risk at 416-813-6780 is a telephone support line through Sick Children's Hospital. They can answer your questions about the safety of prescription and over the counter medications as well as other harmful substances during pregnancy and breastfeeding.

Breastfeeding

We strongly encourage you to breastfeed your baby. Breastfeeding provides the best food for your baby and offers many lifelong benefits for both of you.

Although breastfeeding is the most natural thing in the world it is not always easy. As midwives we are very dedicated to assisting women to resolve problems such as sore nipples and not enough milk. We have many skills in this area, and we can access other resources such as lactation consultants when this is helpful.

Our postpartum home visits mean that mothers and babies don't have to leave home to be reassured that things are going well or to get help with breastfeeding. We ensure that the baby does not lose too much weight or become dehydrated while working with women to resolve any breastfeeding problems.

We can link you with other resources in the community such as Public Health, La Leche League and Women Everywhere Breastfeed. Community groups are a great way to get ongoing support after you leave our care when your baby is 6 weeks old.

Getting Informed

We encourage all clients to learn about normal labour and birth as well as possible complications and what we do about them. If you decide not to take Childbirth Education Classes, we suggest you read, watch videos or talking with us about pregnancy and birth. Please let us know how we can help you to find the information you need. There is a lot of information on our website: www.familymidwiferycare.ca. Please feel free to ask us questions at any time.

Trusting Relationship

In the interest of providing safe care and enhancing your birth experience, it is important for you to be honest with us during your pregnancy and labour, to share with us any feelings or situations in your life which may affect your pregnancy and birth. It is also important that we establish a trusting relationship and are able to communicate freely and openly. Please talk to your midwives if you have concerns or difficulty communicating so that we can address any issues and move forward to create a positive experience.

We look forward to working with you at this special time in your family.



www.familymidwiferycare.ca
519-763-8568



www.ontariomidwives.ca
1-866-418-3773

COLLEGE OF
MIDWIVES
OF ONTARIO



ORDRE DES
SAGES-FEMMES
DE L'ONTARIO

www.cmo.on.ca
416-327-0874

Privacy Statement

Our Midwifery Practice Group is bound by law and professional ethics to safeguard your privacy and the confidentiality of your personal information.

This includes:

- Collecting only the information that may be necessary for your care;
- Keeping accurate and up-to-date records;
- Safeguarding the medical records in our possession;
- Sharing information with other health-care providers on a “need to know” basis where required for your health care;
- Your request for care implies consent for our collection, use and disclosure of your personal information for purposes related to your care as noted above. All other purposes would require your express consent.
- We do release personal health information to the Ministry of Health to meet Ministry requirements for reporting.
- Retaining/destroying records in accordance with the law.

We may share your health information with other healthcare providers to continue to care for you. This includes healthcare providers at other organizations who can view your information through shared electronic systems/databases to continue to care for you.

You have the right to see your records. You may also obtain copies of your records.

Please speak with your midwives if you have any concerns about the accuracy of your records or if you would like to request a copy of your chart.

If you would like to discuss our privacy policy in more detail, or have specific questions or complaints about how your information is handled, please speak to your midwives.

You may contact our Practice Privacy Officer, Faye Stoter, with questions or concerns.

For additional information, you may read our full Privacy Policy, available on our website, www.familymidwiferycare.ca or from our staff.

A GUIDE TO THE SCOPE OF PRACTICE OF ONTARIO MIDWIVES – January 2015

(Adapted from the College of Midwives Consultation and Transfer of Care Standard:

http://www.cmo.on.ca/?page_id=1026)

Consult with a physician, or the most appropriate available health care provider	Transfer primary care to a physician
Initial History and Physical Exam	
<ul style="list-style-type: none"> • Significant current medical conditions that may affect pregnancy or are exacerbated due to pregnancy • Significant use of drugs, alcohol, other substances with known/suspected teratogenicity/risk of assoc. compl. • Previous uterine surgery other than one documented low-segment caesarean section • History of cervical cerclage • History of more than one second-trimester spontaneous abortion • History of three or more consecutive first-trimester spontaneous abortions • History of more than one preterm birth, or preterm birth less than 34+0 weeks in most recent pregnancy • History of more than one small for gestational age infant • History of severe hypertension or pre-eclampsia, eclampsia or HELLP syndrome • Previous neonatal mortality or stillbirth which likely impacts current pregnancy 	<ul style="list-style-type: none"> • Cardiac disease • Renal disease • Insulin-dependent diabetes mellitus • HIV positive status
Prenatal Care	
<ul style="list-style-type: none"> • Significant mental health concerns presenting or worsening during pregnancy • Persistent or severe anemia unresponsive to therapy • Severe hyperemesis unresponsive to pharmacologic therapy • Abnormal cervical cytology requiring further evaluation • Significant non-obstetrical or obstetrical medical conditions arising during pregnancy • STI requiring treatment • Gestational diabetes unresponsive to dietary treatment • Urinary tract infection unresponsive to pharmacologic therapy • Persistent vaginal bleeding other than uncomplicated spontaneous abortion less than 14+0 weeks • Fetal anomaly that may require immediate postpartum management • Evidence of intrauterine growth restriction • Oligohydramnios or polyhydramnios • Twin pregnancy 	<ul style="list-style-type: none"> • Molar pregnancy • Multiple pregnancy (other than twins) • Severe hypertension or pre-eclampsia, eclampsia or HELLP syndrome • Placental abruption or symptomatic previa • Cardiac or renal disease • Gestational diabetes requiring medication

<ul style="list-style-type: none"> • Isoimmunization • Persistent thrombocytopenia • Thrombophlebitis or suspected thromboembolism • Gestational hypertension • Vasa previa • Asymptomatic placenta previa persistent into third trimester • Presentation other than cephalic, unresponsive to therapy, at or near 38+0 weeks • Intrauterine fetal demise • Evidence of uteroplacental insufficiency • Uterine malformation or significant fibroids with potential impact on pregnancy 	
Labour, Birth and Immediate Post Partum	
<ul style="list-style-type: none"> • Preterm prelabour rupture of membranes (PPROM) between 34+0 and 36+6 weeks • Twin pregnancy • Breech or other malpresentation with potential to be delivered vaginally • Hypertension presenting during the course of labour • Abnormal fetal heart rate pattern • Suspected intraamniotic infection • Labour dystocia unresponsive to therapy • Intrauterine fetal demise • Retained placenta • Third or fourth degree laceration • Periurethral laceration requiring repair 	<ul style="list-style-type: none"> • Active genital herpes at time of labour or rupture of membranes • HIV positive status • Preterm labour or PPRM less than 34+0 weeks • Fetal presentation that cannot be delivered vaginally • Multiple pregnancy (other than twins) • Prolapsed or presenting cord • Placental abruption, placenta previa or vasa previa • Severe hypertension or pre-eclampsia, eclampsia or HELLP syndrome • Suspected embolus • Uterine rupture • Uterine inversion • Hemorrhage unresponsive to therapy
Consult with a physician, or the most appropriate available health care provider	Transfer primary care to a physician
Post Partum	
<ul style="list-style-type: none"> • Breast or urinary tract infection unresponsive to pharmacologic therapy • Suspected endometritis • Abdominal or perineal wound infection unresponsive to non-pharmacologic treatment • Persistent or new onset hypertension • Significant post-anaesthesia complication • Thrombophlebitis or suspected thromboembolism • Significant mental health concerns including postpartum depression and signs or symptoms of postpartum psychosis • Persistent bladder or rectal dysfunction • Secondary postpartum hemorrhage • Uterine prolapse • Abnormal cervical cytology requiring treatment 	<ul style="list-style-type: none"> • Postpartum eclampsia • Postpartum psychosis

Infant	
<ul style="list-style-type: none"> • 34+0 to 36+6 weeks gestational age • Suspected neonatal infection • In utero exposure to significant drugs, alcohol, or other substances with known or suspected teratogenicity or other associated complications • Findings on prenatal ultrasound that warrant postpartum follow up • Prolonged PPV or significant resuscitation • Failure to pass urine or meconium within 36 hours of birth • Suspected clinical dehydration • Feeding difficulties not resolved with usual midwifery care • Significant weight loss unresponsive to interventions or adaptation in feeding plan • Failure to regain birth weight by 3 weeks of age • Infant at or less than 5th percentile in weight for gestational age • Single umbilical artery not consulted for prenatally • Congenital anomalies or suspected syndromes • Worsening cephalhematoma • Excessive bruising, abrasions unusual pigmentation and/or lesions • Significant birth trauma • Abnormal heart rate, pattern or significant murmur • Hypoglycemia unresponsive to initial treatment • Hyperglycemia • Suspected neurological abnormality • Persistent respiratory distress • Persistent cyanosis or pallor • Fever, hypothermia or temperature instability • Vomiting or diarrhea • Evidence of localized or systemic infection • Hyperbilirubinemia requiring medical treatment or any jaundice within the first 24 hours • Suspected seizure activity 	<ul style="list-style-type: none"> • Major congenital anomaly requiring immediate intervention

A GUIDE TO THE SCOPE OF PRACTICE OF ONTARIO MIDWIVES – January 2015

(Adapted from the College of Midwives Consultation and Transfer of Care Standard:

http://www.cmo.on.ca/?page_id=1026

Consult with a physician, or the most appropriate available health care provider	Transfer primary care to a physician
Initial History and Physical Exam	
<ul style="list-style-type: none"> • Significant current medical conditions that may affect pregnancy or are exacerbated due to pregnancy • Significant use of drugs, alcohol, other substances with known/suspected teratogenicity/risk of assoc. compl. • Previous uterine surgery other than one documented low-segment caesarean section • History of cervical cerclage • History of more than one second-trimester spontaneous abortion • History of three or more consecutive first-trimester spontaneous abortions • History of more than one preterm birth, or preterm birth less than 34+0 weeks in most recent pregnancy • History of more than one small for gestational age infant • History of severe hypertension or pre-eclampsia, eclampsia or HELLP syndrome • Previous neonatal mortality or stillbirth which likely impacts current pregnancy 	<ul style="list-style-type: none"> • Cardiac disease • Renal disease • Insulin-dependent diabetes mellitus • HIV positive status
Prenatal Care	
<ul style="list-style-type: none"> • Significant mental health concerns presenting or worsening during pregnancy • Persistent or severe anemia unresponsive to therapy • Severe hyperemesis unresponsive to pharmacologic therapy • Abnormal cervical cytology requiring further evaluation • Significant non-obstetrical or obstetrical medical conditions arising during pregnancy • STI requiring treatment • Gestational diabetes unresponsive to dietary treatment • Urinary tract infection unresponsive to pharmacologic therapy • Persistent vaginal bleeding other than uncomplicated spontaneous abortion less than 14+0 weeks • Fetal anomaly that may require immediate postpartum management • Evidence of intrauterine growth restriction • Oligohydramnios or polyhydramnios • Twin pregnancy 	<ul style="list-style-type: none"> • Molar pregnancy • Multiple pregnancy (other than twins) • Severe hypertension or pre-eclampsia, eclampsia or HELLP syndrome • Placental abruption or symptomatic previa • Cardiac or renal disease • Gestational diabetes requiring medication

<ul style="list-style-type: none"> • Isoimmunization • Persistent thrombocytopenia • Thrombophlebitis or suspected thromboembolism • Gestational hypertension • Vasa previa • Asymptomatic placenta previa persistent into third trimester • Presentation other than cephalic, unresponsive to therapy, at or near 38+0 weeks • Intrauterine fetal demise • Evidence of uteroplacental insufficiency • Uterine malformation or significant fibroids with potential impact on pregnancy 	
Labour, Birth and Immediate Post Partum	
<ul style="list-style-type: none"> • Preterm prelabour rupture of membranes (PPROM) between 34+0 and 36+6 weeks • Twin pregnancy • Breech or other malpresentation with potential to be delivered vaginally • Hypertension presenting during the course of labour • Abnormal fetal heart rate pattern • Suspected intraamniotic infection • Labour dystocia unresponsive to therapy • Intrauterine fetal demise • Retained placenta • Third or fourth degree laceration • Periurethral laceration requiring repair 	<ul style="list-style-type: none"> • Active genital herpes at time of labour or rupture of membranes • HIV positive status • Preterm labour or PPRM less than 34+0 weeks • Fetal presentation that cannot be delivered vaginally • Multiple pregnancy (other than twins) • Prolapsed or presenting cord • Placental abruption, placenta previa or vasa previa • Severe hypertension or pre-eclampsia, eclampsia or HELLP syndrome • Suspected embolus • Uterine rupture • Uterine inversion • Hemorrhage unresponsive to therapy
Consult with a physician, or the most appropriate available health care provider	Transfer primary care to a physician
Post Partum	
<ul style="list-style-type: none"> • Breast or urinary tract infection unresponsive to pharmacologic therapy • Suspected endometritis • Abdominal or perineal wound infection unresponsive to non-pharmacologic treatment • Persistent or new onset hypertension • Significant post-anaesthesia complication • Thrombophlebitis or suspected thromboembolism • Significant mental health concerns including postpartum depression and signs or symptoms of postpartum psychosis • Persistent bladder or rectal dysfunction • Secondary postpartum hemorrhage • Uterine prolapse • Abnormal cervical cytology requiring treatment 	<ul style="list-style-type: none"> • Postpartum eclampsia • Postpartum psychosis

Infant	
<ul style="list-style-type: none"> • 34+0 to 36+6 weeks gestational age • Suspected neonatal infection • In utero exposure to significant drugs, alcohol, or other substances with known or suspected teratogenicity or other associated complications • Findings on prenatal ultrasound that warrant postpartum follow up • Prolonged PPV or significant resuscitation • Failure to pass urine or meconium within 36 hours of birth • Suspected clinical dehydration • Feeding difficulties not resolved with usual midwifery care • Significant weight loss unresponsive to interventions or adaptation in feeding plan • Failure to regain birth weight by 3 weeks of age • Infant at or less than 5th percentile in weight for gestational age • Single umbilical artery not consulted for prenatally • Congenital anomalies or suspected syndromes • Worsening cephalhematoma • Excessive bruising, abrasions unusual pigmentation and/or lesions • Significant birth trauma • Abnormal heart rate, pattern or significant murmur • Hypoglycemia unresponsive to initial treatment • Hyperglycemia • Suspected neurological abnormality • Persistent respiratory distress • Persistent cyanosis or pallor • Fever, hypothermia or temperature instability • Vomiting or diarrhea • Evidence of localized or systemic infection • Hyperbilirubinemia requiring medical treatment or any jaundice within the first 24 hours • Suspected seizure activity 	<ul style="list-style-type: none"> • Major congenital anomaly requiring immediate intervention

MIDWIFERY CARE HAS THREE IMPORTANT PRINCIPLES

1

Continuity of Care

You will be seen by the same small group of midwives in a midwifery practice. These midwives will be available to provide your primary care 24 hours a day, throughout your entire pregnancy and birthing process. Midwives can stay involved in your care even if you need to see a doctor during your pregnancy or labour. Midwives spend time developing a relationship with you and provide safe, personalized care during your pregnancy, labour, birth, and for 6 weeks afterwards.

2

Informed Choice

Midwives see pregnancy and birth as healthy processes and profound, natural events in a woman's life. Midwives provide you with information about all your options and support you in making decisions that are right for you.

3

Choice of Birthplace

Midwives are primary caregivers who provide care that respects your needs, values, and dignity. A midwife will offer you the choice of where to have your baby and will be able to provide the care you need whether you choose to give birth at home or in the hospital. In any setting, midwives consult with other health care providers when necessary.



The College operates under the principles of **accountability**, **responsiveness**, and **accessibility**. At the core of all College activity is the principle of **servicing** and **protecting** the public. The College's role is to **regulate** the practice of the profession of midwifery and to **govern** its members in accordance with legislation and regulation.

Contact us at any time: www.cmo.on.ca

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About Midwifery

Are you pregnant and considering a midwife?

Wondering how the College of Midwives of Ontario protects you?

Need information about Registered Midwives?



www.cmo.on.ca

COLLEGE OF
MIDWIVES
OF ONTARIO



ORDRE DES
SAGES-FEMMES
DE L'ONTARIO

ABOUT THE COLLEGE

Why does the College exist?

The College is here to protect the public – specifically childbearing women and their babies. The College regulates the practice of midwifery, just as various other Colleges in Ontario regulate the practice of dentistry, medicine, teaching, and occupational therapy (to name only a few).

What does the College do?

The College's main functions are: registering midwives, ensuring the quality of midwifery care, setting standards, and investigating and responding to any issues about midwifery care. The College decides what education is needed in order to work as a midwife in Ontario. It runs a program to ensure midwives maintain their skills, and provides the public with information about midwifery care.

What if I have a complaint or concern about my midwife or midwifery practice?

That's exactly why the College is here – for you. The College has a committee to deal with complaints or concerns regarding the conduct of its members. The College is committed to its responsibility to protect the public and holds its members to high standards. If you have any questions or concerns about your midwife or midwifery practice, you should contact the College directly. You can also visit our website for more information: www.cmo.on.ca

COMMON QUESTIONS ABOUT MIDWIFERY

How does the College protect me?

The College makes sure, in several different ways, that its members provide competent and ethical care. The College sets standards and guidelines for midwives to ensure you are protected, receive quality care, and are informed about your choices. The College also requires midwives to be responsive to individual and community needs.

When do I contact a midwifery practice?

You can contact a midwife as soon as you think you are pregnant. You do not need a referral from a doctor. Your midwife is responsible for providing all the care, support, and advice you need throughout your pregnancy.

What can I expect from a midwife?

A midwife will work with you to support the kind of positive pregnancy and birth experience you want. Midwives are registered health care professionals who are qualified to provide all your primary health care during the pregnancy, labour, and birth. Primary health care includes all the necessary tests, examinations, check-ups, support, and referrals that you may require. Midwives will also remain involved and continue to care for both you and your baby for 6 weeks after your baby is born.



How do I find a midwife?

The College maintains a public register which provides information about every midwife who practices in Ontario. You can search for midwives and midwifery practices on the College website: www.cmo.on.ca

Is home birth a safe option?

Yes! Giving birth at home has been shown to be as safe as in a hospital if you are having a healthy pregnancy, are attended by a registered midwife who has the appropriate equipment, and there is a way of getting to a hospital if required. The College requires every midwife to have the skills, equipment, and experience needed to make home birth a safe option.

Do I still need a doctor?

No, not usually. In a normal, healthy pregnancy and birth a midwife can provide all the required care, right from your very first appointment. Your midwife may refer you to a doctor or hospital for additional care if it is needed. At all times, the safety and health of you and your baby are of primary importance to a midwife.

Do I have to pay for midwifery care?

The short answer is no. Midwifery services are completely funded by the Ontario Ministry of Health and Long-Term Care, so clients do not pay for care.

Section 2: Pregnancy Basics

Section 2 Pregnancy Basics

Pregnancy and Breastfeeding Pocket Guide

Link to:

<https://www.chusj.org/en/soins-services/P/Pharmacie/Centre-IMAGE/Petit-Guide-Grossesse-et-allaitement>

to download

Section 2 Wellington Dufferin Guelph Public Health

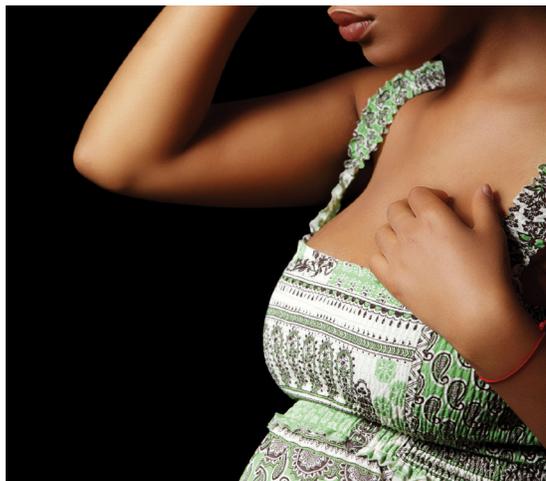
Guide to Services

Link to:

<https://www.wdgpUBLICHEALTH.ca/your-kids/pregnancy>

for more information

NAUSEA AND VOMITING IN PREGNANCY



THE SOCIETY OF
OBSTETRICIANS AND
GYNAECOLOGISTS
OF CANADA

www.sogc.org

education
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education
education

Nausea and vomiting is a normal part of pregnancy, but there are steps you can take to feel better.

If you are pregnant and have nausea and vomiting, you're not alone. Over half of all pregnant women suffer from this common ailment, sometimes called 'NVP'.

The symptoms can be very unpleasant and can interfere with your daily routine. The good news is that nausea and vomiting isn't usually harmful to you or your unborn child.

And, there are many ways of easing your nausea and vomiting. Your doctor, nurse or midwife can help you find the right solution for a comfortable and healthy pregnancy.

'Nausea and vomiting of pregnancy' is also called 'morning sickness' — even though it can happen at any time of the day.

What causes nausea and vomiting?

No one knows exactly why women have nausea and vomiting when they are pregnant. It's probably due to all of the changes taking place in your body, such as high levels of hormones in your blood.

However, it could be due to an illness or other medical problem. Not all nausea and vomiting is related to pregnancy.

How long will these symptoms last?

Nausea and vomiting usually starts around the sixth week of pregnancy and stops around the 12th week. However, you may still have queasiness after that, often up until your 20th week. Some women will have nausea and vomiting for longer, maybe even until the end of pregnancy.

Should I be worried?

Nausea and vomiting isn't usually harmful for pregnant women and their babies. For most women, nausea and vomiting doesn't last all day and there are times when they feel hungry and can keep food down.

However, in severe cases you may not be getting the nutrients and fluids that you and your baby need. Speak with your health-care provider if you are so sick that you miss meals day after day.

What if I just can't keep anything down?

About one per cent of pregnant women in Canada have 'hyperemesis gravidarum'. This is when you are so sick that the lack of fluids and nutrients being taken in may be dangerous for you and your baby.

The biggest worry is dehydration. If you don't have to go pee very often or have dark yellow urine, and you cannot drink enough liquid to correct this condition, call your health-care provider. You should also get help if you are so sick that you are losing weight rapidly.

Nausea and vomiting can be difficult to control; the sooner you are diagnosed and get treatment, the more likely you will be to avoid severe symptoms.

Helpful tips to control nausea and vomiting:

What you eat, and when

- In the morning, eat a few crackers and rest for 15 minutes before getting up.
- Get up slowly and do not lie down right after eating.
- Eat small meals or snacks often so your stomach does not become empty (for example, every two hours). Try not to skip meals.
- Eat what you feel like and eat when you are hungry, though you may want to avoid cooking or eating spicy, fatty or fried foods because of the smell.
- If cooking smells bother you, open windows and turn on the stove fan. If possible, ask someone else to cook. Eat cold food instead of hot, as it may not smell as strongly.
- Sniffing lemons or ginger can sometimes help an upset stomach.
- Eating salty potato chips can help settle the stomach enough to eat a meal.



Tips to get enough fluids

- Sip small amounts of fluid often during the day.
- Avoid drinking fluids during, just before or immediately after a meal.

Food ideas to help relieve nausea

- Salty: Chips, pretzels
- Tart/sweet: Pickles, lemonade
- Earthy: Brown rice, mushroom soup, peanut butter
- Crunchy: Celery sticks, apple slices, nuts
- Bland: Mashed potatoes, gelatin, broth
- Soft: Bread, noodles
- Sweet: Cake, sugary cereals
- Fruity: Watermelon, fruity popsicles
- Liquid: Juice, seltzer, sparkling water, ginger ale
- Dry: Crackers

Getting enough rest

- Get plenty of rest, and try napping during the day; nausea tends to worsen when you are tired. Many women find they need more sleep in the first three months of pregnancy.
- You may need to take some time off work or make other arrangements for household chores and childcare.
- Get help and support from friends and family.



Lifestyle strategies

- Get plenty of fresh air and avoid warm places as feeling hot can add to nausea.
- Try acupressure wrist bands.
- Acupuncture can help some women. Speak to your health-care professional first and look for an experienced and licensed acupuncturist.
- Try ginger, an alternative remedy thought to settle the stomach. Doses of up to 250 mg four times a day appear to be safe.
- If multivitamins make your nausea worse, try taking your prenatal vitamins with food or just before bed. There are also pills that are smaller or have lower iron content. If you can't take *any* multivitamin, take a folic acid pill (0.4 to 1.0 mg) alone until you feel better.

Is there medication that can help?

Many women want to avoid taking medicine when they are pregnant. However, changing your diet and daily routine might not be enough to relieve your symptoms. You shouldn't feel guilty about wanting to feel better, and your health-care provider can prescribe medication to help reduce your nausea and vomiting.

In Canada, Diclectin® is the only medication approved for the treatment of nausea and vomiting in pregnancy. It contains doxylamine (an antihistamine) and pyridoxine (vitamin B6). Its safety and effectiveness for pregnant women is recognized by Health Canada and studies have shown no evidence that harmful effects are experienced by babies.

If this medication does not ease your symptoms, speak with your health-care professional to discuss other solutions.

Are natural products safe?

People often assume that 'natural' products or remedies are safer than prescription medications. However, many of these natural or herbal products have not been clinically tested to evaluate their safety and effectiveness. Even fewer products have been properly tested during pregnancy. Ask your health-care provider before taking any herbal remedies.

Should I worry if I don't have nausea and vomiting?

No. Every pregnancy is unique: the severity of nausea and vomiting you experience may be different from other women, and may even be different each time you are pregnant.

Further resources:

For advice on nausea and vomiting in pregnancy, you can call the Motherisk program of the Hospital for Sick Children in Toronto toll-free at 1-800-436-8477. For information on the safety and risks of medications during pregnancy and breastfeeding, call the Motherisk program at 1-877-439-2744 or visit www.motherisk.org.

Other resources from the Society of Obstetricians and Gynaecologists of Canada:

- Brochures available online at www.sogc.org:
 - Medications and drugs: Before and during pregnancy
 - Medications and drugs while breastfeeding
 - Healthy eating, exercise and weight gain before and during pregnancy
- The book, "Healthy Beginnings: Giving your baby the best start from preconception to birth", available at www.sogc.org/healthybeginnings

FOLIC ACID

FOR PRECONCEPTION AND PREGNANCY



THE SOCIETY OF
OBSTETRICIANS AND
GYNAECOLOGISTS
OF CANADA

www.sogc.org

education
education
education
education

You are having a baby or planning a pregnancy. Learn what you need to know about folic acid.

What is folic acid?

Folic acid (also known as folate or vitamin B9) is a vitamin which helps grow and protect cells in your body. It is found in some foods and in multivitamin supplements.

Why is folic acid important during preconception and pregnancy?

Your body needs folic acid when cells are growing and dividing very quickly. This happens during pregnancy as your uterus (womb) expands, the placenta develops, your body circulates more blood, and the fetus grows. Because of this, folic acid is important for a healthy pregnancy.

As your body grows, your baby is also growing very quickly. Maintaining healthy eating habits and proper levels of vitamins and minerals (such as folic acid) before conception and during pregnancy helps decrease the risk of some birth defects. Folic acid lowers the risk of birth defects such as neural tube defects (NTDs), heart and limb defects, urinary tract anomalies, narrowing of the lower stomach valve, and oral facial clefts (like cleft lip and cleft palate).

How can I get enough folic acid?

Folic acid is found in dark green, leafy vegetables, citrus fruit, whole grains, and other foods. In Canada, since 1998, enriched white flour, pasta, and cornmeal have been fortified with folic acid. Since then, there has been a decline in the rate of neural tube defects in Canada.

Here is a list of some foods that are recommended sources of folic acid:

fortified grains	broccoli
spinach	peas
lentils	brussels sprouts
chickpeas	corn
asparagus	oranges

Making sure you get enough folic acid every day from food is a challenge. That's why Canadian experts recommend you take a multivitamin with folic acid to ensure you get the amount you and your baby need.

When should I take folic acid supplements?

Since folic acid is so important in the early stages of pregnancy, start taking a multivitamin with folic acid if you are trying to conceive. It's important to get your daily dose of folic acid even before you become pregnant. Continue through pregnancy and for at least four to six weeks after birth and as long as you are breastfeeding.

How do I choose a multivitamin?

Talk it over with your health-care professional. If you are at a low risk for neural tube defects (NTDs), choose a multivitamin with 0.4-1.0 milligrams (mg) of folic acid. However, if you are at a higher risk for NTDs, your health-care professional may suggest a higher daily dose of folic acid. You might have a higher risk if:

- you had a previous pregnancy affected by NTDs
- you have a family history of NTDs
- you belong to an ethnic group that research shows is at a higher risk for NTDs (such as Sikh or Celtic)
- you have insulin-dependent diabetes
- you are obese
- you take certain medications to treat a seizure disorder
- you have a hard time remembering to take medications
- you have an addiction to alcohol or drugs*

If you are at increased risk, your health-care provider may recommend you take up to 5.0 milligrams of folic acid daily, for at least three months before conception. After 10-12 weeks of pregnancy, switch to the lower dose (0.4-1.0 mg) for the rest of the pregnancy and continue while breastfeeding.

**Use of drugs and alcohol during pregnancy can result in serious side effects for your baby, including low birth weight and birth defects.*

Neural tube defects (NTDs)

In the beginning of pregnancy, even before the time most women find out they are pregnant, folic acid plays an important role in the early development of the part of the fetus called the neural tube. The neural tube forms in weeks three and four of pregnancy and grows into the brain and spinal cord. When the tube doesn't close properly, this is called a neural tube defect (NTD). Some examples of NTDs are spina bifida (the spine or its covering stick out of the back), anencephaly (absence of part of the brain), and encephalocele (part of the brain grows outside the skull).

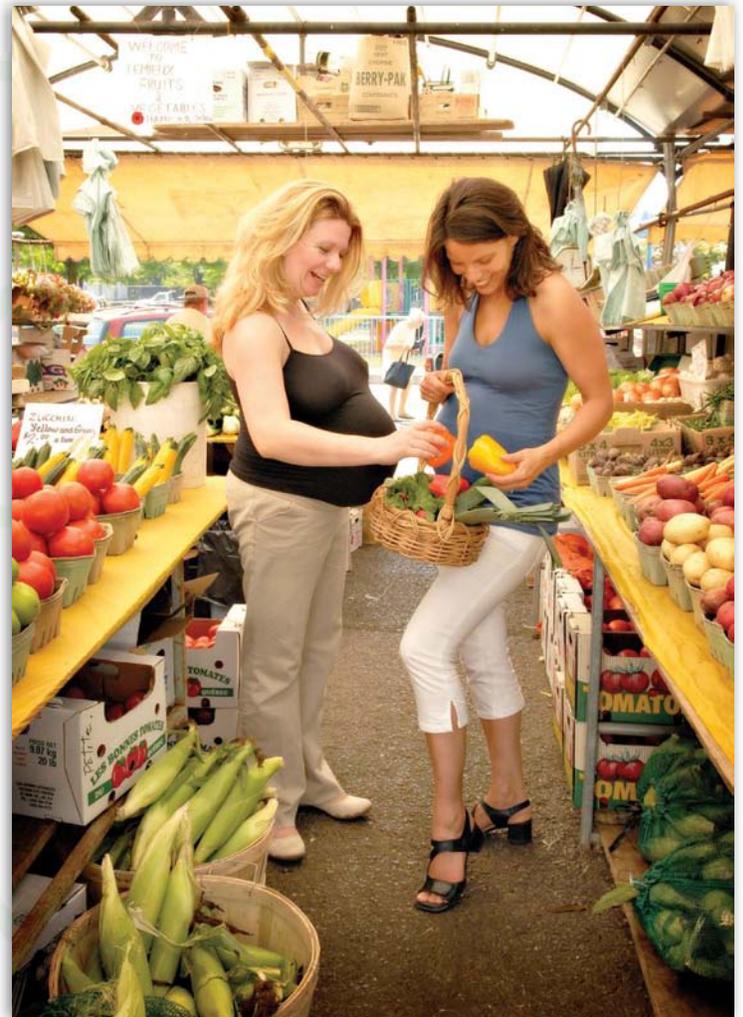
Can I have too much folic acid or vitamins?

If you take a multivitamin with folic acid and eat a balanced diet by following Canada's Food Guide, you won't have too much folic acid. If you do end up with any extra in your body, it will usually just pass in your urine. If you need a higher than normal amount of folic acid, talk to your health-care provider about taking an additional folic acid supplement with your multivitamin to get the correct amount.

Taking more than the recommended dose of vitamins can be harmful. Make sure you do not take more than the recommended dose of your multivitamin per day. Read the label on any vitamins when you buy outside the pharmacy. Choose a multivitamin with vitamin A as beta-carotene instead of as retinol since too much retinol may cause birth defects.

To learn more about folic acid and pregnancy

- "Healthy Beginnings: Giving your baby the best start from preconception to birth": www.sogc.org/healthybeginnings
- Eating Well with Canada's Food Guide: www.hc-sc.gc.ca/fn-an/food-guide-aliment
- The Society of Obstetricians and Gynaecologists of Canada (SOGC) and Motherisk's Joint Guideline on "Pre-conceptional Vitamin/Folic Acid Supplementation 2007": www.sogc.org/guidelines
- Public Health Agency of Canada: www.phac-aspc.gc.ca/fa-af



Folic Acid and Neural Tube Defects

Why you need to take folic acid

Folic acid is vital to the normal growth of your baby's spine, brain and skull. Taking a daily vitamin supplement that has folic acid can reduce the risk of your baby having a neural tube defect.

The benefits of taking folic acid to reduce the risk of NTDs are highest in the very early weeks of pregnancy. At this stage, most women do not know they are pregnant. For this reason, taking folic acid before you become pregnant and in the early weeks of pregnancy is very important.

It's never too early to ask your health care provider about folic acid.

About neural tube defects

The neural tube is the part of the developing baby that becomes the brain and spinal cord. NTDs occur when the neural tube does not fully close during the early weeks of pregnancy.

This results in spine, brain and skull defects that can lead to stillbirth or lifelong disability. Spina bifida (when the spine does not close) and anencephaly (when part of the brain and skull are missing) are the most common NTDs.

Proper folic acid dosage

All women who could become pregnant need to take a multivitamin with 0.4 mg of folic acid in it every day. Even if you are not planning to become pregnant, you need to take folic acid because many pregnancies are unplanned.

If you are planning to become pregnant, take the supplement for at least three months before pregnancy.

If you are already pregnant and not taking folic acid, start taking it as soon as possible. During your pregnancy, keep taking your daily folic acid supplement.

Why you may need a higher dose

Some women may need a higher dose of folic acid. This can include women with:

- a previous pregnancy affected with NTD
- a family history of other folic acid-related birth defects
- a family history of NTD (or a male partner with a family history of NTD)

Women with certain medical conditions and on certain drugs may also need a higher dose of folic acid. These conditions and drugs may include:

- celiac disease
- kidney dialysis
- alcohol overuse
- advanced liver disease
- gastric bypass surgery
- inflammatory bowel disease
- pre-pregnancy diabetes (type 1 or 2)
- antiepileptic or other folate inhibiting drugs

Talk to your health care provider to see if you require a higher dose of folic acid.

Dosage limits for folic acid

Do not take more than one daily dose of your supplement as described on the product label. You should not increase your dose of folic acid beyond 1 mg per day without a health care provider's advice.

Benefits of a healthy diet

Taking a vitamin supplement does not reduce or replace the need for a healthy, well-balanced diet. Some great sources of folate include:

- corn
- beans and lentils
- dark green vegetables
- peas
- spinach
- broccoli
- Brussels sprouts
- oranges

Foods fortified with folic acid are also great sources of folate. These foods include:

- white flour
- ready-to-eat cereals
- enriched pasta and cornmeal

However, dietary sources on their own are not enough to reach the required folate level to protect against NTDs. You still need to take a multivitamin with folic acid.

Taken from:

<https://www.canada.ca/en/public-health/services/pregnancy/folic-acid.html>

Section 2 Sensible Guide to a Healthy Pregnancy

Link to:

<https://www.canada.ca/en/public-health/services/health-promotion/healthy-pregnancy/healthy-pregnancy-guide.html>

for more information

Section 2 Her Nutrition.ca

Nutrition for Women Simplified

Link to:

<https://www.hernutrition.ca/>

for more information

Section 2 Safe Food Handling for Pregnant Women

Health Canada

Link to:

<https://www.canada.ca/en/health-canada/services/food-safety-vulnerable-populations/food-safety-pregnant-women.html>

for more information

Dietary Sources of Iron

What is iron?

Iron is a mineral found in food that your body needs. It helps carry oxygen to all parts of your body.

What if my iron level is low?

If your iron level is low, your blood carries less oxygen to the cells. This may make you feel weak, tired and look pale.

What foods have iron?

You get iron from a number of foods. There are 2 types of iron in our diet: heme and non-heme iron. Heme iron is found in animal products such as red meat, fish and poultry. Non-heme iron is found in plant products such as grains, nuts, beans, legumes, vegetables and fruit.

Iron from animal products is better absorbed than iron from plant products. If you do not eat any animal products, you will need to eat twice as much non-heme iron. Look at the chart "Sources of Iron" in this handout.

The amount of absorption of non-heme iron can be increased or decreased by other foods in the diet. Here are some tips to help your body absorb the iron from food:

- Combine heme iron rich foods with non-heme iron rich foods when possible.
- Include a source of vitamin C with your meals. Vitamin C helps iron absorption. Some sources of vitamin C include: Broccoli, grapefruit, potatoes, green/red peppers, strawberries, peas, cabbage, cantaloupe, tomatoes, oranges, orange juice, tomato juice, brussel sprouts.
- Tea and coffee contain compounds that can decrease iron absorption. Have tea and coffee at least one hour before or after your iron-rich meal.

Include at least one iron-rich food and a food that increases iron absorption at most meals and snacks.

Ways to add more iron to your diet ...

- **Molasses** - Use it in baking instead of sugar or use as a partial substitute to sugar
- **Dried peas, beans, lentils, pinto beans** - Add to soups, salads, and casseroles
- **Tofu**
- **Cream of Wheat™ (fortified)** - Enjoy it for breakfast or as a bedtime snack
- **Oatmeal**
- **Prune and tomato juice** - Good to drink or use in cooking or baking
- **Wheat germ** - Sprinkle over cereals, add to muffins, breads, and casseroles
- **Barley** - Use to thicken soups and stews
- **Granola** - Make your own with whole grain & fortified cereals, dried fruits, wheat germ, molasses, seeds, nuts
- **Dried fruit (especially apricots, prunes)** - Add to cereals, breads, cookies and desserts
- **Eggs** - Use as a main dish, enjoy hard boiled as a snack or added to salads
- **Sardines** - Serve in a salad or as a snack on whole grain crackers
- **Beef** - Add cooked strips of red meat to soups, salads, and pasta dishes
- **Liver, kidney and other organ meats** - Add to meatloaf or stew. Serve paté as an appetizer on whole grain crackers or toast



Healthy Weight Gain During Pregnancy

Gaining weight is a natural part of pregnancy. It helps your baby grow and develop, and prepares you for breastfeeding.

How much weight you should gain depends on your Body Mass Index before you became pregnant (your pre-pregnancy BMI).

Find out your pre-pregnancy BMI and your recommended weight gain at healthcanada.gc.ca/pregnancy-calculator and talk to your health care provider.

Based on my pre-pregnancy BMI (___), kilograms (kg)
my recommended weight gain is between ___ and ___ pounds (lbs)

Most of this weight gain will happen in the second and third trimesters, as your baby and the tissues that support your pregnancy continue to grow.

Where does the weight go?

Here's an example:

Sarah's pre-pregnancy BMI: 23
Her recommended weight gain:
11.5-16 kg (25 to 35 lbs)

- Extra blood, fluids and protein: 3.5 kg
- Breasts and energy stores: 3 kg
- Uterus: 1 kg
- Placenta: 1 kg
- Baby: 3.5 kg
- Amniotic Fluid: 1 kg

Sarah's total weight gain
at 40 weeks: 13 kg (29 lbs)



Gaining a healthy amount of weight during pregnancy has benefits:

- it helps your baby have a healthy start;
- it can reduce your risk of complications in pregnancy and at delivery; and
- it improves your long-term health.

Here are two things you can do **every day** to gain a healthy amount of weight during pregnancy:

Enjoy being active.

- Add up activities like brisk walking or swimming in periods of at least 10 minutes, for a total of about 30 minutes of activity each day.
- Remember to talk to your health care provider before increasing your activity level or starting an exercise program.

Eat “twice as healthy” not “twice as much”.

- One extra snack each day is often enough. For example, have an apple or a pear with a small piece of cheese (50 grams or 1 ½ oz) as an afternoon snack.
- Follow *Eating Well with Canada's Food Guide* to eat the amount and type of food that is right for you and your baby.



For more information on eating well and being active during pregnancy, visit: healthcanada.gc.ca/foodguide-pregnancy.



I'm pregnant.

Should I exercise?

www.healthypregnancyBC.ca

Yes, the most up-to-date advice is that physical activity is safe during pregnancy. In fact, there are *more* health risks if you are *not* active. Being physically active most days is a part of a healthy pregnancy.

If you *were not* physically active before pregnancy:

Many women think of pregnancy as a great time to make new healthy habits. Use this time to make daily physical activity a life-long habit for both you and your child.

Start easy and progress gradually:

- Talk to your doctor before starting a new exercise program
- The type of activity you choose is up to you – choose activities that you enjoy.
- Build physical activity into your daily routine. Plan how you will include it in your day and week.
- Start with mild activities such as walking and swimming. Even 5 minutes a day will help. For example, take the stairs instead of the elevator or get off the bus a few stops early and walk the rest of the way.
- Gradually increase the time you're active to 30 minutes a day. This can be all at once or as 10 minute blocks of time.

If you *were* physically active before pregnancy:

- Keep being active most days of the week.
- If you are not feeling up to your usual activities, find ways to include activity into your daily routine. For example, park your car at the far end of the parking lot. Being active for even 10 minutes at a time counts.

Aim for 30 minutes of physical activity most days.

Being active can:

- improve your mood
- decrease stress
- increase your energy levels
- promote a healthy weight
- promote better sleep
- increase your muscle tone, strength, and endurance
- prepare your body for birth
- speed up your recovery after labour and delivery

I'm pregnant.



Should I exercise?

www.healthypregnancyBC.ca

Tips for Exercising Safely

.....

Don't overdo it.

You should be able to carry on a normal conversation while you are active.

Modify or replace weight-bearing activities.

Modify or replace activities such as running, high-impact aerobics, hiking, and tennis as your pregnancy progresses.

Hormones make your joints looser in pregnancy.

In your second and third trimesters, avoid exercises that involve quick changes of direction.

As your pregnancy progresses, your centre of gravity will shift and you may lose your balance more easily.

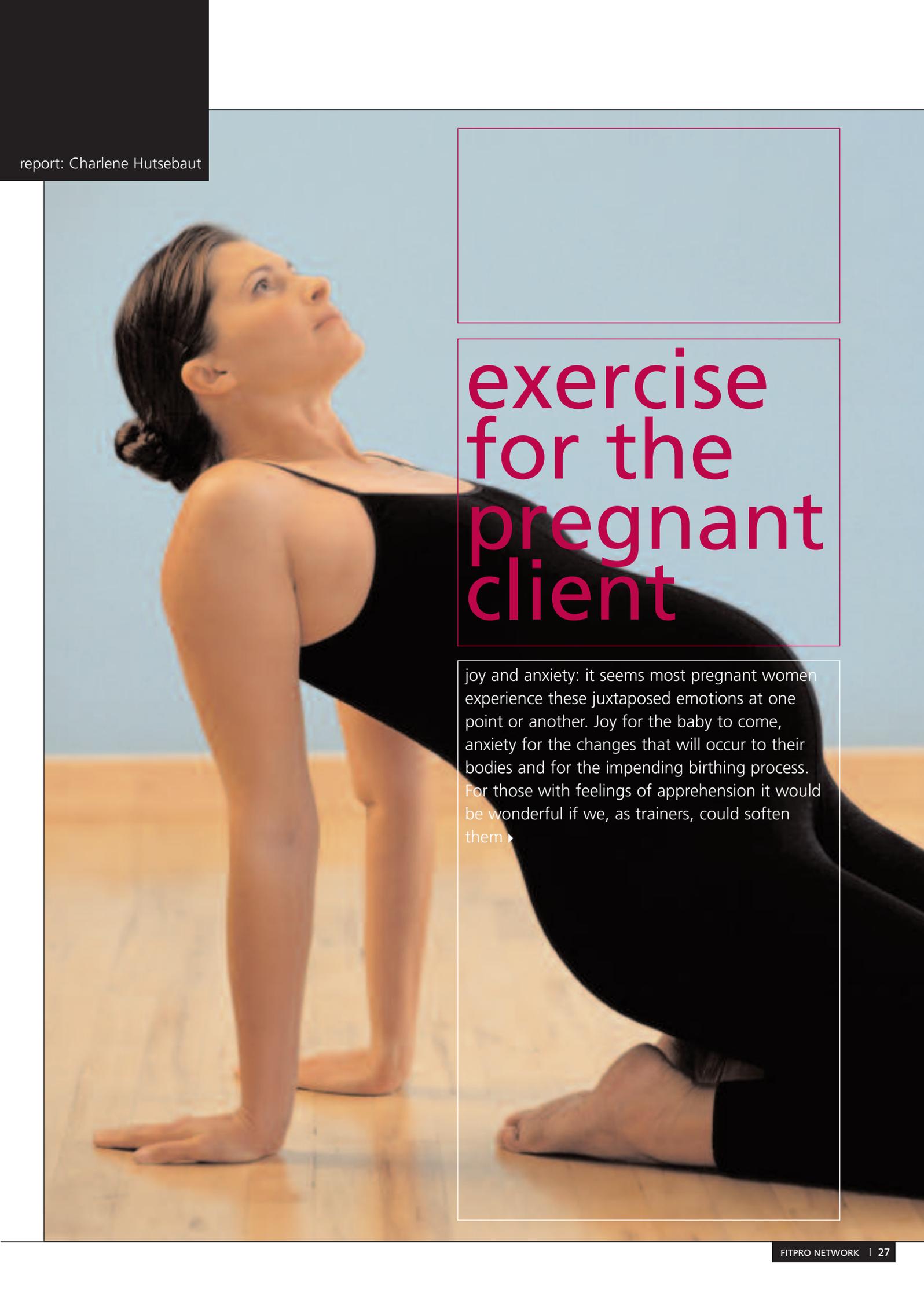
When doing exercises that involve balance, have something nearby to hold onto, for example a chair, if you start to lose your balance.

Keep cool and hydrated.

Drink lots of water before, during, and after physical activity to avoid overheating and dehydration. Avoid being active outdoors on very hot or humid days.

Taking care of myself

I wasn't the fitness-type before I was pregnant. But I wanted to do everything I could to be healthy for my baby. So, I started going to the prenatal yoga class at my local Rec. centre. I loved how de-stressed I felt after class. And, I've met other Moms-to-be. Now two or three of us meet up and walk together on Mondays and Wednesdays. What started out as something I was doing for the baby ended up being one of my favourite parts of my day.



exercise for the pregnant client

joy and anxiety: it seems most pregnant women experience these juxtaposed emotions at one point or another. Joy for the baby to come, anxiety for the changes that will occur to their bodies and for the impending birthing process. For those with feelings of apprehension it would be wonderful if we, as trainers, could soften them ▶

Thankfully we can. Research now allows us to reassure our mothers-to-be that exercise can help them through pregnancy and towards childbirth. According to the Canadian Clinical Practice Obstetrics Committee, all mothers without contraindications should participate in exercise. This now includes those who have previously not exercised.

exercise contraindications

Contraindications lists are a 'must have' tool, and should be followed religiously and you should always remember the safety of the mother and baby is paramount. Your first question to a pregnant client, current or new, should be, 'Have you been cleared by your doctor?' Then read over the list (see table 1) with them to ensure they are clear of any of the absolute contraindications. Those with contraindications on the relative list can exercise with close monitoring by you and their doctor. Any client you have been training before pregnancy can continue their normal routine. A new client who has previously been sedentary can start with 15 minutes continuous exercise, three times per week, gradually increasing to 30-minute sessions, four times per week. Aerobic training goals should be reasonable without trying to reach peak fitness or train for a high level competition. If your client is an elite athlete, communicate closely with their obstetrician.

table 1 contraindications to exercise in pregnancy

absolute contraindications	relative contraindications
• ruptured membranes	previous spontaneous abortion
• preterm labour	previous preterm birth
• hypertensive disorders of pregnancy	mild/moderate cardiovascular disorder
• incompetent cervix	mild/moderate respiratory disorder
• growth restricted foetus	anemia (Hb<100g/L)
• high order multiple gestation (>triplets)	malnutrition or eating disorder
• placenta previa after 28th week	twin pregnancy after 28th week
• persistent 2nd or 3rd trimester bleeding	other significant medical conditions
uncontrolled Type I diabetes, thyroid disease, or other serious cardiovascular, respiratory, or systemic disorder	

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exercise benefits

Current research shows there are more benefits to the pregnant woman who exercises than disadvantages. If participating in exercise activities during pregnancy a mother will:

1. increase cardiovascular and muscular fitness
2. keep maternal weight gain within normal acceptable ranges (see table 2)
3. decrease risk of gestational diabetes or pregnancy-induced hypertension
4. decrease chances of developing varicose veins and deep vein thrombosis
5. decrease incidence of dyspnoea (shortness of breath) or low back pain
6. experience more positive psychological adjustments to the physical changes of pregnancy.

Always choose activities for your client that minimise the risk of

table 2 institute of medicine guidelines for total weight gain during pregnancy, based on pre-pregnancy body mass index (BMI)

pre-pregnancy BMI	recommended total weight gain (pounds) for singleton pregnancies
less than 19.8	28-40
19.8-26.0	25-35
26.1-29.0	15-25
More than 29.0	15

loss of balance and fetal trauma and feel free to modify them according to your clients needs. Walking, stationary cycling, cross-country skiing, swimming, aquafit classes, and weight training are all good choices. There are many women who can participate in either regular aerobics or step classes with no problems. They must remember to keep movements non impact and keep their step level low, decreasing both these factors as they move through the pregnancy.

weight training programmes

When setting up a weight training programme there are certain considerations to keep in mind:

1. Supine positions should be avoided after 16 weeks' gestation. This is due to the uterus pressing against the vena cava and causing hypotension (resulting in light-headedness in the mother and potential lack of blood circulating to the baby). One option is to perform chest presses and abdominal/pelvic floor stabilisations on an incline bench. A 'hands and knees' position on the mat seems to work as well. Here the client can perform press-ups within a reasonable range and abdominal stabilisation and lower back exercises.
2. Often abdominal strengthening exercises may be hampered by diastasis recti (separation of the rectus abdominus away from the midline) and loss of feeling and the ability to recruit the abdominal muscles. Many women suffer from the latter, so here you can have them focus more on the pelvic floor stabilisations. The Kegel or pelvic floor stabilisations should be taught all throughout the pregnancy and continued postpartum.
3. Overhead movements should be avoided during the third trimester. This can cause lightheadedness in the mother and lack of circulation to the baby.
4. During pregnancy, the hormone relaxin softens ligaments and supportive soft tissues to allow the pelvis to open more during childbirth. This is a clever change the body makes and is needed but must be considered in the programme design or injuries can be incurred. Watching range of motion (ROM) and amount of weight on resistance exercises is important, as is ROM in stretching positions. Often women will feel as though there is an opening up at the symphysis pubis during pregnancy. This can be extremely painful and uncomfortable. Communicate with the client, asking if walking or any seated positions are uncomfortable. If so, take a break from walking and give the option of a recumbent bike, since this allows a seated position with pressure through the ischial tuberosities rather than the symphysis pubis. Other options are swimming or aquafit classes that are non weight-bearing through the area.
5. Posture will be affected during pregnancy by the birth weight and increased size of the breasts. This can be a source of irritation through the cervical, thoracic and lumbar areas that can continue through the postpartum breast-feeding period and as the baby



grows. To help the client avoid any undue back pain or change in posture, easy chest stretches and upper, mid and lower back resistance exercises should be included in the program. Rear flies with light dumbbells are a good option as is a one-arm row supported with one hand on a bench and also lower back stabilisations on hands and knees.

These guidelines should be monitored and discussed with your client as they move through their pregnancy and postpartum stages. Remember all women respond differently to pregnancy so minor individual adjustments can always be made.

exercise intensity

Intensity is another area to be aware of when setting programmes. Exercise intensity can be measured in three different ways: modified heart rate zone for pregnancy (see table 3); 'talk test' which indicates the exertion level through conversation (i.e. a lowering of intensity if the client cannot carry on a light conversation); and perceived exertion according to the Borg Scale (see table 4). Each client will react differently to intensity so you may want to try all three of these tools to see which works best for the individual.

One other note is to be aware of core body temperature. Most women will know instinctively if they are 'over heating'. This is a sign for them to ease off and modify what they are doing. If the core body temperature goes too high the foetus is put at greater risk.

when to stop exercise

Women should stop exercising if any of the following symptoms occur:

- excessive shortness of breath
- chest pain
- painful uterine contractions
- leakage of amniotic fluid
- vaginal bleeding.

after the birth

In the postpartum period women can resume most exercises. The safest strategy is to have your client visit their doctor for their six-week postpartum evaluation and be cleared for exercise. A major consideration in this period is fatigue. The birth and baby aftercare

table 3 modified heart rate target zones for aerobic exercise in pregnancy^{1,2}

maternal age	hear rate target zone (beats/min)	heart rate target zone (beats/10sec)
less than 20	140-155	23-26
20-29	135-150	22-25
30-39	130-145	21-24
40 or greater	125-140	20-23

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table 4 Borg's rating of perceived exertion³

- 6
- 7 very, very light
- 8
- 9 somewhat light
- 10
- 11 fairly light
- 12
- 13 somewhat hard
- 14
- 15 hard
- 16
- 17 very hard
- 18
- 19 very, very hard
- 20

A rating of 12-14 is appropriate for most pregnant women.

can be extremely exhausting. Ask your client at the beginning of every session how she feels and move through the workout accordingly. Kegel exercises can be resumed straight after birth as long as the client feels that sufficient healing of the vaginal area has taken place. You can also reassure your client that moderate exercise during breastfeeding will not affect the quantity or composition of breast milk or impact their child's growth.

While contraindications should be looked for and guidelines to exercise followed, working with a client who is pregnant can be very rewarding. Make sure the lines of communication are wide open as changes will be occurring on a daily basis and allow yourself to share the joy and 'glow' of your client's pregnancy. 

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1. Physical Activity Readiness Medical Examination for Pregnancy [PARmed-X for pregnancy]. (2002). Ottawa: Canadian Society for Exercise Physiology. Available online at <http://www.csep.ca/forms.asp>. Cited May 2, 2003.
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WORKING DURING PREGNANCY



THE SOCIETY OF
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For most women with healthy pregnancies, it is safe to work until just before childbirth.

Can you work during pregnancy? How long you can work for? The answer depends on your health, the health of your baby and the type of work that you do. Talk to your doctor, nurse or midwife — he or she can help you plan for when you will stop working.

Is it safe for me to work during pregnancy?

For most women with uncomplicated pregnancies, the type of work they do does not usually pose any health risks for them or their babies. However, if your work is hard on your body, your doctor, nurse or midwife may suggest you make changes until after your pregnancy.

You might also be at risk if you work with certain chemicals, solvents, fumes or radiation. To find out more about this type of hazard, at work and at home, go to www.motherisk.org. Women planning a pregnancy should be careful and follow all safety guidelines. If you are already pregnant, your care provider may advise you to avoid contact with some of these workplace hazards. Your employer may also have policies in place to protect pregnant women.

Work activities to discuss with your care provider

Your doctor, nurse or midwife may recommend changes if your work involves the following:

- Stooping or bending over more than ten times each hour
- Climbing a ladder more than three times during an eight-hour shift
- Standing for more than four hours at one time
- Climbing stairs more than three times per shift
- Working more than 40 hours per week
- Shift work
- Lifting more than 23 kg (50 lbs) after the 20th week of pregnancy
- Lifting more than 11 kg (24 lbs) after the 24th week
- Stooping, bending or climbing ladders after the 28th week
- Needing to lift any heavy items after the 30th week
- Needing to stand still for more than 30 minutes of every hour after the 32nd week
- Working with chemicals, solvents, fumes or radiation

What about Fifth disease? Some women who work with young children may be at higher risk of being exposed to this common virus which, in very rare cases, could harm your unborn baby. However, there is usually no need for a woman to cease work because of this risk.

I have an uncomplicated pregnancy. When should I stop working?



A woman who is having a normal, healthy pregnancy is considered 'fit to work' until the start of labour. However, the choice of when to stop working is *yours*, and should be discussed with your health-care provider, who is there to support you in making decisions that are right for you. Many women choose to stop working two to six weeks before their expected delivery dates, although others may need more or less time than that.

Will I receive maternity benefits when I stop working?

For a woman in Canada with a healthy pregnancy, stopping work before the onset of labour is considered to be a voluntary leave. In this situation, Canada's federal Employment Insurance (EI) program will provide *maternity benefits* for a woman who is within eight weeks of her expected due date (see the next page for information on how many hours you must have worked to be eligible).

This type of voluntary, health-related maternity leave to prepare for delivery is different from a sickness leave, which a health-care provider might advise for a pregnant woman who is experiencing complications that make her unable to continue working as long as she had expected.



Employment Insurance Benefits

In Canada, federal Employment Insurance (EI) provides temporary financial assistance to Canadians who are sick, pregnant or caring for a newborn or adopted child. In order to qualify for these maternity, parental or sickness benefits, you must have worked 600 hours within the past 52 weeks. For more detailed information on eligibility and benefits, visit www.servicescanada.gc.ca.

Maternity benefits: The EI program provides maternity benefits of up to 15 weeks to a mother for the birth of a child. These benefits can be collected any time during a period which begins eight weeks before your expected due date and ends 17 weeks after the birth. However, if

you stop work earlier than eight weeks before the due date, you would not receive EI maternity benefits until the eligibility period begins.

Parental benefits: In addition to the 15 weeks of maternity benefits, the EI program provides parental benefits to either parent for up to 35 weeks. These benefits can be claimed by either parent, concurrently or consecutively, as long as the total maternity and parental benefits add up to no more than 50 weeks for a pregnancy.

Sickness benefits: The EI program provides sickness benefits to individuals who are unable to work because of sickness.

Other information: Some employers may also supplement EI benefits so that parents receive up to 95 per cent of their salary while on maternity or parental leave. The province of Quebec is the only province that has a program to provide financial benefits to women with uncomplicated pregnancies whose work or work environment may pose a threat to them or their unborn children, if they cannot be temporarily reassigned by their employers to jobs that are not hazardous.

What if I have complications in pregnancy?

Pregnant women who experience complications or other illness-related problems during pregnancy may be deemed unable to continue working by their health-care professional. If this is the case for you, you may be eligible to receive *sickness benefits* from the EI program until your health problem resolves or until you qualify for *maternity benefits*.

However, a health-care provider cannot advocate for a sickness leave, which would qualify you for *sickness benefits* through the EI program, without justification. Issues such as discomfort, poor sleep, fatigue, and musculoskeletal pain are unfortunate but are a normal part of a healthy pregnancy.

How can my health-care provider help me make the right choices?

The role of obstetrical care providers in Canada is to promote and apply best practices in caring for pregnant women, in order to minimize risk and maximize positive outcomes for both mother and infant. Pregnant women often seek input from their caregivers on the topic of maternity leave, and to plan for stopping work before delivery.

Further resources

- Information about Canada's federal *Employment Insurance* program at www.servicescanada.gc.ca
- The *Motherisk* program of the Hospital for Sick Children in Toronto is a recognized leader for information about medications and hazardous substances in pregnancy and breastfeeding. You may talk to the team at Motherisk by calling the toll-free number 1-877-439-2744 or visiting www.motherisk.org.

Resources from the Society of Obstetricians and Gynaecologists of Canada

- The clinical practice guideline *Maternity Leave in Normal Pregnancy*, available at www.sogc.org.
- The book *Healthy Beginnings: Giving your baby the best start, from preconception to birth*, available at www.sogc.org/healthybeginnings

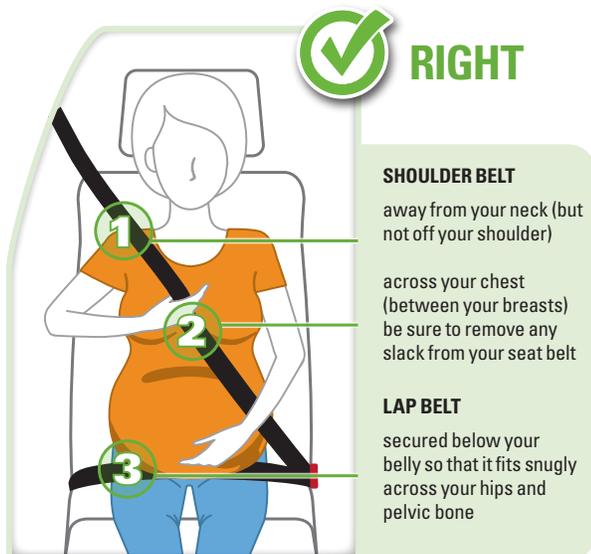
IF YOU'RE PREGNANT SEAT BELT RECOMMENDATIONS FOR DRIVERS AND PASSENGERS

I'M PREGNANT. SHOULD I WEAR A SEAT BELT?

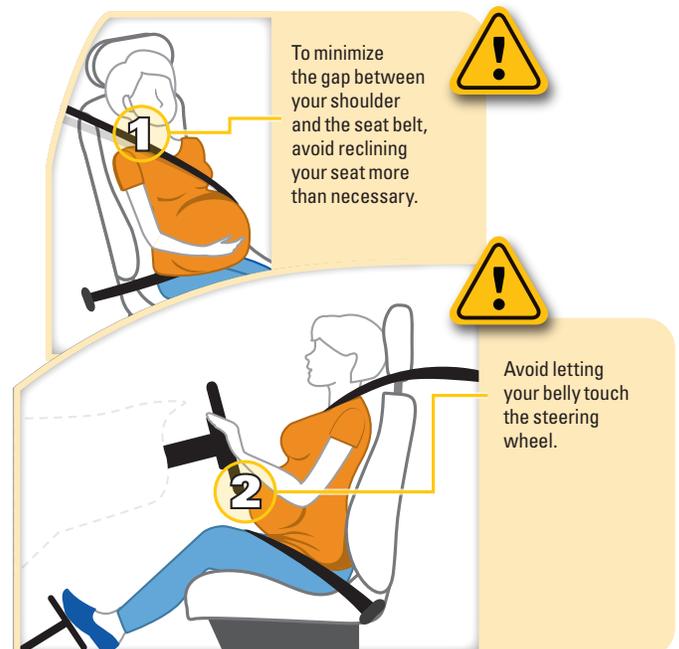
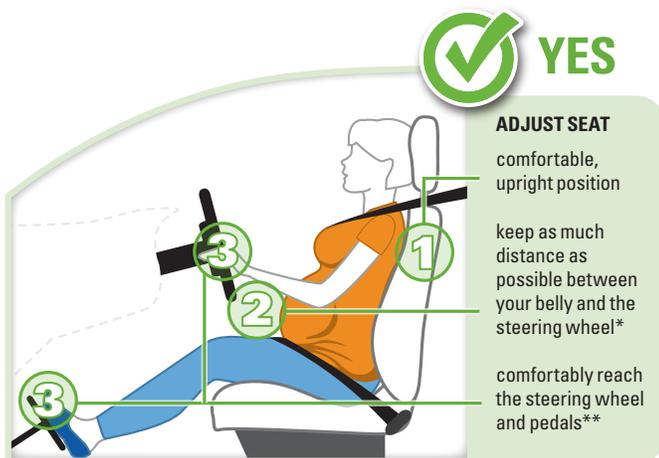
YES—doctors recommend it. Buckling up through all stages of your pregnancy is the **single most effective** action you can take to protect yourself and your unborn child in a crash.

NEVER
drive or ride in a car
without **buckling up** first!

WHAT'S THE RIGHT WAY TO WEAR MY SEAT BELT?



SHOULD I ADJUST MY SEAT?



* If you need additional room, consider adjusting the steering wheel or having someone else drive, if possible.

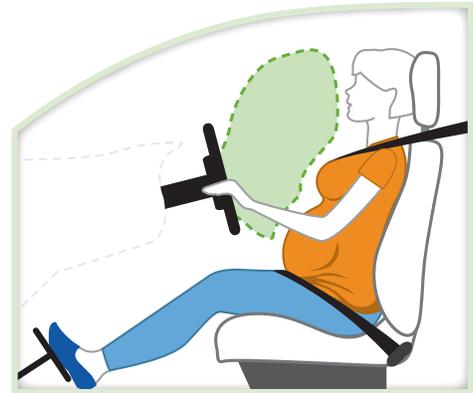
** If you're a passenger, move your seat back as far as possible.

WHAT IF MY CAR OR TRUCK HAS AIR BAGS?

You still need to wear your seat belt properly.

Air bags are designed to work with seat belts, not replace them.

Without a seat belt, you could crash into the vehicle interior, other passengers, or be ejected from the vehicle.



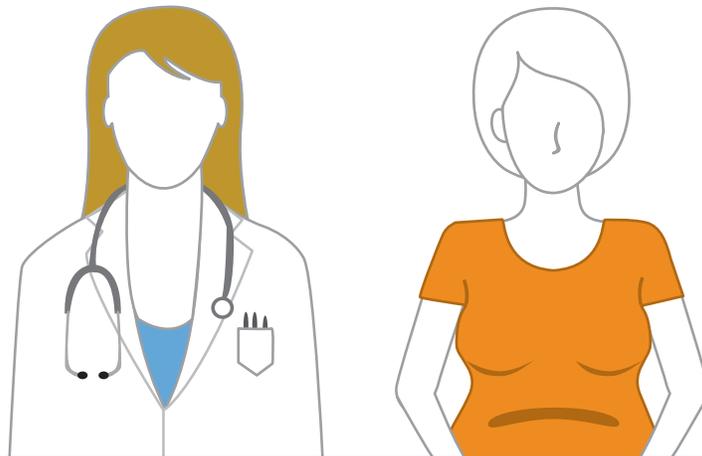
MY CAR HAS AN ON-OFF AIR BAG DISABLING SWITCH. SHOULD I TURN IT OFF?

NO. Doctors recommend that pregnant women wear seat belts and **leave air bags turned on.**

Seat belts and air bags work together to provide the **best protection for you and your unborn child.**

WHAT SHOULD I DO IF I AM INVOLVED IN A CRASH?

Seek immediate medical attention, even if you think you are not injured, regardless of whether you were the driver or a passenger.



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ALCOHOL AND PREGNANCY



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If you are pregnant or trying to conceive, you can discuss alcohol consumption with your health-care professional; this is a routine part of women's health care.

All women have to make lifestyle changes during pregnancy or when they are planning to become pregnant. Sometimes this may mean adapting an exercise routine, resting more or eating healthier foods. It may also mean changing your pattern of alcohol consumption. These types of changes, along with regular prenatal care, can help you have a healthy pregnancy — and a healthy baby.

Just one drink... is it okay?

We just don't know. There isn't enough evidence to know how much harm small amounts of alcohol during pregnancy may cause your baby. For this reason, abstinence is the safest choice if you are pregnant.

For the health of your baby, it's never too late to reduce the amount of alcohol you consume or to stop drinking.

How common is alcohol use in pregnancy?

The majority of Canadian women drink alcohol. Nearly 77 per cent of women over the age of 15 have had at least one drink of alcohol within the last year, and 33 per cent report drinking at least once a week. Though drinking can be problematic for some who experience alcohol abuse or dependence, this is a safe and enjoyable practice for many women.

However, the nature and potential severity of problems increase when alcohol is consumed during pregnancy. Between 10 and 15 per cent of women report drinking during pregnancy, and over 62 per cent of women report drinking alcohol during the three months prior to pregnancy.

Why does my doctor ask about alcohol consumption?

This is a routine part of women's health care. Universal screening for alcohol consumption is recommended for all pregnant women and women of child-bearing age. Your health-care professional is trained to ask these questions, and can provide guidance on whether your level of drinking puts you or your baby at risk of adverse effects.

How does alcohol affect my unborn baby?

When you are pregnant, anything you eat or drink can affect your baby. Alcohol that you consume quickly reaches your baby and can affect him or her for longer than it affects you. **Even from the very start of your pregnancy, alcohol can have serious and permanent consequences.**

Evidence shows that when a pregnant woman consumes alcohol at high-risk levels or binge drinks, her baby is at risk of developmental abnormalities. These effects of alcohol exposure while in the womb are called *fetal alcohol spectrum disorder* (FASD). FASD is estimated to affect one per cent of the Canadian population.

FASD is an umbrella term that refers to the range of harms that may be caused by prenatal exposure to alcohol:

- Fetal alcohol syndrome (FAS)
- Partial fetal alcohol syndrome (pFAS)
- Alcohol related neurodevelopmental disorder (ARND)

These conditions cause restricted growth, facial abnormalities and central nervous system dysfunction (permanent brain damage). Children, teens and adults with FASD may struggle with depression and anxiety, and experience difficulties with social interactions and relationships, as well as other aspects of their lives.



What is high-risk drinking? There is not enough evidence to define any safe threshold for alcohol consumption. If you drink, your baby is at risk.

What is binge drinking? Consumption of alcohol that brings your blood alcohol level to 0.08 per cent — for a woman of average weight, this usually means drinking four or more drinks in about two hours.



Alcohol content of drinks

Any type of alcohol can harm your baby – beer, coolers, wine or hard liquor. Some of these drinks have higher alcohol content per volume than others. What matters is the amount of alcohol you consume and how often you have it, rather than the type of drink. Binge drinking or drinking at high-risk levels can be particularly harmful for an unborn baby.

I didn't know I was pregnant... what should I do?

Many pregnancies are not planned; having a small amount of alcohol before you knew you were pregnant is unlikely to harm your baby.

Nevertheless, if you are trying to become pregnant or think you could become pregnant, you may need to consider changing your alcohol consumption patterns. It is particularly important to avoid binge drinking. Speak with your health-care professional about this.

Where to turn if you need support to change your habits

Alcohol abuse or dependency may make it more difficult for you to change your drinking habits if you become pregnant, even if you really want to make changes. Signs of alcohol abuse or dependency include a pattern of drinking which results in harm to your health, interpersonal relationships or ability to work or go about your daily life.

It's never too late to reduce the risks for your baby. If you are having difficulty controlling your drinking, speak with your health-care professional or call the free, anonymous Motherisk Alcohol and Substance Use Helpline at 1-877-327-4636.



Alcohol and breastfeeding

Alcohol freely distributes into milk and will be ingested by nursing infants. Low-level, occasional alcohol consumption is not likely to pose a problem to an infant, but heavy alcohol consumption or binge drinking should be avoided. Ideally, nursing should be withheld temporarily after alcohol consumption; at least two hours per drink to avoid unnecessary infant exposure. Side effects reported in infants include sedation and impairment of motor skills.

Further resources on alcohol in pregnancy

- The Society of Obstetricians and Gynaecologists of Canada's *Alcohol Use in Pregnancy Consensus Clinical Guideline*: www.sogc.org/guidelines
- The Society of Obstetricians and Gynaecologists of Canada's public education brochures available at www.sogc.org:
 - Medications and Drugs: Before and During Pregnancy
 - Medications and Drugs While Breastfeeding
- The **Motherisk** program of the Hospital for Sick Children in Toronto is a recognized leader for information about medications in pregnancy and breastfeeding. You may talk to the team at Motherisk by calling the toll-free number 1-877-439-2744 or visiting www.motherisk.org.

The consensus clinical practice guideline "Alcohol use and pregnancy" is endorsed by the Canadian Association of Midwives, the Canadian Association of Perinatal, Women's Health and Neonatal Nurses; the College of Family Physicians of Canada; the Society of Rural Physicians of Canada; Motherisk; the Federation of Medical Women of Canada; the Association of Obstetricians and Gynecologists of Quebec; and the Society of Obstetricians and Gynaecologists of Canada.



Section 3: Screens, Tests & Immunizations

Genetic Screen Decision Tool

AGE RELATED RISK OF ANOMALIES IN FETUS AT BIRTH			
Mother's Age	Chance of Trisomy 21 (Down Syndrome)	Chance of Trisomy 18	Chance of Neural Tube Defect
25	1 in 2,500	1 in 25,000	1 in 1,000 for all ages
30	1 in 840	1 in 8,400	
35	1 in 356	1 in 3,560	
38	1 in 166	1 in 1,066	
40	1 in 94	1 in 940	

A decision to make

Doing and not doing the test are both good choices. Making the decision might be easier if you:

- Base your decision on the best scientific information available
- Base your decision on your values and preferences
- Share your thoughts with your doctor/midwife and your family

Information to help you make the decision

What is Trisomy 21 (T21) or Down Syndrome?

People with T21 can have meaningful emotional relationships and lead lives that are fulfilling for themselves and their family and friends. They usually live into their 50's.

What is Trisomy 18 (T18)?

- It is caused by having an extra copy of chromosome 18.
- Many pregnancies with T18 will miscarry.
- Babies that are born with T18 rarely live more than a few days or months because of serious heart and brain defects and poor growth before and after birth.
- It is caused by an extra copy of chromosome 21 which affects how the baby develops and grows.
- People with T21 have almond-shaped eyes, a round face, poor muscle tone, greater risk of vision and hearing problems, heart, stomach and bowel defects, and intellectual disabilities that can be mild or moderate.
- 60% of children with T21 need specialized home care. Some adults with T21 have jobs and are almost completely independent.

What is a Neural Tube Defect?

- An open neural tube defect (NTD) occurs when the brain or spinal cord does not form properly.
- Spina bifida is a NTD in which the spine does not completely close. People with spina bifida may have both physical and mental disabilities.
- Anencephaly is an open NTD involving the brain. A baby with an encephaly will be stillborn or die shortly after birth.

What are the screening and testing options for?

These screens and tests tell you if you have a higher chance of carrying a fetus with T21, T18, or a NTD. This information can help you decide whether to prepare for a child with special needs or consider ending the pregnancy.

What is the Enhanced First Trimester Screen (EFTS)?

The Enhanced First Trimester Screening Test (EFTS) is an option that consists of one blood test and a special ultrasound of the neck folds of the fetus, both taken around 11 weeks. The results are available within a few days. If the chance is high for either T21 or T18, your doctor / midwife will offer you NIPT (covered by OHIP).

What is the Non-Invasive Prenatal Screen (NIPS)?

A Non-Invasive Prenatal Test (NIPS) is a single blood test taken anytime after 10 weeks. The result is available in 10 days and is highly accurate for T21 and T18. Women 40 years + /Positive EFTS/ Abnormal ultrasound findings are covered by OHIP ✓ Neither EFTS nor NIPS screen for a neural tube defect.

What is the test for NTD?

Alfa Fetoprotein (AFP) is a blood sample that will be offered for additional risk factors for NTD, such as elevated BMI. If you chose EFTS or NIPS tests, screening for neural tube defect will be done by your detailed ultrasound at 19 – 20 weeks gestation.

EFTS and NIPS are all screening tests that will tell you your chance of carrying a fetus with T21 or T18. Only an amniocentesis test can tell you for sure.

If you are 40 years or older on the due date, you can choose to have an amniocentesis without having the EFTS test.

What private pay screening options might be available?

Women who choose NIPS without the EFTS test must cover the cost, which is in the order of \$500–\$650 depending on the commercial test used.

An amniocentesis is a diagnostic test that checks the chromosomes of fetuses that are at higher risk of an abnormality. A small sample of the liquid around the fetus is taken using a needle inserted through the mother's abdomen while watching with an ultrasound. This procedure is associated with a risk of 1 in 200 of losing the pregnancy.

Doing or not doing the EFTS/ IPS Test (follow along with the visual aid diagram)

DOING the test	
Benefits	Risks
<p><input type="checkbox"/> Know your chances of carrying a fetus with T21 Out of 5,000 people screened, 275 have a test result that says they are at higher risk for carrying a fetus with T21. If these 275 people have NIPS or an amniocentesis to know for sure, only 13 would actually be carrying a fetus with T21.</p> <p><input type="checkbox"/> Prepare to end the pregnancy Some who know they are carrying a fetus with T21 will choose to end the pregnancy.</p> <p><input type="checkbox"/> Prepare for a child with T21 Some who know they are carrying a fetus with T21 will choose to continue the pregnancy and can prepare for a child with T21 or may consider an adoption plan.</p> <p><input type="checkbox"/> Reassurance Out of 5,000 people who take the test, 4,725 have a result that means they are at low risk for carrying a fetus with T21. These people are reassured.</p>	<p><input type="checkbox"/> Anxiety while waiting for results People waiting for test results have anxiety levels 10 times higher than normal.</p> <p><input type="checkbox"/> False Alarm Out of 275 whose test results show they are at increased risk of carrying a fetus with T21, 262 are actually NOT carrying a fetus with T21. Many of these will experience anxiety.</p> <p><input type="checkbox"/> May have to face difficult decisions 275 people whose test results show they are at increased risk of carrying a fetus with T21 will need to decide about having further testing (NIPS or amniocentesis). Those who have testing and are shown to actually have a fetus with T21 will need to make a decision about whether to continue or end the pregnancy.</p> <p><input type="checkbox"/> False Reassurance Of the 4,725 people whose test results show they are at low risk for carrying a fetus with T21, 2 will actually be carrying a fetus with T21. These 2 are falsely reassured.</p>

NOT DOING the test	
Benefits	Risks
<p><input type="checkbox"/> Avoid anxiety and unnecessary extra testing</p> <p><input type="checkbox"/> Stay true to your personal convictions and values For some, not doing the test is the right choice for their personal or family's convictions.</p> <p><input type="checkbox"/> Avoid difficult decisions Not doing the test can avoid the anxiety and stress of making a decision about continuing or ending the pregnancy if the fetus has T21.</p>	<p><input type="checkbox"/> Not knowing your risk of carrying a fetus with T21 Out of 5,000 people who do not take the test, 15 are carrying a fetus with T21. These people cannot prepare for giving birth to a baby with T21.</p> <p><input type="checkbox"/> Anxiety from not knowing People who don't take the test may be anxious because they don't know if their child will have T21 or not.</p> <p><input type="checkbox"/> Possible social pressure to do the test</p>

Discussion with Your Care Provider

What is your chance of having a baby born with T21, T18 and Neural Tube Defect based on your age? Refer to the table from the beginning to know your risks.

Check your understanding of:

- ✓ What are the tests for
- ✓ How and when you get results
- ✓ Options for further testing if your screen result shows a high risk
- ✓ Private pay options
- ✓ Benefits and harms of the tests

What is your decision?

Do the test

Don't do the test

I don't know

Are you comfortable with this decision?

Sure of myself 1) Do you feel sure about the best choice for you? Yes No

Understand information 2) Do you know the benefits and harms of doing or not doing the test? Yes No

Risks and Benefits 3) Are you clear about which benefits and harms matter most to you? Yes No

Encouragement 4) Do you have enough support and advice to make a choice? Yes No

©SURE test; O'Connor & Légaré 2008

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Section 3 Breast Cancer Awareness

Worldwide Breast Cancer – Know your lemons

Link to:

<https://www.worldwidebreastcancer.org/>

for more information

YOU CAN QUIT.

WE CAN HELP.

“ I just celebrated **four years smoke-free**. If you are thinking about quitting, **Smokers' Helpline** is the way to go. It will be one of the best choices you will make for yourself. Thank you, **Smokers' Helpline**, for supporting me - and all of us! ”

~Lisa

PHONE*: 1-877-513-5333

Each person who calls is treated with warmth and respect. Once you connect with a Quit Coach they will...

- Assist you in creating a personalized quit plan
- Help you cope with cravings and withdrawal symptoms
- Provide information on resources in your community

*Ask for an interpreter in one of more than 100 languages so you can speak in the language you are most comfortable.

ONLINE: SmokersHelpline.ca

The online community is filled with people just like you and is open 24 hours a day, 7 days a week. Once you register you can...

- Share your experiences and chat with other people in the online forums
- Work through helpful exercises tied to the milestones of your quit journey
- Draw inspiration from the successes of other quitters

TEXT*: To register text 'iQuit' to the number 123456

As soon as you sign up you can expect...

- To receive support on the go with text messages based on your quit date
- A set of keywords that you can text us when you need extra inspiration

*Available to Ontario residents only.
Text messaging rates from your provider may apply

FREE RESOURCES

Every quit attempt is an opportunity to learn. Don't quit quitting, stay in touch so you don't miss out on...

- Free self-help booklets
- Contests you can enter to quit & win prizes
- Knowing where and how you can access nicotine replacement therapy (e.g. gum or patch)

It is never
too late to
QUIT!



CALL US 7 DAYS A WEEK

Monday to Thursday: 8 a.m. - 9 p.m. ET (7 a.m. - 8 p.m. CT)

Friday: 8 a.m. - 6 p.m. ET (7 a.m. - 5 p.m. CT)

Weekends: 9 a.m. - 5 p.m. ET (8 a.m. - 4 p.m. CT)

Section 3 HIV Testing

Testing for HIV during pregnancy

Link to:

https://www.caringforkids.cps.ca/handouts/testing_for_hiv_during_pregnancy

for more information

Vaginal Yeast Infections

What is a vaginal yeast infection?

Yeast is a fungus that normally lives in the vagina in small numbers. A vaginal yeast infection means that too many yeast cells are growing in the vagina. These infections are very common. Although they can bother you a lot, they are not usually serious. And treatment is simple.

What causes a vaginal yeast infection?

Most yeast infections are caused by a type of yeast called *Candida albicans*. A healthy vagina has many bacteria and a small number of yeast cells. The most common bacteria, *Lactobacillus acidophilus*, help keep other organisms-like the yeast-under control. When something happens to change the balance of these organisms, yeast can grow too much and cause symptoms. Taking antibiotics sometimes causes this imbalance. The high estrogen levels caused by pregnancy or hormone replacement therapy, stress or certain health problems, like diabetes or HIV infection can also cause it.

What are the symptoms?

A yeast infection causes itching, swelling or soreness in the vagina and sometimes causes pain or burning when you urinate or have sex. Some women also have a thick, clumpy, white discharge that has no odor and looks a little like cottage cheese.

How is a vaginal yeast infection diagnosed?

It's easy to guess wrong about a vaginal infection. Call your midwife if you aren't sure what you have or if this is the first time you have had these symptoms. A vaginal swab sent to the lab will confirm the infection.

How is it treated?

If you can recognize the symptoms, you can treat yourself at home with medicines you can buy without a prescription. You can use an antifungal cream, or a suppository that you put into your vagina at night. A 7 days treatment is the preferred length of treatment.

If your symptoms are mild, you may want to wait to see if they clear up on their own. Reduce sugar in your diet, and you may want to take *Lactobacillus acidophilus* capsules orally. Some women have had success taking it vaginally for a week.

Can vaginal yeast infections be prevented?

If you practice good genital hygiene, you can help prevent infection.

- Keep your vaginal area clean. Use mild, unscented soap and water. Rinse well.
- After using the toilet, wipe from front to back to avoid spreading yeast or bacteria from your anus to the vagina or urinary tract.
- Wear underwear that helps keep your genital area dry and doesn't hold in warmth and moisture. One good choice is cotton underwear.
- Avoid tight-fitting clothing, such as panty hose, and tight-fitting jeans. These may increase body heat and moisture in your genital area.

Can vaginal yeast infections be prevented, continued

- Change out of a wet swimsuit right away. Wearing a wet swimsuit for many hours may keep your genital area warm and moist.
- Change pads often.
- Don't douche or use feminine sprays, powders, or perfumes. These items can change the normal balance of organisms in your vagina.
- Transmission of yeast infection to your sexual partner is rare but can happen. Consider refraining from intercourse during the length of yeast infection. If your partner starts experiencing symptoms make sure to treat both of you at the same time.
- If you are close to your due date you will want to clear up any infections as soon as possible as yeast can be passed on to the baby at the time of birth.

Adapted from: Webmed. <http://women.webmd.com/tc/vaginal-yeast-infections-what-increases-your-risk>, May 2013

Parvovirus B19 (Fifth's Disease)

Parvovirus B19 infection is also called Parvo or Fifth's Disease or Slapped cheek/slapped face Measles. Parvovirus is a common infection in children, especially 4 to 11 year olds. The infection is passed by saliva/hand-mouth contact, blood products from an infected person and rarely through the placenta to baby.

Children sick with Parvovirus often get fever, rash, and flu-like symptoms. Adults can also get Parvovirus, but it is much less likely that they will feel sick. People who have young children at home, or who work with young children on a daily basis, are more likely to be exposed to the virus. Most Parvovirus infections in pregnancy are from household contact, not workplace. Luckily 50-75% of adults have already had Parvovirus and cannot get the infection again (are immune). There are no cures or medications for Parvovirus infections.

To protect yourself from most infections, including Parvovirus, don't share food/drinks and wash your hands often.

What are the symptoms?

Most adults who are infected with Parvovirus have no symptoms; some have only mild symptoms that get better on their own.

10 days after being exposed: common symptoms include fever, joint or muscle aches, headache, and flu-like symptoms (cough, sore throat, nausea and vomiting). Children, 1-4 days later (day 11-14), often get a rash on the face that looks like "slapped cheeks." By the time symptoms are obvious or the rash is there, the person is usually no longer infectious.

Parvovirus is most contagious from day 4 to day 14 post exposure. Most people don't know they have it during this time.

What are the concerns for my baby?

If you get Parvovirus infection during pregnancy, most babies are not harmed. Rarely, Parvovirus infection can damage your baby's red blood cells and/or cause miscarriage especially before 20 weeks of pregnancy.

What do I do if I think I have been exposed?

As soon as possible, call your Midwife at the clinic. Exposure to Parvovirus is not an emergency. Your midwife will review your bloodwork and may order more bloodwork and an ultrasound looking for signs of Parvovirus infection.

Your blood work may show:

1. That you are immune, and you and your baby are not at risk. No further follow up is needed.
2. That you are not immune, but also not infected. In this case, you should avoid contact with infected people, and your midwife will offer to repeat the test in 2-4 weeks to double check you were not infected.
3. That you were infected with Parvovirus. This is the least likely result of the test. Your midwife will arrange for you to see an obstetrician/specialist, order an ultrasound and repeat bloodwork.

There is no current evidence that you need to leave your workplace if there is a case of Parvovirus detected to reduce your risk of infection. Your midwife will review with you your individual risks and workplace safety.

Reference: Crane J., Mundle W., Boucoiran I., SOGC Clinical Practice Guideline No. 316 Parvovirus B19 Infection in Pregnancy. December 2014.

IS IT A COLD OR THE FLU?

SYMPTOM	COLD	FLU (INFLUENZA)
Fever	Rare	Usual, high fever (102°F/39°C to 104°F/40°C); sudden onset, lasts 3-4 days
Headache	Rare	Usual, can be severe
General aches and pains	Sometimes, mild	Usual, often severe
Tired and weak	Sometimes, mild	Usual, may last 2-3 weeks or more
Extreme fatigue	Unusual	Usual, early onset
Runny, stuffy nose	Common	Common
Sneezing	Common	Sometimes
Sore throat	Common	Common
Chest discomfort, coughing	Sometimes, mild to moderate	Usual, can be severe
Complications	Can lead to sinus congestion or earache	Can lead to pneumonia and respiratory failure; can worsen a current chronic respiratory condition; can be life-threatening

See a health care provider right away if you develop the following symptoms

- + Shortness of breath, rapid breathing or difficulty breathing
- + Chest pain
- + Bluish or grey skin colour
- + Bloody or coloured mucus/spit
- + Sudden dizziness or confusion
- + Severe or persistent vomiting
- + High fever lasting more than three days
- + Low blood pressure

Additional symptoms to watch for in children

- + Not drinking enough fluids or eating
- + Not waking up or interacting
- + Irritability; not wanting to play or be held

TO LEARN MORE AND TO FIND OUT WHERE TO GET YOUR FLU VACCINE, VISIT CANADA.CA/FLU



Public Health
Agency of Canada

Agence de la santé
publique du Canada



Immunize
Immunitisation *Canada*

KNOW THE FLU FACTS

THE FLU CAN BE A SERIOUS DISEASE.

- + The flu is very contagious and can spread **quickly** and **easily**.
- + Before you even know you are sick, you can **pass the flu on to others**.
- + The **flu can affect anyone**, including those who are healthy, but people at **higher risk of serious complications** are:
 - > *young children,*
 - > *adults aged 65 and over,*
 - > *pregnant women, and*
 - > *those living with a chronic health condition.*
- + In Canada, an average of **12,200 hospitalizations and 3,500 deaths** related to the flu occur each year*.

YOU NEED TO GET VACCINATED EVERY YEAR.

- + **Flu viruses** change each year. Experts create a **new vaccine** to protect you **each flu season**.

YOU CAN'T GET THE FLU FROM THE FLU VACCINE.

- + The viruses in the **flu vaccine** are either killed or weakened and **cannot give you the flu**.

THE FLU VACCINE IS SAFE.

- + **The flu vaccine** has **benefited millions** of Canadians since 1946.
- + Most people don't have reactions to the **flu vaccine**; those who do may have soreness, redness or swelling at the injection site.
- + **Severe reactions** to the vaccine are **extremely rare**.

EVERYBODY WINS WHEN YOU GET VACCINATED.

- + By getting the **flu vaccine**, you **protect yourself and others** because you are less likely to spread the flu.
- + It's a **simple action** that can **save lives**.

* An Advisory Committee Statement (ACS) National Advisory Committee on Immunization (NACI), Canadian Immunization Guide Chapter on Influenza and Statement on Seasonal Influenza Vaccine for 2016–2017

TO LEARN MORE AND TO FIND OUT WHERE TO GET YOUR FLU VACCINE, VISIT **CANADA.CA/FLU**



Q & A on Tdap Vaccination Against Pertussis (Whooping Cough) During Pregnancy in Canada

Protecting Every Mother and Every Baby

The Canadian National Advisory Committee on Immunization (NACI)* and The Society of Obstetricians and Gynaecologists of Canada (SOGC) now recommend immunization with the Tdap vaccine (Tetanus Toxoid, Reduced Diphtheria Toxoid and Reduced Acellular Pertussis) in every pregnancy, irrespective of previous immunization history. The SOGC recommends immunization to be provided ideally between 21 and 32 weeks of gestational age, but evidence supports vaccination as early as 13 weeks, up to the time of delivery, in certain circumstances (i.e. risk of preterm birth).

This document answers frequently asked questions health care providers may have when offering or administering the Tdap vaccine to pregnant women.

1 | What is pertussis?

Pertussis, aka whooping cough, is a transmissible respiratory infection caused by the *Bordetella pertussis* bacterium. Infants who have not started or completed their routine immunizations are at the greatest risk for severe disease and death.

2 | Is pertussis an issue in Canada nowadays?

After the acellular pertussis vaccine was introduced in Canada in 1997/1998, there was a steady decline in the number of pertussis cases until 2011. However, between 2012 and 2015 numerous outbreaks occurred across Canada. Seventy-percent of admissions to hospital for pertussis occurred in infants younger than four months of age, and almost all deaths from pertussis (14 out of 15 between 2006 and 2015) happened among infants younger than two months of age, before the infants received their first vaccines.

3 | Why should the Tdap vaccine be offered to pregnant women?

Tdap vaccination in pregnancy provides protection to infants until they are able to receive the pertussis vaccine (DTaP) at two months of age. Studies have shown that nine out of 10 infants under three months of age are protected following maternal vaccination against pertussis during pregnancy.

4 | Is the Tdap vaccine safe during pregnancy?

The vaccine is safe for the mother and the fetus. The most common side effects after receiving a pertussis-containing vaccine are injection site reactions (redness, swelling or pain). Other less common symptoms may include fever, chills and headache.

*The National Advisory Committee on Immunization (NACI) is a national advisory committee of experts in the fields of pediatrics, infectious diseases, immunology, medical microbiology, internal medicine and public health.

5 | Who should be vaccinated?

All pregnant women should receive the Tdap vaccine in every pregnancy, irrespective of prior immunization history.

6 | When should pregnant women receive the Tdap vaccine?

The Tdap vaccine may be offered at any prenatal appointment, and the SOGC recommends immunization should be provided ideally between 21 and 32 weeks of gestational age. NACI recommends vaccination may be provided from 13 weeks up until delivery, but should ideally be provided between 27 and 32 weeks of gestational age because it strikes the best balance between safety and effectiveness data and optimal antibody transfer for babies born after 37 weeks.

However, limiting vaccination to 27-32 weeks can leave babies who are born prematurely (before 37 weeks) unprotected, because there is not enough time for the vaccine to work.

The SOGC therefore recommends vaccination starting at 21 weeks (after the routine anatomical ultrasound) to protect those patients who may deliver prematurely; this timing will also prevent any unrelated adverse events identified in the fetal scan to be misattributed or temporally associated if the vaccine is given earlier.

7 | Can the Tdap vaccine be given after 32 weeks of gestational age?

The vaccine should still be offered after 32 weeks of gestational age, and until delivery, since it will prevent the mother from becoming a source of infection to the infant. However, the antibody levels may not be sufficient to protect the infant; it takes at least four weeks after vaccination to reach peak anti-pertussis antibody levels.

8 | Can the Tdap vaccine be given in the first trimester or earlier in the second trimester?

Data supports vaccination as early as 13 weeks and some data indicates that earlier vaccination results in higher antibody binding, but safety data is limited for earlier in the second trimester, and even more limited for vaccination before 13 weeks. If the Tdap vaccine was provided early in pregnancy (e.g. prior to recognition of pregnancy), it is not necessary to re-immunize after 13 weeks of gestation.

9 | Should the Tdap vaccine be offered after delivery to those women who did not receive the vaccine during pregnancy?

Yes. Since newborns are not immunized until after two months of age, it is vital that these women are protected to avoid becoming a source of infection to their infants. However, vaccination during pregnancy is the preferred strategy to protect the infant.

10 | Can the Tdap vaccine be given to breastfeeding patients?

Yes. The vaccine can be given to women who are breastfeeding and some protection can be passed to the infant this way. However, waiting to get the vaccine until after baby is born is not ideal because it takes four weeks after vaccination to reach peak anti-pertussis antibody levels. If the vaccine is given during pregnancy, nursing mothers will have protective antibodies in their breast milk that can be passed on to the infant as soon as the mother's milk comes in.

11 | Who should NOT receive the vaccine?

The vaccine should not be administered to anyone with a history of anaphylactic reaction to a previous dose of pertussis-containing vaccine or to any of its components.

12 | Should the Tdap vaccine be offered to a pregnant woman with confirmed or suspected pertussis infection?

Yes, because not every infected pregnant woman will produce sufficient antibody levels to protect the unborn infant after a natural infection, and vaccination will boost the immune system of the pregnant woman, thus, protecting the unborn infant against pertussis.

13 | Can the flu shot and the Tdap vaccine be given together?

Yes. Since both vaccines are made of inactivated agents, they can be administered either at the same time or in different visits, and no minimum time interval is needed between administering either of these vaccines.

14 | Can the vaccine be administered at the same time as anti-D (Rhogam) treatment?

Yes. Since it is an inactivated vaccine, there is no risk of an interaction with anti-D treatment.

15 | Will the Tdap vaccination during pregnancy interfere with the baby's normal response to his or her own routine vaccinations?

In infants who continue their vaccine series, there is no difference in antibody levels after their fourth DTaP dose (at approximately 15 months of age), despite earlier lower antibody levels. The clinical impact of these laboratory findings is unknown, but it is clear that the burden of severe pertussis disease, hospitalization and death disproportionately affects newborns younger than two months of age more than older children.

Visual aid to the effectiveness and safety evidence for this recommendation

Tdap Vaccination Against Pertussis (Whooping Cough) During Pregnancy in Canada

The Canadian National Advisory Committee on Immunization (NACI) and The Society of Obstetricians and Gynaecologists of Canada (SOGC) now recommend immunization with the Tdap vaccine (Tetanus Toxoid, Reduced Diphtheria Toxoid and Reduced Acellular Pertussis) in every pregnancy, irrespective of previous immunization history because it works to protect babies from pertussis before they can get their vaccine and it is safe for the mother and the baby.

Is Tdap vaccination safe for the infant?

	Pregnancy period			Number of women*	Quality of studies
	1st Trimester	2nd Trimester	3rd Trimester		
<p>Yes. Vaccination between 19-35 weeks is supported by good quality studies, in which 33 to 90 women were vaccinated.</p>				 33-90	
<p>Yes. Vaccination throughout pregnancy is supported by moderate quality studies, in which 130 to 149,000 women were vaccinated.</p>				 130-149,000	

* Number of women denotes only the number of participants (pregnant women) who received maternal pertussis immunization in studies, rather than total sample size

Note: Although some studies appear to span all gestational weeks, the data were not stratified by gestational week /trimester for these studies, and it is not clear how many subjects received vaccination at each time point.

Disclaimer: This infographic is not a validated clinical decision tool.

Is Tdap vaccination safe for the pregnant woman?

	Pregnancy period			Number of women*	Quality of studies
	1st Trimester	2nd Trimester	3rd Trimester		
Yes. Vaccination between 19-35 weeks is supported by good quality studies, in which 33 to 90 women were vaccinated.		19-35 Weeks		 33-90	★★★★★
Yes. Vaccination throughout pregnancy is supported by moderate quality studies, in which 130 to 149,000 women were vaccinated.	1-42 Weeks			          130-149,000	★★★★☆

Does Tdap vaccination in pregnancy work to prevent pertussis infection, hospitalization and death in the young infant?

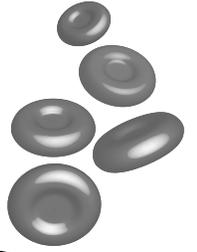
	Pregnancy period			Number of women*	Quality of studies
	1st Trimester	2nd Trimester	3rd Trimester		
Yes. Vaccination between 27-36 weeks is supported by moderate to high quality studies, in which 49 to 149,000 women were vaccinated.			27-36 Weeks	          49-149,000	★★★★☆
Yes. Vaccination between 28-38 weeks is supported by moderate quality studies, in which 46 to 49 women were vaccinated.			28-38 Weeks	 46-49	★★★☆☆

* Number of women denotes only the number of participants (pregnant women) who received maternal pertussis immunization in studies, rather than total sample size

Note: Although some studies appear to span all gestational weeks, the data were not stratified by gestational week /trimester for these studies, and it is not clear how many subjects received vaccination at each time point.

Disclaimer: This infographic is not a validated clinical decision tool.

Iron deficiency anemia and you



What is iron deficiency anemia?

Iron plays many important roles in your health. You need iron to make hemoglobin, a part of red blood cells that carries oxygen throughout the body. When you have iron deficiency anemia, you don't have enough iron to make hemoglobin, so your body starts to make smaller and fewer red blood cells. Less hemoglobin and fewer red blood cells also means your cells can't get the oxygen they need.

Normal changes to blood volume in pregnancy

Pregnancy causes many changes in the body. One of the changes that happens in pregnancy is that the amount of blood in your body almost doubles. Blood is made up of red blood cells, white blood cells and fluid called plasma. The number of red blood cells doesn't increase as much as the plasma. This process is called "hemodilution" because the blood cells get diluted when the plasma increases. Hemodilution is a healthy response to pregnancy and a common cause of anemia. If your iron is low at the start of your pregnancy, this normal process of hemodilution can lead to anemia.

HEMOGLOBIN is a part of red blood cells. Hemoglobin carries oxygen throughout the body.

IRON is something your body needs in order to make hemoglobin. Iron is an essential nutrient, which means you have to get iron from your diet because your body can't make it.

HEME IRON (also called organic iron) is found in meat. The body easily absorbs this type of iron.

NON-HEME IRON (also called inorganic iron) is mainly found in leafy greens, but is also found in meat, poultry and fish. This type of iron is less easily absorbed by the body.

FERRITIN is a protein that stores iron in your body. Your body can use the "backup" iron that is stored in ferritin when it doesn't get enough iron from the food you eat.

What are signs and symptoms of anemia?

Some of the symptoms of anemia are common for anyone who is pregnant or who has just given birth (like feeling more out of breath or more tired than normal), so it can be hard to tell if you have anemia. It's a good idea to talk to your midwife if you are:

- feeling weak and/or getting tired more easily
- feeling dizzy or faint
- feeling especially grumpy or cranky
- having headaches
- having trouble focusing or concentrating

For someone who is anemic, exercising can also leave you feeling like your heart is beating faster than normal (palpitations). You may also notice that you look pale for your skin tone.

This document provides client-friendly information designed to help you better understand some of the considerations and choices you may face while receiving care from your midwife. It is not intended to replace the informed choice discussions that you and your midwife will have. If you have any questions, concerns or ideas after reading over this document, please share them with your midwife.

How do I know if I'm anemic?

Having a blood test is the only way to know for sure if you have anemia. Your midwife will offer you a blood test to check your hemoglobin levels in early pregnancy and again around 32 weeks of pregnancy. You may be offered another blood test after your baby is born. Your midwife may also offer testing more frequently in pregnancy if there are concerns you might be anemic.



What might increase my risk of having anemia?

Certain things can make it more likely that you become anemic.

- A vegetarian or vegan diet may put you at higher risk for anemia because the iron found in vegetarian food sources is non-heme iron and is harder for the body to absorb.
- Vitamin D deficiency may also increase the risk of anemia since vitamin D plays an important role in iron absorption. Your body produces vitamin D when your bare skin is exposed to sunlight. Anyone who keeps their skin mostly covered may be at higher risk of vitamin D deficiency. Because of our long winters, this can include most people who live in Canada!
- A multiple pregnancy (twins or triplets) may put you at higher risk for anemia because the demands for iron are even higher than during a pregnancy with one baby.
- It can take up to 18 months for the body to fully recover from a pregnancy, so two (or more) pregnancies less than a year apart can make it hard to maintain good iron stores.
- People who have very heavy menstrual periods often have low iron because they lose a lot of blood every month. If you had heavy periods before becoming pregnant, you may be at higher risk of becoming anemic during pregnancy.
- If you are anemic during pregnancy you are also more likely to be anemic postpartum.
- If you have a postpartum hemorrhage (losing too much blood after birth), you may be at higher risk for becoming anemic. For more information about postpartum hemorrhage, please see:
 - » *Life after postpartum hemorrhage: recovering from the unexpected* (print document)
 - » *Not what we planned: two stories of birth and postpartum hemorrhage* (video)

Available at: ontariomidwives.ca/care/client-resources

Why treat anemia?

It's important to treat anemia so that you feel better as quickly as possible and to maintain your overall health. It is also important to ensure that your iron levels are healthy if you are planning a future pregnancy.

Treating anemia is important for both you and your baby. If your iron levels are very low in early pregnancy, there is a slightly higher chance that your baby will be born early or could be born smaller than expected (also called, "small for gestational age").

It is also important to treat anemia before you give birth. It is normal to lose some blood during labour and birth, but low hemoglobin at the start of labour can put you at risk of worsened anemia after the baby is born. Depending on how severe your anemia is at the end of your pregnancy, your midwife may have recommendations about where you plan to give birth.

How is anemia treated?

If you are diagnosed with anemia your midwife will discuss your options for treatment. Iron pills or liquid preparations (oral iron supplements) are usually the first choice to treat anemia during and after pregnancy.

There are lots of different iron supplements available in Canada. Iron is often included in multivitamin and mineral supplements, including prenatal vitamins. Elemental iron is the form of iron that your body absorbs easily. Different formulations of iron supplements contain different amounts of elemental iron. The amount of elemental iron a supplement contains is usually listed on the package. It is recommended that people who are diagnosed with iron deficiency anemia take supplements that provide about 50-100 mg of elemental iron each day.

There isn't strong evidence showing that one brand of iron is more effective or causes less side-effects than any other. It can be confusing to choose which iron supplement to buy, especially since prices vary. See the chart below for more information and ask your midwife or pharmacist if you have more questions about choosing an iron supplement.

Common iron formulations	Examples of brands:	Price range for a month of treatment (at 100 mg of elemental iron each day)**	Information
Ferrous salts <i>ferrous gluconate</i> <i>ferrous sulfate</i> <i>ferrous fumarate</i>	<ul style="list-style-type: none"> • Life • Euro-fer • Ferodan • Nutrichem • Palafer 	Most brands available for \$5-\$20/month Some brands can cost as much as \$240 to \$700	The higher concentration of the elemental iron in these formulations means you may be able to take a lower dose to get the iron you need. But because the concentration of elemental iron is higher, these formulations can sometimes cause more stomach upset than other formulations.
Ferric salts <i>ferric pyrophosphate</i>	<ul style="list-style-type: none"> • IRONsmart • Ortho Iron • Nu-Life • Hemoplex 	\$12 to \$140/month	These formulations have less elemental iron. This means you may need to take a larger dose to get the iron you need.
Chelated iron/iron bisglycinate	<ul style="list-style-type: none"> • Sisu Gentle Iron • Life Mild Iron 	\$16 to \$90/month	These supplements may have fewer side-effects. But you may need a higher dose.
Carbonyl iron	<ul style="list-style-type: none"> • Ferro-C 	\$30 to \$40/month	
Polysaccharide-iron complex	<ul style="list-style-type: none"> • FeraMax 	\$20 to \$45/month	
Heme iron food-based supplements	<ul style="list-style-type: none"> • Proferrin 	\$150 to \$200/month	These supplements provide iron that's similar to the iron you get from food sources.
Non-heme food-based supplements	<ul style="list-style-type: none"> • Mega Food Blood Builder 	\$45 to \$60/month	

*Talk to your midwife about the iron dose that is right for you.

†Approximate. Based on in-store prices in 2015



Access to iron supplements

Some health-care plans and Ontario Works will pay for over-the-counter medications (like iron) if a health-care provider writes a prescription. Check with your health plan or your Ontario Works caseworker to see if your iron supplements will be free or cost less with a prescription from your midwife.

Dos and don'ts for taking iron

Iron is best absorbed on an empty stomach. Sometimes iron supplements can give you a stomach ache, make you constipated or give you diarrhea. If you are having unpleasant side-effects from taking iron, you can try taking iron right after meals instead of on an empty stomach, or try taking it before you go to bed. You can also talk to your midwife about starting at a lower dose and gradually increasing the dose. Slow-release (enteric-coated) forms of iron are usually not recommended because they aren't absorbed as well by the body. It is normal to notice dark coloured bowel movements when you are taking oral iron.

When taking iron: some DOs and DON'Ts

DO take your iron with vitamin C (citrus fruits like oranges, strawberries, tomatoes, or a 500-mg vitamin C tablet). Your body needs vitamin C in order to absorb iron.

DO keep taking iron supplements for at least three months even if you start to feel better, unless your midwife gives you different instructions. Your symptoms might improve quickly, but taking iron for the full three months ensures that you replenish your iron stores (ferritin).

DO talk to your midwife if the side-effects of iron are bothering you.

DO make sure that iron supplements are kept out of the reach of children. Iron can be toxic.

DON'T drink coffee or black teas at the same time you take iron. Tannins in coffee and tea stop your body from absorbing iron. Wait at least one hour after taking iron to have tea or coffee.

DON'T take your iron along with calcium. Avoid eating dairy (milk, yogurt, cheese), or taking calcium pills, or antacids (like Tums) within about an hour of taking iron supplements. Try to avoid combining iron-rich foods with foods rich in calcium (like dairy products). Calcium gets in the way of your body's ability to absorb iron.

Follow-up testing

If your midwife recommends iron supplements, you may be offered another blood test (usually about two weeks after you begin taking the supplements) to make sure they are working. Another blood test may be offered by your care provider after you have been taking supplements for about three months to confirm that your iron levels (both your hemoglobin and your ferritin stores) are back to normal so you can stop taking supplements.

Boosting the iron in your diet

If your midwife has diagnosed you with anemia, then food sources alone probably won't be enough to improve your anemia. But it still helps to try to eat iron-rich foods as much as you can along with any supplements you may be taking. Dietitians of Canada has good information about iron and iron-rich foods. Please see: www.dietitians.ca/Your-Health/Nutrition-A-Z/Minerals/Food-Sources-of-Iron.aspx.

Some tips for eating an iron-rich diet

Cooking meals in a cast iron pan is an easy way to boost the iron content in your food.



Add foods with vitamin C to your iron rich meal to help your body absorb iron. Tomatoes, strawberries, or orange slices can be added to a salad or eaten for dessert.



When eating an iron-rich meal, avoid high-calcium foods. Calcium makes it harder for your body to absorb iron.

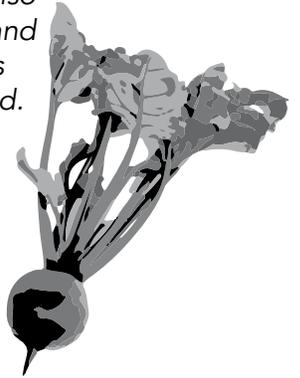
Some seafood like octopus, oysters and shrimp are rich in iron. Oysters should be cooked if you are eating them during pregnancy.



If you eat meat, darker meats like beef, duck, moose, venison and lamb have the most iron.



Try a salad with dark leafy greens like spinach or kale instead of lettuce. Add pumpkin or sesame seeds, chickpeas and nuts to salad to make an iron-rich meal. You could also add beets and beet greens to your salad. Beet roots and beet tops are both full of iron!

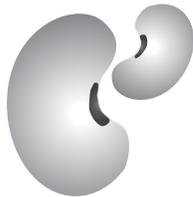


Tomato sauce is rich in iron. A pasta dinner with a leafy green salad is a simple, iron-rich meal.

Cream of wheat, oatmeal and many cereals are often fortified with iron.



Legumes such as lentils, lima, soy, kidney, pinto and black beans are all rich in iron. Add legumes to soups or stews to boost iron content.

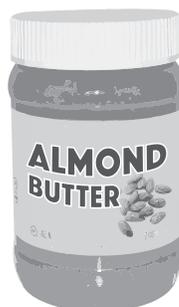


Boiling some frozen edamame (baby soybeans) makes for a quick and easy iron-rich snack.



Tomato puree has almost as much iron as a serving of spinach. Add tomato puree to sauces or stews.

Try almond butter instead of peanut butter. Two tablespoons of almond butter have as much iron as a serving of chicken.



Tofu is an iron-rich alternative to meat that can be added to many dishes.

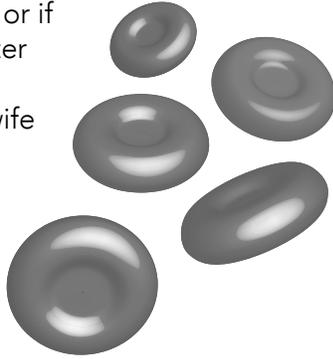


Access to healthy food

If you are pregnant or have just had a baby and are receiving Ontario Works, you are eligible for an extra \$40 a month through the Pregnancy/Breastfeeding Nutritional Allowance. Midwives can complete forms provided by Ontario Works caseworkers to access this funding for you.

Other treatment

If your anemia is severe, or if it's not getting better after you have tried oral iron supplements, your midwife may discuss referral to a doctor to discuss other treatment options like getting iron through an IV (a needle in your arm).



Anemia and chest or breastfeeding

Fatigue is often a reason new parents stop nursing earlier than planned. If you are feeling overwhelmed by nursing because you are struggling with fatigue, talk to your midwife about checking your iron levels to see if you need treatment for anemia.



Exclusive chest or breastfeeding (meaning your baby has only human milk) can help prevent anemia by delaying the start of monthly menstrual periods following pregnancy. Delaying the start of regular periods keeps blood in your body that you would otherwise lose every month.

Even if you are anemic, your body will adjust the level of iron in your milk so that your baby gets enough. This is good for your baby, but can affect your long-term health if your anemia isn't treated. It is safe to take iron supplements while you are nursing.

Anemia and depression

The symptoms of anemia can sometimes be similar to symptoms of depression. If you are anemic either during your pregnancy or after your baby is born, you may feel like you are depressed. Anemia can also lead to depression. If you have any concerns about the symptoms below, talk to your midwife.

IRON DEFICIENCY ANEMIA-Some symptoms	DEPRESSION-Some symptoms
<ul style="list-style-type: none">• Feeling extremely weak and tired all the time• Feeling grumpy and cranky• Having trouble concentrating• Headaches• Feeling dizzy• Unusual hunger and cravings for different foods• Frustration with loss of ability to do basic tasks	<ul style="list-style-type: none">• Feeling low (depressed mood) most days• Loss of interest in activities that you used to enjoy• Having trouble concentrating• Anxiety and excessive worry• Loss of confidence or self-esteem• Loss of appetite• Recurrent thoughts of suicide or death

Questions

If you have any concerns or questions after reading this pamphlet, talk to your midwife. If it helps, you can write your questions or ideas here and bring this paper with you to your next appointment.

*An important message for pregnant women,
their partners and families*

Preterm Labour Signs & Symptoms



*Learn about the signs of preterm labour
and what to do if it happens.*

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What is preterm labour?

A normal, or **term** pregnancy lasts 37 to 42 weeks.

Labour is a process which happens at the end of the pregnancy. In labour, there are contractions (tightenings) of the uterus (womb) that cause the cervix (opening to the womb) to open.

Preterm (premature) labour is labour that starts before 37 completed weeks of pregnancy.

What does this mean for my baby?

Preterm labour may lead to a preterm birth, that is your baby being born too soon.

Preterm babies:

- may have trouble breathing, feeding, and keeping warm
- may be more likely to get infections
- may need special care in the hospital
- may have to stay in the hospital after their mother goes home

Although babies born between 34-37 weeks are close to term, they still may have difficulties related to feeding, breathing, etc.

The earlier your baby is born preterm, the more likely he or she is to have long term health problems such as:

- blindness
- difficulty walking
- problems learning
- asthma and respiratory infections

Some preterm babies are very small and may not be strong enough to live.



Share the information in this pamphlet with your partner and family.

Could this happen to me?

Yes, preterm labour can happen to anyone.

Even if you are healthy and do “all the right things”, there is still a chance that preterm labour can happen to you. Medical experts do not know all the reasons why labour starts too early.

Some women may be more likely than others to have a preterm birth.

For example, these may be women who:

- have had a preterm baby before
- are carrying more than one baby, for example twins
- are smokers
- are underweight when they become pregnant
- are not getting enough healthy food
- have a lot of stress in their life
- have a vaginal or bladder infection
- have had several miscarriages
- do strenuous work, at home or through their job
- are adolescents
- experience violence
- use illicit drugs



One in every 12 babies in Canada is born too soon.

What can I do to reduce the chances of preterm labour?

Although it is not possible to prevent all preterm labour from happening, **there is still much you can do to help your baby to be born at the right time:**

- start prenatal care as early as possible in pregnancy and see your doctor or midwife regularly
- go to prenatal classes early in your pregnancy
- if you smoke, try to quit or at least cut down
- take time to lie down or put your feet up during the day
- follow Eating Well with Canada's Food Guide
- listen to your body – notice when things feel “different” and talk to your doctor or midwife about it
- talk to your doctor, midwife or to a social worker about how to deal with the stress in your life
- if you are treated for fertility, talk to your doctor about the risk of having more than one baby
- if you need help dealing with tobacco, drugs or violence issues, talk to your doctor, midwife or to a social worker
- learn everything you can about preterm labour:
 - ask your doctor or midwife questions
 - keep this pamphlet handy



A message for partners: You can help by knowing the signs of preterm labour and what to do if it happens.

How do I know if I am having preterm labour?

It is not always easy for a woman to tell if she is having preterm labour. Many of the signs of preterm labour can feel the same as some of the normal things that happen in the second half of pregnancy. There are important signs to watch for, especially if they are *new* or *different* from before.

Signs & symptoms of preterm labour:

- bad cramps or stomach pains that don't go away
- trickle or gush of fluid, or bleeding, from your vagina
- lower back pain/pressure, or a change in lower backache
- a feeling that the baby is pushing down
- contractions, or change in the strength or number of them
- an increase in the amount of vaginal discharge

Some women may just feel that “*something is not right*”.

A word about contractions

Preterm labour contractions can feel different from the normal tightenings that many women feel in the second half of pregnancy:

- they **may feel more regular**,
- they **do not go away** if you move around or lie down
- **there may be other signs** that happen with the contractions, such as fluid leaking from the vagina or pelvic pressure

A swab may also be done to help your doctor or midwife see if you are at risk of having your baby early.

You also need medical care if you have:

- fever, chills, dizziness, vomiting or a bad headache
- blurry vision or spots before your eyes
- sudden or severe swelling of your feet, hands or face
- a significant change in your baby's movement

What should I do if I think I am in preterm labour?

If you have any of the signs of preterm labour,

GO TO THE HOSPITAL RIGHT AWAY

You need to be assessed by a doctor or midwife to confirm if you are in preterm labour.

You can call your own doctor or midwife once you get to the hospital.

If you cannot drive yourself, ask a neighbour or friend to help or take a taxi.

If you cannot get to the hospital right away, call the birthing unit at your hospital for advice.

What happens if I am in preterm labour?

When you arrive at the birthing unit in the hospital, the doctor or midwife will check to see if you are in labour. Some tests and monitoring may be needed.

If there are no changes or only very small changes in the cervix,

- you will probably get to go home and rest
- your own doctor or midwife will want to see you soon.

If your cervix has started to open or shorten and the doctor or midwife thinks that you might give birth soon, you will be admitted to the hospital for treatment. (You may have to be transferred to a hospital that provides special care for preterm babies.)

If you are less than 34 weeks pregnant you will probably receive two doses of a medication to help your baby's lungs to mature. This medication works best if it is in your body for 48 hours, so you may also receive another medication to delay or stop the labour for at least this amount of time.

After this second medication,

- your body may delay labour on its own for a few weeks
- it is also possible that the labour will only be delayed for a short time and that your baby will be born early. Even a little bit of time will help the baby to grow and mature and become more ready for birth.



It's important to get to the hospital early if you are in preterm labour – it can make a big difference to your baby's health.

If you have any questions after reading this pamphlet, write them down here and talk to your doctor or midwife at your next visit:

Questions my partner has for my doctor or midwife:



Bring this booklet with you the next time you visit your doctor or midwife.

Remember:

Preterm labour can happen to anyone.

Know the signs of preterm labour.

*Go to hospital right away if you think
you have preterm labour.*

Hospital telephone number: _____

(ask for the “birthing unit”)

Doctor or midwife’s number: _____

*This information was adapted from a publication produced by the Community
Steering Group of the Ottawa-Carleton Preterm Birth Prevention Program*

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beststart@healthnexus.ca • www.beststart.org

This document has been prepared with funds provided by the Government of Ontario.

Distributed by:

A Guide to Preterm Birth and Preterm Babies

This information sheet is intended to provide you with details as to what might happen if you have a preterm birth and a preterm baby. Of all births, only 6 to 8% are preterm (more common with twins or other special cases). If your baby does come early, your midwife and hospital care team will provide you with information and support.

Preterm birth is any birth that happens after 20 weeks gestation and up to 36 weeks and 6 days.

In most cases of preterm labour the mother will:

- Be admitted to hospital in the labour and delivery unit
- Have a consult and possible transfer of care to the on-call Obstetrician (pregnancy doctor) at the hospital. Your pregnancy is now considered higher risk.
- Have a nurse(s) involved in the hospital care
- Have an IV placed in the hand or wrist with fluids and antibiotics.
- Have vaginal exams, speculum examination and swabs of the vagina
- Have urine and blood tests
- Have a consultation with the Pediatrician (baby doctor) before/after the birth
- Be transferred by ambulance to a level 3 hospital (more specialized than Guelph) in another city which may be far away. (before 34wks)
- May be observed in hospital for days or weeks if labour symptoms stop.
- If the baby is breech, caesarian section (C section) may be recommended.

Your midwife may:

Consult with the on call obstetrician and/or pediatrician and may stay with you until: an ambulance transport is arranged or if the birth is happening quickly.

Be in phone contact with you and your family if you are transported to another city

Be involved in your care as a support person after transferring your care to the doctor, if you are staying in the Guelph Hospital. (34wks and beyond)

Look after you and possibly your baby in hospital and/or at home. (Once you return to the Guelph area.)

What happens during preterm labour/birth is very dependent on how far along the pregnancy is.

From 20 to 24 weeks gestation:

At this early stage in pregnancy most women will stay in Guelph to deliver and not be transported to a level 3 hospital. Your midwife will most likely stay with you and work alongside the nurses and doctors to care for you and your family.

Babies that are born between 20 to 24 weeks are considered very preterm. Though their bodies are fully formed their brain and organs are very immature and are not ready to work outside of their mothers bodies. Survival of babies born at this point is not common. These very immature babies sometimes die in labour, at the time of birth or within a few hours of birth. It is not routine to resuscitate these babies.

From 24 to 34 weeks gestation:

In this time span the mother may receive an injection of a steroid to help the baby's lungs to mature. This injection is given if preterm labour/birth is suspected while the mother is still pregnant. Ideally women would be given two doses of the medication 24 hours apart before the birth. If labour is confirmed this stage in pregnancy you will be urgently transported to a level 3 hospital within Ontario and possibly beyond (Detroit). Unfortunately labour and births at a distance from Guelph cannot be attended by your midwife. She will be talking with you and your family and possibly your care providers to stay up to date.

Babies born between 24 to 28 weeks gestation usually need a lot of medical care immediately after the birth and for many weeks to months and possibly years later. From 24 weeks on, the survival rate increases by 3% for each additional day the fetus stays in its mother.

These early babies may have problems with their lungs, brain, infections, heart, SIDS and long term disabilities. These babies usually stay in a NICU (advanced nursery). They may have IV's and monitoring hooked up and are often fed by IV and tubes. Sometimes babies are transported after birth to a specialized children's hospital. This may mean a temporary separation with mother in one hospital, and baby in another.

From 34 to 36 weeks and 6 days:

These babies usually do very well and have almost equal survival rate to babies that are born at term. These babies are called "near term" but they still have some hurdles to overcome. Often these babies need to stay in the hospital nursery to strengthen their breathing, help with feeding, to grow and to treat jaundice.

Breastfeeding a preterm baby:

Most women are strongly encouraged to use a breast pump shortly after birth to stimulate milk production for their preterm baby. Preterm babies benefit greatly by receiving their mother's breast milk. Mothers of preterm babies make special milk designed for the needs of their early baby. This milk is different because it is full with protein and fat and immune boosters. Most preterm babies can be fed their mother's breast milk either at the breast, in a bottle or by tube. Even if your baby isn't ready for milk yet, your pumped milk can be stored for future use.

Final words:

Preterm labour and birth can be a very stressful time for families. Your midwife and care team will work to support a positive experience and birth. Often after a preterm birth, the mother is discharged from hospital before her baby. Most hospitals have Care-by-Parent rooms or other alternate accommodations for mothers/partners to stay close to their baby.

With all preterm babies anticipate that your baby will be ready to go home from the hospital at its original due date. Any sooner is a bonus!

Gestational diabetes

Between 3 – 20% of pregnant women develop GDM, depending on their risk factors.

Risk Factors for GDM

Being:

- 35 years of age or older
- from a high-risk group (Aboriginal, Hispanic, South Asian, Asian and African)
- obese (BMI of 30 kg/m² or higher)
- Giving birth to a baby that weighed more than 4 kg (9 lbs)

Using:

- Corticosteroid medication

Having:

- Prediabetes
- GDM in a previous pregnancy
- a parent, brother or sister with type 2 diabetes
- polycystic ovary syndrome (PCOS) or acanthosis nigricans (darkened patches of skin)

All pregnant women should be screened for GDM within 28 weeks of pregnancy.



What is Gestational Diabetes Mellitus (GDM)?

GDM is a type of diabetes that occurs during pregnancy. Your body cannot produce enough insulin to handle the effects of a growing baby and changing hormone levels. Insulin helps your body to control the level of glucose (sugar) in your blood. If your body cannot produce enough insulin, your blood glucose levels will rise.

The good news

- Your baby will not be born with diabetes.
- GDM can be managed and you can expect to have a happy, healthy baby

What does GDM mean for my baby?

If left undiagnosed or untreated, GDM can lead to high blood glucose levels. This increases the risk that your baby will weigh more than 4 kg (9lbs) and will have a difficult delivery. GDM can also increase the risk of your baby becoming overweight and developing type 2 diabetes in the future.

What does GDM mean for me?

A diagnosis of GDM means you will be working closely with your healthcare team to manage your blood glucose levels and keep them in the target range. This will help you avoid complications in labor and delivery. After your baby is born, blood glucose levels will usually return to normal. However, you are at greater risk for GDM in your next pregnancy and of developing type 2 diabetes in the future.

After your pregnancy, it is important to be screened for type 2 diabetes:

- within six weeks to six months of giving birth
- before planning another pregnancy
- every three years (or more often depending on your risk factors)

Early diagnosis and management of type 2 diabetes IS IMPORTANT because:

- undiagnosed or poorly controlled type 2 diabetes in a pregnant woman increases her risk of miscarrying or having a baby born with a malformation
- it will improve your chances of having healthy pregnancies and healthy babies in the future

For a healthy tomorrow...take good care of your GDM today

How is GDM managed?

Choose a healthy diet:

Enjoy foods from all four of the food groups and spread out your foods by eating smaller meals and snacks. This will help you manage your blood glucose levels and provide the best nutrition for you and your growing baby.

Achieve a normal pregnancy weight gain:

The amount of weight you gain will vary depending on your weight before your pregnancy. Weight loss is not recommended. Talk to your healthcare provider about appropriate weight gain for you.

Be physically active:

Regular physical activity can help control your blood glucose levels. It can also help you:

1. Boost your energy
2. Sleep better
3. Reduce stress
4. Reduce pregnancy discomfort
5. Prepare for childbirth
6. Get your body back faster after childbirth

Talk to your healthcare provider about the right type and amount of activity for you.

Check your blood glucose at home:

Checking your blood glucose with a blood glucose meter will help you and your healthcare team manage your GDM.

Take insulin, if needed:

Sometimes healthy eating and physical activity are not enough to manage blood glucose levels and your healthcare provider may recommend insulin injections for the duration of your pregnancy. Insulin will help keep your blood glucose level within your target range. This will help to keep you and your baby in good health.

Your healthcare team can answer your questions and support you through this important time in your life. Your team may include your doctor, nurse and dietitian, but remember: The most important member of your healthcare team is you!



Across the country, the Canadian Diabetes Association is leading the fight against diabetes by helping people with diabetes live healthy lives while we work to find a cure. Our community-based network of supporters help us provide education and services to people living with diabetes, advocate for our cause, break ground towards a cure and translate research into practical applications.

*This document reflects the 2013 Canadian Diabetes Association Clinical Practice Guidelines. ©2013 Copyright

 **Canadian
Diabetes
Association**

Related articles: *Guide for a healthy lifestyle after gestational diabetes, As you take your baby in your arms, take your health in your hands, and Type 2 Diabetes: The Basics*

diabetes.ca | 1-800 BANTING

What are Hypertensive Disorders of Pregnancy?

Midwives regularly measure the blood pressure of women who are pregnant or have recently given birth. Most women will have normal blood pressure during pregnancy. About 10% of pregnant women will develop high blood pressure. Most women who have high blood pressure while pregnant or after giving birth will not experience any major problems, nor will their babies.

Midwives and other maternity care providers use the term “hypertensive disorders of pregnancy” (or HDP) to describe a range of conditions, including:

Pre-existing hypertension	High blood pressure that is present before pregnancy or begins before the 20th week of pregnancy.
Gestational hypertension	High blood pressure that occurs in the second half of pregnancy. Gestational hypertension is the most common form of HDP. Gestational hypertension doesn't cause problems for mother or baby and usually goes away soon after birth.

Pre-existing hypertension or gestational hypertension can sometimes progress to preeclampsia.

Preeclampsia	High blood pressure that occurs in the second half of pregnancy along with other problems, such as protein in the urine.
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Why is preeclampsia so serious?

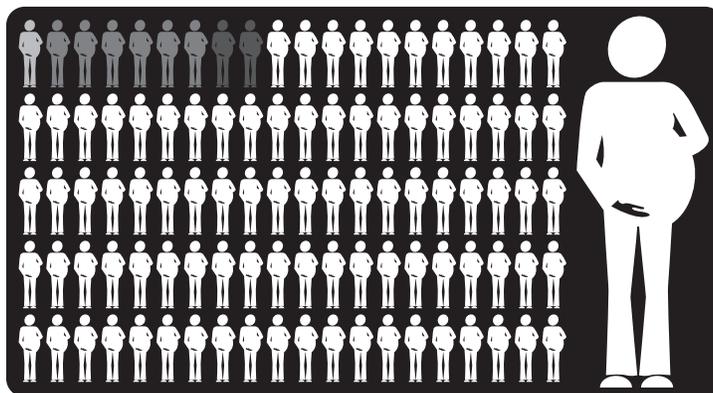
- Preeclampsia can decrease blood flow to the placenta, the organ inside the uterus (womb) that carries nourishment and oxygen to the baby. This reduces the oxygen and nutrients the baby receives, which may slow down the baby's growth.
- In some rare cases of preeclampsia, the baby may need to be born earlier than usual.
- Preeclampsia may cause the placenta to separate from the uterus too early (placental abruption). This is a rare emergency that can cause bleeding in the mother and prevent the baby from getting enough oxygen.

Fortunately, preeclampsia is usually detected early and treated effectively when pregnant women get regular care from midwives or other health care professionals. Most women who have preeclampsia have normal births and healthy babies.

Hypertensive disorders of pregnancy are among the most common complications that occur during pregnancy.

In 100 typical pregnancies in Canada

-  one will be affected by pre-existing hypertension
-  five or six will be affected by gestational hypertension
-  one or two will be affected by preeclampsia

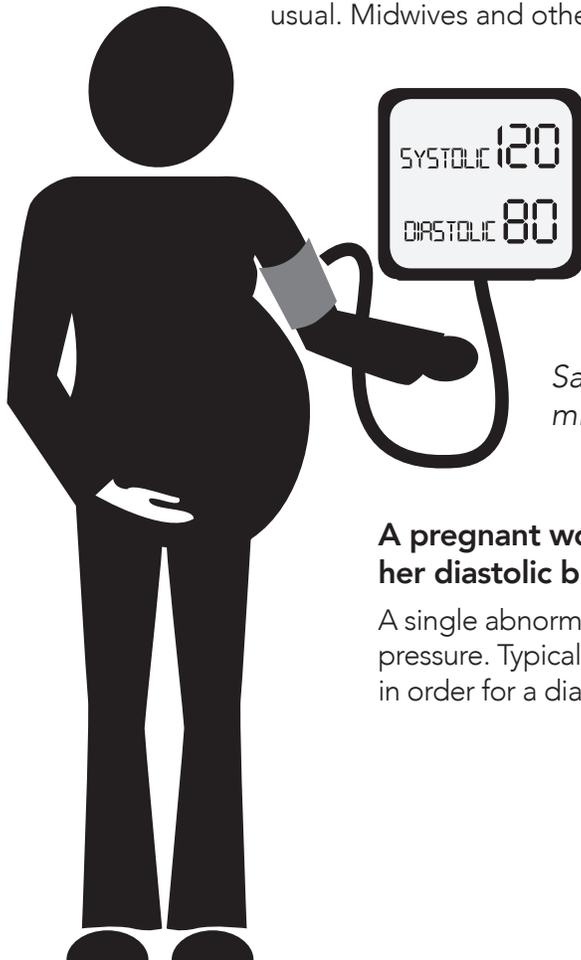


Very few of these women will experience serious problems with their pregnancy.

This document provides client-friendly information based on the Association of Ontario Midwives' Clinical Practice Guideline No. 15: Hypertensive Disorders of Pregnancy. It is designed to help you better understand some of the considerations and choices you may face while receiving care from your midwife. It is not intended to replace the informed choice discussions that you and your midwife will have. If you have any questions, concerns or ideas after reading over this document, please share them with your midwife.

What is hypertension?

Hypertension is the clinical term used to describe high blood pressure. Blood pressure is the force applied by the body's blood against the walls of the body's arteries, the vessels that carry blood away from the heart to the rest of the body. High blood pressure is when this force is greater than usual. Midwives and other health care providers measure blood pressure by tightening a cuff around the upper arm and using a stethoscope to listen to blood flow. They measure blood pressure using two numbers. The first number (systolic) describes the pressure in your arteries when your heart beats. The second number (diastolic) describes the pressure in your arteries when your heart rests between beats.



Said "120 over 80." Blood pressure is measured in millimetres of mercury (mmHG).

A pregnant woman is considered to have high blood pressure when her diastolic blood pressure measurement is 90 mmHg or higher.

A single abnormal measurement usually doesn't mean you have high blood pressure. Typically two or more high blood pressure measurements are required in order for a diagnosis to be made.

Why do some women develop preeclampsia?

Scientists don't fully understand what causes preeclampsia. It may result from a difference in the way the placenta develops. This different process of development may damage the placenta and cause it to release chemicals into the mother's blood stream that will:

- Cause high blood pressure.
- Affect the function of the kidneys, causing protein to be released in the urine.

Some women are more likely to develop preeclampsia than others. You are more likely to develop preeclampsia if you have one or more of the following risk factors listed below.

Risk factors for preeclampsia:

- You have had preeclampsia in the past
- You have diabetes or an inflammatory disease that affects the immune system (such as lupus)
- You are pregnant with twins
- You have a family history of preeclampsia (your mother or sister had preeclampsia)
- It is your first pregnancy
- Your body mass index (BMI) was above 30 when you became pregnant (you are overweight)

What tests will show if I have HDP?

Your midwife measures your blood pressure regularly. You or your midwife may have also used a dipstick to check your urine for protein. These are two ways that midwives watch for changes that could mean that you have HDP.

One high blood pressure measurement doesn't mean you have hypertension – typically two or more high blood pressure measurements are required in order for a diagnosis of hypertension to be made.

Similarly, a single positive dipstick test (+1 or higher) does not mean that you have harmful levels of protein in your urine.

Your midwife may want to monitor you more closely in case changes develop.

It's also important for women to pay attention to other symptoms that suggest that preeclampsia may be present.

Other symptoms of preeclampsia

CONTACT YOUR MIDWIFE IF YOU EXPERIENCE:

- A headache that doesn't go away even after you have taken two doses of 1000 mg of Tylenol (acetaminophen) four hours apart (and you have eaten recently and had enough water)
- Problems seeing: blurry vision, flashes, dark spots
- Stomach pain
- More nausea (stomach upset) or vomiting than usual
- Pain in your chest or shortness of breath

What happens if I have HDP?

Your midwife may arrange for you to see a doctor if HDP is suspected. A doctor will be able to order tests that provide more definitive information about your condition and prescribe medication if needed. Midwives in some communities are able to do these tests themselves through arrangements made with local doctors and hospitals.

Depending on your blood pressure measurements, your overall condition, how far you are in your pregnancy and your wishes and preferences, the following may be recommended:

Medication	A specialist may recommend that you take medicine to lower your blood pressure. Many different medications used to lower blood pressure are safe to take during pregnancy and breastfeeding.
Additional tests	<ul style="list-style-type: none">• Urine tests to look for increased protein levels, to check on the health of your kidneys.• Blood tests to look for other signs that your kidneys and liver aren't working properly and to check your blood's clotting abilities.• More frequent ultrasounds may be recommended to track your baby's growth and development.
Early birth of the baby	In some cases, the mother's health and well-being may require the baby to be born earlier than usual by inducing (artificially starting labour).

It may be necessary for a doctor to take over aspects of your care. If this is the case, your midwife will continue to provide support and will take over your care once your HDP has improved.

How will HDP affect my pregnancy and birth?

Most women who have HDP, including preeclampsia, give birth to healthy babies.

During pregnancy, your midwife may recommend more frequent monitoring to make sure you and your baby stay healthy. Monitoring could include:

- More frequent measurement of blood pressure
- Urine tests
- Blood tests
- Ultrasounds to measure the growth of your baby.

Otherwise, many aspects of your pregnancy and labour will be the same regardless of whether or not you have HDP. Your midwife will also discuss how HDP may affect your choice of birthplace.

What happens after I have my baby?

Your midwife may suggest that you avoid taking certain medications if you have pain following the birth of your baby. Acetaminophen (Tylenol) is recommended to relieve postpartum pain if your blood pressure has been high during your pregnancy. Ibuprofen (Advil) is typically NOT recommended.

Your midwife will monitor your blood pressure in the postpartum period to make sure it is not getting worse. Most women who have had high blood pressure while pregnant will find that their blood pressure returns to normal soon after their baby's birth.

Some women may still need medication for high blood pressure after having their baby. Your midwife and/or doctor will talk to you about medications that may be recommended. Many drugs prescribed for high blood pressure are safe to take while breastfeeding.

Sometimes women will develop symptoms of HDP only after their baby has been born. HDP that occurs in the postpartum period can be mild or it can be very serious. That's why it's important for women to pay attention to other symptoms that suggest that preeclampsia (see **Other symptoms of preeclampsia** table) may be present. If you experience these signs or symptoms in the postpartum period, page your midwife.

Your long-term health

Women who have had HDP are at increased risk of developing HDP in future pregnancies. They are also at higher risk of developing chronic high blood pressure in later life.

Your midwife can talk to you about what you can do to help to reduce your risk of blood pressure problems in the future.

Your midwife will also provide information about your blood pressure to the family physician, nurse practitioner or other provider who will be caring for you once you leave midwifery care.

Do you need more information?

Share your questions, concerns and ideas with your midwife. You can write them below or on another sheet of paper:

GROUP B STREPTOCOCCUS (GBS) INFECTION

DURING PREGNANCY



THE SOCIETY OF
OBSTETRICIANS AND
GYNAECOLOGISTS
OF CANADA

www.sogc.org

education
education
education
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Screening for GBS, and having treatment if needed, is a common and routine part of pregnancy.

Group B streptococcus (GBS) are common bacteria which are often found in the vagina, rectum or urinary bladder of women. This is not the same bacteria which causes strep throat. Infections from GBS are usually not serious for a woman and are readily treated with antibiotics. However, when a woman becomes pregnant, the whole outlook changes. There is no sure way to prevent the GBS bacteria from being passed to a newborn at the time of birth and although it is very rare, and despite medical treatment, some babies still die as a result of complications from a GBS infection. Your doctor would like to help prevent this from happening. GBS usually does not cause infections in pregnant women, the concern is for the baby. Read this pamphlet to find out about group B streptococcus infections (GBS).

About group B streptococcus (GBS)

When GBS bacteria reach a woman's bladder, kidneys or uterus they can cause an infection. Infections can cause inflammation and pain. A woman can have these bacteria in her body and not know it. If a woman has these bacteria in her vagina and rectum without having any symptoms, she is said to be colonized (positive). It is estimated that 15 - 40% of all pregnant women are GBS colonized. Between 40 - 70% of colonized mothers pass the bacteria onto their babies during the birthing process. While most babies are not affected by the bacteria, a very small number (1 - 2%) of these babies will go on to develop a GBS infection. Babies who are infected with GBS may have mild to severe problems which may affect their blood, brain, lungs and spinal cord. No one method of screening (testing) and treatment will prevent all GBS infant deaths.

Screening (testing) for GBS

Doctors agree that there are two acceptable options for screening, (testing) for GBS. A doctor may choose to routinely culture (test) all the pregnant women under his or her care between the 35th and 37th week of pregnancy, and treat the mothers who are GBS colonized (positive) with antibiotics when labour starts. Or a doctor may choose not to routinely test every woman, but rather to treat only those mothers who are at risk of passing the bacteria to their babies (Table 1) during the birth process. If cultures were not done around the time of the woman's 35th - 37th week of pregnancy, or if the test results are not available at the time of delivery, it is essential that women at risk are treated with antibiotics.

In addition, particularly if the woman has a history of bladder or kidney infections, a doctor may also test a woman's urine for the bacteria. If the bacteria are found in the urine but not found in the vagina or rectum, the woman is still considered colonized (positive) and will still be treated with antibiotics when she goes into labour.

Risk factors for GBS infections

Women are at high risk to pass GBS on to their babies if they:

1. Start labour before they reach 37 weeks gestation (with or without ruptured membranes).
2. Reach full term, but their membranes rupture (water breaks) and it seems as though the labour will last more than 18 hours.
3. If they have an unexplained, mild fever during labour.
4. If they have already had a baby who had a GBS infection.
5. If they have (or had) a bladder or kidney infection which was caused by the GBS bacteria.

How is the test done?

This simple and painless test is done by inserting a Special Q-tip into a woman's vagina and rectum. The Q-tip is then placed in a special solution to see if the bacteria grow. This is called doing a Culture. If bacteria grow, the woman is said to be colonized (positive) If no bacteria grow, the test is negative.

Treatment for mother

Expectant mothers who tested positive for GBS bacteria will be treated with antibiotics when they go into labour or if their membranes rupture (water breaks) early. If a mother is not tested but is thought to be at high risk (Table 1) for passing the bacteria on to her baby during the birth process, she will also be treated with antibiotics to kill the bacteria during her labour and birth. Studies show that it is not beneficial to give antibiotics during pregnancy, as in more than 65% of cases, the bacteria have time to re-grow before labour begins.

Be sure to tell your doctor if you think you have had an allergic reaction to antibiotics in the past.

Two types of GBS infections in newborns

There are two types of GBS infections that can happen to newborn babies. The most common type is called early-onset disease. In this case, the babies are almost always infected during their journey down the birth canal because the bacteria were in their mother's vagina. The symptoms of early-onset infections show up before the baby is seven days old. Some babies show signs of this infection as early as six hours after birth. Early-onset disease can cause infections in a baby's lungs, brain, spinal cord or blood. This type of GBS infection can be very serious and frequently hard for a newborn baby to fight off. This is the infection that antibiotic treatment in labour is aimed at preventing.

The second type is called late-onset disease. In this case, the babies don't show signs of a GBS infection until after they are more than seven days old. About half of these babies were also infected during their birth. The other half became infected after the birth by being in contact with their GBS positive mother, or another person who is a carrier of the disease. Late-onset infections can also cause serious problems for the newborn. The most common problem is meningitis - an infection of the membranes which surround the brain and spinal cord. The risk of late-onset disease is not decreased by antibiotic treatment in labour but antibiotics are available for the baby once it is born. Babies with early-onset disease are more likely to die than those babies with late-onset disease.

Treatment for baby

All newborn infants are watched closely for symptoms of an infection, particularly when the mother was GBS positive at some point in her pregnancy, and no matter whether she was treated with antibiotics or not. While it is true that the chances are small that an expectant mother who was treated with antibiotics during pregnancy will pass the bacteria on to her baby - it can happen. Babies who show signs of a GBS infection after birth will also be treated with antibiotics. If available, a baby specialist (paediatrician) may be asked to help look after a baby with a GBS infection.

Further resources from the Society of Obstetricians and Gynaecologists of Canada

- Guideline available at www.sogc.org:
 - The Prevention of Early-Onset Neonatal Group B Streptococcal Disease
- The book, "Healthy Beginnings: Giving your baby the best start from preconception to birth", available at www.sogc.org/healthybeginnings

Section 4 Mental Health

Depression During Pregnancy

BC Reproductive Mental Health Program



You have probably heard and read about postpartum depression. You may even have a close friend or family member who has experienced depression after giving birth. But you may not have heard about depression during pregnancy.

In the past, people thought pregnancy only made women feel happy and could even protect against depression. We now know that is not true. Many women feel tired, sad and can actually be depressed during pregnancy.

Depression affects 8-12 % of women while they are pregnant. The good news is that depression in pregnancy can be treated.

If a woman gets help during pregnancy she is less likely to experience depression after the baby is born (postpartum depression).

It is important to be aware of how you feel when you are pregnant. That will help you to make sure you get the support you need for you and your baby.

Depression During Pregnancy

Depression affects how a woman feels, her activities, her thoughts and her physical well being. A woman who is experiencing depression during pregnancy may:

- feel depressed or extremely sad, most of the day and nearly every day
- feel irritable or angry
- feel guilty or worthless
- feel hopeless and overwhelmed
- lose interest in things she used to enjoy
- sleep a lot more or a lot less than usual
- eat more or less than usual
- withdraw from family, friends and social contact
- cry for no apparent reason
- be restless
- have little energy
- find it hard to concentrate or make decisions
- have headaches, an upset stomach or other physical symptoms
- have thoughts that she will be a bad or terrible mother
- have frightening thoughts that keep coming back about harming herself or her baby

Only a doctor can diagnose depression. A pregnant woman may be diagnosed with depression if the symptoms:

- last for more than two weeks
- are very upsetting to the woman
- make it difficult to carry out her daily activities

Is there help?

Yes! There are many treatment options for women experiencing depression during pregnancy.

The first step is to talk to your healthcare provider. Sometimes people mistake depression for the normal changes you can go through when you are pregnant. These include feeling tired and irritable, trouble sleeping, loss of interest in sex, changes in appetite and weight gain.

You may find it helpful to fill out the Edinburgh Postnatal Depression Scale and show it to your doctor or midwife. This simple tool will help you figure out if you are struggling with depression.

You may also want someone you trust to go with you to appointments so that you can learn about depression and treatment options together.

Women who experience depression during pregnancy may need counseling and/or medication. Counseling can give you the support you need and help you learn about your illness and ways to cope with it. When depression is severe or counseling does not decrease the symptoms, a doctor may prescribe medication. This always involves weighing the risks and the benefits of medication.

Remember, the goal of treatment is to reduce your symptoms and increase your overall wellbeing so you can do the things that are important to you.

If I am depressed, why do I feel so anxious?

Many women who are depressed during pregnancy will also experience anxiety. Some symptoms of anxiety are a racing heart, feeling on edge, too much or unrealistic worry, and upsetting thoughts or images of harm to the baby. Other times women will experience symptoms of anxiety without being depressed.

It's important to tell your healthcare provider *all* of the symptoms you are experiencing. That way you can both discuss all of the support and treatments that are available to you.

How does depression in pregnancy affect me?

Women who are depressed during pregnancy are more likely to avoid prenatal care. As a result they do not get the care they need. They may not sleep or eat well. These factors plus the stresses that go along with depression may lead to medical problems such as premature labour and small birth weight infants.

Women who struggle with troubling thoughts and feelings of despair may use alcohol or drugs to cope. That may lead to other poor choices that put their health at risk including exposure to sexually transmitted diseases and violence.

If a woman with depression in pregnancy does not get treatment, it often gets worse. She is also more likely to have postpartum depression. If the depression is severe, it may take longer to respond to treatment. It may also effect how the mother interacts with her infant.

Treatment for depression in pregnancy will reduce the risk of depression after the birth (postpartum depression). It will also lessen the negative effects of depression on the woman, her infant and other children in the family.

Why Me?

Some women have a higher risk of developing depression during pregnancy. The most common reasons are if a woman:

- has experienced depression or anxiety in the past
- has a family member(s) who has had depression or anxiety
- took medication for depression or anxiety and stopped before or during pregnancy
- has too little support from friends, family and community

Partner & Family Support

It can be helpful to discuss what you learn with loved ones. They can help you to think through the advantages and disadvantages of your treatment options and how these would fit your life.

Family and friends can listen to your concerns, hold you and comfort you. You may need to share the responsibilities of daily chores around the house, such as cooking or cleaning. If you have other children you will need extra help from your

Self Care

Self-care is a way to make some positive changes in your life that will help to lessen your depression. An easy way to remember the basic steps in self-care is to think of the word "NESTS". Each letter stands for one area of self-care:

- **Nutrition** - Try to eat nutritious foods throughout the day.
- **Exercise** – Get regular exercise to reduce stress and feel better. Even a little physical activity can help!
- **Sleep & Rest** - Sleep is very important for both your physical and mental health. It is worth the effort to work on getting a good night's sleep.
- **Time for Yourself** – Take some time to care for yourself each day, even if it is just for a few minutes.
- **Support** – All new moms need support from others. Don't be afraid to ask for help and information! This includes practical support like childcare and information about resources in your community. It also includes emotional support from someone who can remind you of your strengths.

Who should I talk to?

If you notice the above symptoms in yourself, your partner or a family member, please contact your:

- family doctor, obstetrician or psychiatrist
- midwife
- public health nurse
- a registered psychologist 1-800-730-0522
- a registered clinical counselor 1-800-909-6303
- Pacific Postpartum Support Society (provides telephone support) 604-255-7999 or www.postpartum.org

Resources

- **BC Reproductive Mental Health Program.** Visit www.bcmhas.ca (Programs & Services → Reproductive Mental Health). This site has a range of information on women's mental health during pregnancy and the postpartum period. You will find fact sheets, worksheets, the Edinburgh Postnatal Depression Scale, and other resources. Check out the new *Coping with Depression During Pregnancy and Following the Birth* guide—a cognitive behavior therapy based guide for women and healthcare providers.
- **BC Partners for Mental Health & Addictions Information.** Visit www.heretohelp.bc.ca.
- **Your Local Crisis Line.** These phone lines aren't only for people in crisis. You can call for information on or if you just need someone to talk to. If you are in distress, call 310-6789—24 hours a day. Do not add 604, 778 or 250 before the number.
- **1-800-SUICIDE.** If you're thinking about suicide, call 1-800-SUICIDE (1-800-784-2433) to get help right away, any time of day or night. It's a free call.
- **HealthLink BC.** Call **811** or visit www.healthlinkbc.ca for free, non-emergency health information for anyone in your family, including mental health information. Through 811, you can speak with a nurse, a pharmacist or a dietitian. Translation services are available in over 130 languages. For deaf & hearing-impaired assistance (TTY), call 711.

Perinatal Depression Treatment Options

BC Reproductive Mental Health Program



Women can experience depression during pregnancy or after the birth of a baby. A woman struggling with depression feels down, sad or empty. She loses interest in doing things that she usually enjoys. She often sleeps and eats more or less than usual and cries for no apparent reason. She may withdraw from friends and family. She has negative and upsetting thoughts.

Depression is a medical condition. It important for a woman to seek help if she is concerned about her mood.

There are several types of treatment for women with depression, including: self care, support groups, counseling and medication. Different women will take different paths to feeling better. The decision about treatment is a very personal one.

Talk to your health care provider to learn more about the treatment options that are available. Remember the goal is to reduce symptoms and increase your wellbeing so you can do the things that are important to you.

Perinatal Depression (PND)

We usually hear about postpartum (after birth) depression. But depression can actually begin in pregnancy, right after birth, or anytime within the baby's first year of life. Perinatal Depression is an "umbrella term." It covers a range of symptoms that can affect the mother during this time.

If you have been diagnosed with depression, you probably have a lot of questions. Talk to your healthcare provider about the different treatments that are available. Different women will take different paths to feeling better. The important thing is to get treatment to reduce your symptoms and increase your overall wellbeing.

Treatment of PND Is Important!

Depression is a health condition. Women with moderate to severe PND need to receive healthcare. A woman whose PND is not treated may struggle with depression again and again in the future and that can lower her quality of life.

Infants are sensitive to the emotional states of their mothers. The way a mom interacts with her baby will shape the baby's development. Depression can affect these interactions. It also makes it harder for a woman to bond with her baby. The best way to make sure your baby has a healthy start is to get help for yourself.

The good news is there are several types of treatment for PND. It's often best to treat PND by using a number of different types like self-care, counseling, psychotherapy, support groups and medication.

With the right care, many women can decrease their symptoms and start to enjoy pregnancy and the months following birth. Treatment may also reduce the risk of depression in the future.

Self Care

Self-care is a way to make some positive changes in your life that will help to lessen your depression. An easy way to remember the basic steps in self-care is to think of the word "NESTS".

Each letter stands for one area of self-care:

- **Nutrition** - Try to eat nutritious foods throughout the day.
- **Exercise** - Get regular exercise to reduce stress and feel better. Even a little physical activity can help!
- **Sleep & Rest** - Sleep is very important for both your physical and mental health. It is worth the effort to work on getting a good night's sleep.
- **Time for Yourself** - Take some time to care for yourself each day, even if it is just for a few minutes.
- **Support** - All new moms need support from others. Don't be afraid to ask for help and information!

Note: These steps may not be enough to cope and recover from depression. You may also need psychotherapy, counseling and/or medication.

Psychotherapy & Counseling:

Women with mild depression often benefit from counseling and psychotherapy. For others medication may also be necessary.

Guided Self-Management: This form of treatment includes regular appointments with a health-care professional. At the appointments a woman receives support and suggestions for using self-care information and workbooks.

Cognitive Behavioural Therapy (CBT): This type of psychotherapy is very effective in the treatment of depression. CBT helps a woman to be aware of her negative thoughts. She then learns to question them and replace them with more realistic thoughts. A woman involved in CBT has regular appointments with a healthcare professional in a group or one-to-one setting.

Interpersonal Therapy (IPT): This type of psychotherapy focuses on the ways a woman interacts with the people in her life. A woman involved in IPT will have regular appointments with a healthcare professional in a group or one-to-one setting.

Support Groups: There are several types of support groups. Some that may be available are:

- General groups for people with depression offered by Health Authority mental health teams. (See your health authority website).
- Postpartum groups organized by Public Health Nurses along with other community service providers. (See your health authority website for a list of groups).
- Peer support groups led by people who have experienced depression are offered by several non-profit organizations across BC, such as the Pacific Postpartum Support Society.
- Group psychotherapy offered by the BC Reproductive Mental Health Program for women in the program.

Note: A doctor may prescribe medication when depression is severe or counseling does not decrease symptoms.

Antidepressant Medications

These medications treat the symptoms of depression at a chemical level in the brain. They work by increasing the level of certain neurotransmitters in the brain. The medications used most often are selective serotonin reuptake inhibitors (SSRIs) or serotonin and norepinephrine reuptake inhibitors (SNRIs).

A family doctor or psychiatrist can prescribe antidepressants. These medications are very effective at lowering symptoms for some people suffering from moderate to severe depression. It may take 4-6 weeks to know if the antidepressant you are taking will work for you.

Alternative Therapies

Many women ask about herbal supplements, massage, acupuncture and meditation. Right now, there is not enough research to recommend these as treatments for depression. Some women may find that they can help as part of their self-care. Light therapy can be helpful for women with a history of Seasonal Affective Disorder (SAD). It is important to check with your health care provider before beginning any alternative treatments. You need to make sure they are safe for pregnant and breastfeeding women.

How do I choose which type of treatment is best for me?

The decision about which type of treatment is best for a specific woman is a personal one. It depends upon how serious her symptoms are and how she feels about the different treatment options. It also depends on what treatments are available in her community.

It is a good idea to speak with your health care provider about the different treatments that are available. You can discuss the risks and benefits of antidepressant medication. It can be helpful to talk about what you learn with loved ones. They can help you to think through the advantages and disadvantages of each treatment and how these would fit your life.

Who should I talk to?

If you think you may be experiencing perinatal depression, please contact your:

- family doctor, obstetrician, or psychiatrist
- midwife
- public health nurse
- a registered psychologist 1-800-730-0522
- a registered clinical counselor 1-800-909-6303
- Pacific Postpartum Support Society (provides telephone support) 604-255-7999 or www.postpartum.org

Medication Myths & Facts

Myth: Antidepressants are addictive and you have to take them for life.

Fact: They are not addictive. Most women can stop taking them after about 1 year. However, the length of time will depend on how severe the depression is or how long it lasts.

Myth: You can't take antidepressants when you are pregnant.

Fact: Experts have judged some of these medications to be quite safe to take during pregnancy. However, the babies need to be checked after birth for temporary side effects. When you weigh the risks and benefits of medication, it is important to consider the effect of untreated depression on you and your baby.

Myth: You can't breastfeed while taking antidepressant medication.

Fact: Research suggests that you can breastfeed when taking certain antidepressants. A small amount of medication does get into the breast milk, but usually it does not have a negative effect on the baby. Your doctor will be able to help you to choose a medication.

Myth: Antidepressants change your personality.

Fact: They do not effect personality. They just balance your mood.

Myth: Antidepressants are "uppers" or "happy pills".

Fact: They are not "uppers". They are not like amphetamines. Antidepressants improve sleep, appetite, and energy level and that improves your mood. It is best to use medication along with counseling or psychotherapy and support.

Myth: Antidepressants do not get at the root of the problem.

Fact: Medication helps to relieve depressive symptoms so that you are able to get counseling, make changes and improve your quality of life.

Myth: Antidepressants have horrible side effects.

Fact: Like other medications, antidepressants may have side effects, but they are not life threatening. There is a range of side effects, and since everyone is different, side effects will differ. Most are minor and will lessen or disappear after a few weeks. Ask your doctor what to expect and be sure to contact them right away if you have any severe or unexpected side effects.

Resources

- **BC Reproductive Mental Health Program.** Visit www.bcmhas.ca (Programs & Services → Reproductive Mental Health)
- **BC Partners for Mental Health & Addictions Information.** Visit www.heretohelp.bc.ca
- **Your Local Crisis Line.** These phone lines aren't only for people in crisis. You can call for information on or if you just need someone to talk to. If you are in distress, call 310-6789—24 hours a day. Do not add 604, 778 or 250 before the number.
- **1-800-SUICIDE.** If you're thinking about suicide, call 1-800-SUICIDE (1-800-784-2433) to get help right away, any time of day or night. It's a free call.
- **HealthLink BC.** Call **811** or visit www.healthlinkbc.ca for free, non-emergency health information for anyone in your family, including mental health information. Through 811, you can speak with a nurse, a pharmacist or a dietitian. Translation services are available in over 130 languages. For deaf & hearing-impaired assistance (TTY), call 711.

Section 4 Depression in pregnant women and mothers

How it affects you and your child

Link to:

https://www.caringforkids.cps.ca/handouts/depression_in_pregnant_women_and_mothers

for more information

Booklet 2

Newborn Care

Vitamin K

What is vitamin K?

Vitamin K is a vitamin that is made in the intestine. Vitamin K is a vital nutrient that our body needs for blood to clot normally and stop bleeding. Babies are born with very small amounts of vitamin K in their bodies. We get vitamin K from the food we eat. Some vitamin K is also made by the good bacteria that live in our intestines.

What is vitamin K deficiency bleeding (VKDB)?

Vitamin K deficiency bleeding or VKDB, is a condition that occurs when the baby does not have enough Vitamin K. Without enough vitamin K, your baby has a chance of bleeding into his or her intestines, and brain, which can lead to brain damage and even death. Infants who do not receive the vitamin K shot at birth can develop VKDB up to 6 months of age.

How can I prevent VKDB?

The good news is that VKDB is easily prevented. The easiest and most reliable way to give babies vitamin K is by a shot into a muscle in the leg. One shot given after birth will protect your baby from VKDB.

What are the warning signs of VKDB?

In the majority of cases of VKDB, there are NO WARNING SIGNS at all before a life-threatening bleed starts. Babies who do not get a vitamin K shot at birth might develop any of these signs of VKDB:

- Easy bruising especially around the baby's head and face
- Bleeding from the nose or umbilical cord
- Paler than usual skin colour or, for dark skinned babies, pale appearing gums
- Yellow eyes after the baby is 3 weeks old
- Blood in the stool, black tarry stool, or Vomiting blood
- Irritability, seizures, excessive sleepiness, or a lot of committing may all be signs or bleeding in the brain

Is Vitamin K safe?

A study from the early 1990's found a possible link between getting vitamin K and developing childhood cancer. Paediatricians became very concerned about this and have done many studies since then, in many different ways, trying to see if this link was true. None of the studies found this link again, even though doctors and scientists looked very hard for it.

Does my baby get vitamin K from breast milk?

Yes, but not enough to prevent VKDB. There is only a little vitamin K in breast milk. Breastfed babies are low in vitamin K for several weeks until they start eating regular foods, usually at 4-6 months, and until the normal intestinal bacteria start making vitamin K.

Should all babies get a vitamin K shot at birth?

Infants who do not get the vitamin K shot at birth are at 81 times greater risk for developing VKDB than infants who do get the shot. VKDB is effectively prevented by the vitamin K shot — incidence of late VKDB, the most concerning type, falls to less than 1/100,000 infants when vitamin K is given at birth.

When the vitamin K is shot given?

If you choose vitamin K for your infant, we do not administer it immediately after the birth. It is usually given while baby is skin to skin so that the baby can receive comfort while receiving the shot.

ERYTHROMYCIN EYE OINTMENT

History:

In the 1800's, babies started being treated with silver nitrate to protect against eye infection (neonatal ophthalmia) from a sexually transmitted infection called Gonorrhoea (*Neisseria gonorrhoea*). Back when there were no antibiotics available, Canada made it a law for every baby to receive the silver nitrate to prevent devastating effects (including blindness) from that infection.

About Erythromycin Eye Ointment:

Silver nitrate drops are no longer available so erythromycin is the only ointment that is approved for the eyes of newborns. This ointment has been researched as a treatment for eye infection from Gonorrhoea and Chlamydia but it has not been proven to be very effective. Physicians believe that it is better and more effective to test and treat the mother prior to birth to reduce the chance of baby being exposed to the disease. Applying medication to the eyes of newborns may result in mild eye irritation. Some people feel that the eye ointment may interrupt the mother-baby bonding. Since, 2015, the Canadian Paediatric Society officially advocates for care providers to support an amendment to the current public health law to allow for parents to decline the eye ointment if the baby is at low risk for eye infection.

Key points:

It's important to understand that while it is the official recommendation for the law to be changed, it is still currently a law for care providers to put the eye ointment into both eyes of every baby.

Under the current law, care providers are expected to let public health officials know if the eye ointment has not been given, for example, if the parents refuse to allow the care provider to put the ointment into the baby's eyes.

Adapted from the Canadian Paediatric Society Position Statement: "Preventing Ophthalmia Neonatorum", March 6, 2015.

What can I do to help my baby get rid of bilirubin?

Right after your baby is born and beyond:

- Feed your baby often (at least 8 times every 24 hours)
- Keep track of your baby's urine (wet) and stool (dirty) diapers

NOTE: Giving your baby plain water or sugar water will not get rid of jaundice and can be dangerous.

When should I be concerned about my baby?

Contact your health care provider right away if:

- You have concerns about your baby's feeding
- Your baby's urine (wet) and stool (dirty) diapers are fewer than expected
(Please visit this website for more information www.caringforkids.cps.ca/handouts/how_many_diapers_will_my_baby_go_through)
- Your baby is sleepy all the time even during feeds
- Your baby's skin or the whites of their eyes is becoming more yellow (jaundiced).

If you are unable to reach your health care provider, take your baby to the nearest hospital.

If you have a follow-up appointment scheduled and have questions, please call:

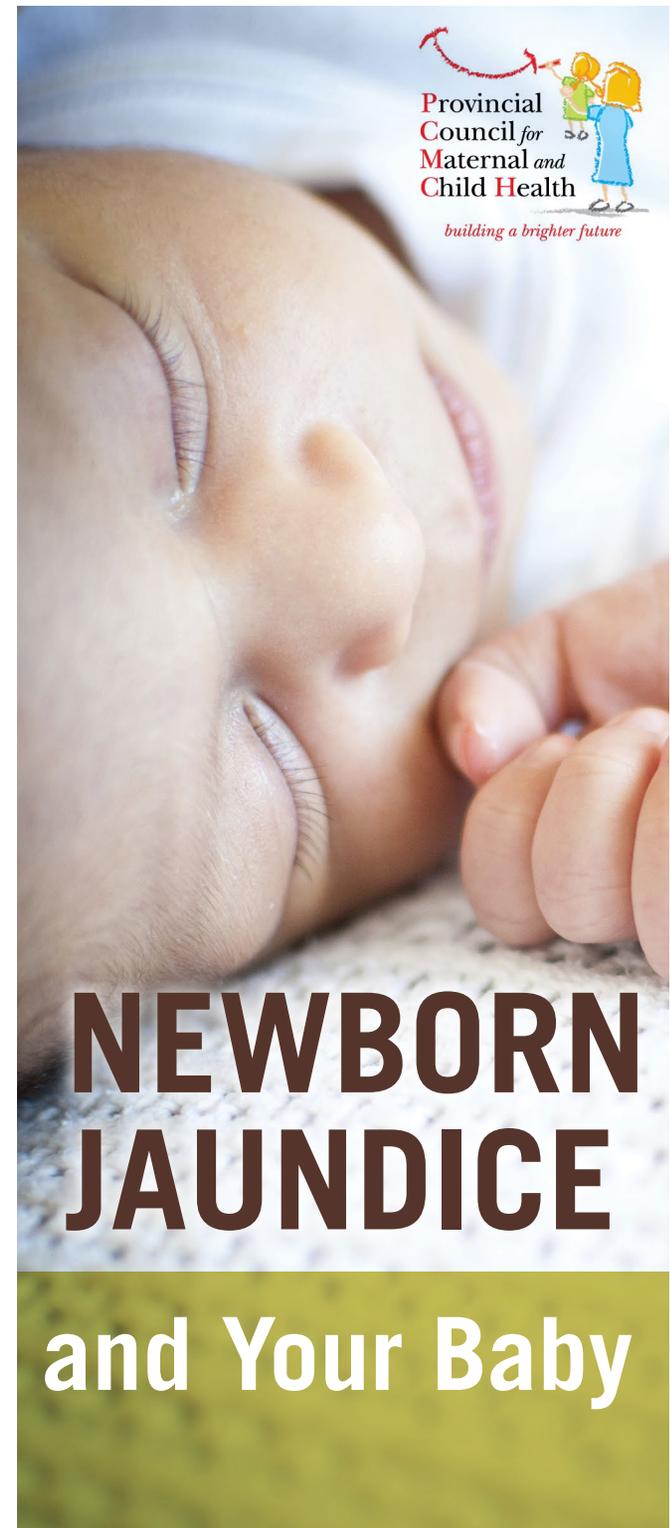
Resources:

- **Handout about newborn jaundice:**
www.caringforkids.cps.ca/handouts/jaundice_in_newborns
- **Breastfeeding Information For Parents - The Early Days**
www.breastfeedinginfoforparents.ca/alternate/earlydays.html
- **Mother and baby health care services offered in your area :**
1-866-532-3161 or
www.health.gov.on.ca/en/common/system/services/phu/locations.aspx#

The information in this brochure is based on guidelines from the Canadian Paediatric Society

Produced in collaboration with the Eastern Ontario Health Unit, 2017.

Publication date: June 2017



What is newborn jaundice?

- Jaundice is common and is a normal part of your baby's adjustment to life after birth.
- After babies are born, some cells in the blood break down and produce a substance called **bilirubin**. Bilirubin can cause babies' skin and whites of their eyes to look yellow. This is called **jaundice**.
- Jaundice can cause baby to be extra sleepy and not feed well. Jaundice often happens 2 to 3 days after the baby is born, and slowly goes away over the next few weeks.

Why do we screen (or test) for jaundice?

- Although rare, if bilirubin reaches very high levels, it can collect in your baby's brain and may cause lasting harm such as brain damage (kernicterus), hearing loss, and mental disability.
- We check bilirubin levels in all babies to find out which babies should be monitored more closely and which ones require immediate treatment. By treating babies before their bilirubin level becomes too high, we can prevent complications.



When do we screen for jaundice?

Your baby will be screened within 24 to 72 hours after birth with a heel prick blood test or an external reading from the skin using a bilimeter. Some babies may need more than one bilirubin test.

NOTE: If your health care provider orders a bilirubin test after your baby goes home from the hospital, please do not cancel or reschedule this test (even if you think your baby looks fine). The timing of this test is very important.

How is jaundice treated?

- Most babies will not require treatment and jaundice will go away on its own.
- The most common treatment for jaundice is phototherapy. Phototherapy is a special type of light that breaks down bilirubin so that your baby can get rid of it in their urine (wet) and stool (dirty). Your health care provider will explain if additional treatments are needed.

Note: Putting your baby in direct sunlight or in front of a window will not treat jaundice.

It is very important to take your baby for all bilirubin tests and appointments with your health care provider.



Which babies are more likely to need treatment for jaundice?

Babies who:

- Are born early (before 38 weeks of pregnancy)
- Have bruising after birth
- Have a brother or sister who was treated for jaundice
- Have a family history of a genetic condition called G6PD deficiency
- Have an ethnic risk factor
- Are having difficulty feeding



Newborn Screening: A healthy start leads to a healthier life

Early Detection Leads to Early Treatment

As a new or expecting parent, your baby's health is important to you. Although most babies look healthy at birth, they may be at risk of having serious health problems if they have a disease that is not detected and treated early. To help your baby get the best start in life, your newborn – and every other newborn in Ontario – will be offered screening for at least 29 different diseases. While these diseases are rare, as a group they affect about 200 out of the approximately 140,000 babies born each year in Ontario. The goal of screening is early detection – so that treatment can be started early and better health can be achieved. Newborn screening is not mandatory. It is considered the standard of care for every baby and is highly recommended. You have the right to choose to accept or decline newborn screening for your baby. You may wish to discuss this decision with a health care provider. Newborn screening is the only way to find babies with these diseases early enough to prevent serious, long-term health problems.

A small test, producing big benefits

In order to perform the screening test, a small sample of blood is taken from your baby. It is usually taken between 24–72 hours after birth by pricking the heel and placing the blood on a special paper card. You should be given an information letter that includes a reference number at the top. This number can be used to link to your baby's sample. The sample is then sent to Newborn Screening Ontario (NSO) where it is tested for 29 rare diseases including:

- Metabolic diseases
- Endocrine diseases
- Sickle Cell Disease (SCD)
- Cystic Fibrosis (CF)
- Severe Combined Immune Deficiency (SCID)

A full list of diseases is available on the NSO website www.newbornscreening.on.ca

Screening results: high risk and low risk

The screening results will show if your baby is at higher or lower risk for the diseases, but they are not yes or no tests (also known as “diagnostic” tests). If your baby ever develops symptoms of a disease, your baby's doctor should do the appropriate diagnostic testing. As well, it is important to remember that newborn screening does not test for all serious medical problems.

A screen negative result means that the chance your baby has one of the diseases is very low and no follow-up testing is needed. More than 99% of babies screened will have a screen negative result.

A screen positive result means that your baby has a higher chance of having one of the diseases and needs further testing. It does not necessarily mean that your baby has a disease. In this case, Newborn Screening Ontario (NSO) doctors will refer your baby to specialists for follow-up testing. You will be contacted by your health care provider (HCP) or a specialist if your baby has a screen positive result.

You may be asked to bring your baby back for a repeat screening sample. This will happen if:

- Your baby's first sample was taken before 24 hours of age
- Not enough blood was taken
- The sample was of poor quality

Your hospital or midwife will contact you if a repeat sample is needed. It is important that the repeat sample is taken as soon as possible so that your baby gets the full benefit of newborn screening. Needing a repeat sample does not mean there is anything wrong with your baby.

Results go to the hospital or HCP that did the test, by mail or electronically through the Ontario Laboratories Information System (OLIS). Your baby's HCP may also be able to get the results through OLIS. NSO does not release results directly to parents/guardians.

Will screening for these diseases find anything else?

Sometimes screening will show that a baby has a disease other than the 29 targeted diseases. If something like this is found, a specialist will discuss this with you.

Screening for Sickle Cell Disease may also detect if your baby is a carrier (also known as trait). Babies who are carriers are healthy and do not need any special medical treatment. Carrier results are available by request. Information on how to obtain your baby's carrier results is on the NSO website – or, ask your baby's health care provider.

Protecting your baby's privacy and confidentiality

NSO is committed to keeping your baby's blood sample and information safe and confidential, following the rules set out in law about their collection and use. They can be used for health care, analysis, quality assurance and research. Personal health information (PHI) is shared between health care providers involved in newborn screening and diagnosis to make sure that your baby gets the care and follow-up he or she needs. PHI is also shared with OLIS. You may not want this information shared, in which case, please make your wishes known to your HCP and/or contact NSO.

After testing is finished, your baby's sample is stored in a secure facility as part of your baby's medical record. It is stored for 19 years and then destroyed. Samples are stored so they can be used to make sure that the newborn screening tests are working properly. This can benefit your baby and all babies in Ontario. Sometimes a baby's sample is needed in the future by his or her doctor to run extra tests. Storing the sample means it is available if needed. Other possible uses for stored samples include testing by other laboratories at your request, the development of new or improved NSO tests, uses for which a legal warrant or court order is issued, and research approved by a research ethics board. In general, information that can connect your baby to the bloodspot sample can only be shared if you okay it in writing or if it is required by law.

If you would prefer that your baby's sample not be stored, you can ask NSO to destroy the sample or release it to you. For more information please contact NSO.

For more information

If you have any questions about newborn screening in Ontario, please talk to your health care provider or contact Newborn Screening Ontario directly.

Website www.newbornscreening.on.ca

Phone Toll Free: 1-877-NBS-8330 (1-877-627-8330) 8:00 AM – 16:00 PM

Email: NewbornScreening@cheo.on.ca

Mail: Newborn Screening Ontario Children's Hospital of Eastern Ontario 415 Smyth Road Ottawa, Ontario K1H 8M8

Twitter: @NBS_Ontario

Sources: *Newborn Screening Ontario* www.newbornscreening.on.ca



Critical Congenital Heart Disease (CCHD) Screening

A bedside test is available to newborns in Ontario that helps to identify babies with critical congenital heart disease (CCHD). Although most newborns do not have a heart problem, early identification and treatment is vital in helping those who do.

What is CCHD?

Congenital Heart Disease is a condition that occurs when a baby's heart or major blood vessels have not formed properly. "Critical" congenital heart disease (CCHD) often requires surgery or intervention in the first year of life.

Why screen for CCHD?

Some babies with CCHD are not identified by prenatal ultrasound or by physical examination after birth, and can appear to be healthy (no symptoms). These babies are at risk for having serious complications within the first few days or weeks of life and require emergency care.

How do you screen for CCHD?

CCHD screening is a **safe, quick and painless** test that can detect low oxygen levels, a common sign of CCHD. The monitor that is used is placed like a Band-Aid or sticker on your baby. The test is done at 24 to 48 hours after birth and takes only a few minutes to complete. The results are available immediately.

Can CCHD be missed with screening?

CCHD screening can identify babies with low oxygen levels, which can be a sign of CCHD, but it may not detect all heart problems.

What if my baby has a positive screen result?

A positive screen result does **not** mean that your baby has CCHD, but that further evaluation is needed to determine the cause of low oxygen levels. Urgent examination by a physician is important to ensure the best health outcomes for your baby.

If your health care providers are concerned about your baby's screening results, they will order more tests, such as an ultrasound of the heart (echocardiogram). Once identified, babies with CCHD can be seen by cardiologists and receive specialized care and treatment helping them to grow and develop normally.

If you have any concerns about your baby's health, please discuss them with your baby's health care provider.

A healthier start leads to a healthier life

Newborn Screening Ontario
Children's Hospital of Eastern Ontario
415 Smyth Road
Ottawa (Ontario) K1H 8M8

Website www.newbornscreening.on.ca

 Twitter @NBS_Ontario

Checking blood glucose in newborn babies

Healthy full-term babies do not need blood glucose checks.

Blood glucose is checked with just a few drops of blood, usually taken from your baby's heel.

The most natural way to feed your baby and keep a normal blood glucose level is early and frequent breastfeeding.

What is blood glucose?

Blood glucose is a sugar that moves through the bloodstream and provides energy to all the cells in the body. It is one of your baby's most important sources of energy. Babies with normal blood glucose levels have all the energy they need for healthy growth and development. However, in rare cases, blood glucose levels can fall too low and cause a baby to become sick.

Where do babies get glucose?

Babies get glucose through the placenta and umbilical cord while in their mother's uterus (womb). Some of that glucose is used right away as energy and some is stored for after birth. This stored glucose helps keep your baby's levels normal for the first few days of life until she is feeding well.

Once mom's breast milk is established (usually by a baby's third day of life), it becomes the main source of sugar for your baby. The sugar in milk changes to glucose in the body. When this happens, your baby will also start to store glucose for use between feeds.

Why do some babies have low blood glucose?

- In **healthy full-term babies** (babies born after 37 weeks), blood glucose levels are at their lowest 1 to 2 hours after birth. After this, the levels usually start to rise as your baby's body starts to use healthy sugar and fat stores.
- **Small and preterm (early) babies** may not have enough stores to keep the level up without extra feedings. These babies are most at risk for low blood glucose in the first 36 hours of life.
- **Babies whose mothers have diabetes** (especially mothers who need insulin or have diabetes that is not well controlled) may have trouble using their glucose stores. The normal rise in blood sugar that takes place after birth may not happen right away.
- **Babies who are large for their gestational age** (also called "large-for-dates") may have the same kind of problem during the first 12 hours of life.

Usually, low blood glucose levels will only last for a few hours, but can last up to 24-72 hours. Once your baby's levels become normal, he shouldn't have further problems with hypoglycemia (another name for low blood glucose). In very rare cases, low blood sugar can be severe or last a long time. If this happens, your doctor will do special tests to look for other causes.

Do all newborn babies need blood glucose checks?

Healthy full-term babies do not need blood glucose checks. They have enough stored energy to last them until breastfeeding is going well. Babies who are not well will need blood glucose checks and other tests.

Some babies are more at risk for low blood glucose. Babies who need routine glucose checks include:

- Preterm babies born more than 3 weeks before they are due (36 weeks gestation or less).
- Babies who are small for their gestational age (or "small-for-dates"), particularly if their growth was poor in the last few weeks of pregnancy.

- Babies whose mothers had diabetes during or before pregnancy.
- Babies who are large for their gestational age.
- Babies with rare medical conditions that cause low blood glucose.

How is blood glucose checked?

Blood glucose is checked with just a few drops of blood, usually taken from your baby's heel. If your baby is at-risk (see above) but doing well, blood glucose will be checked around 2 hours of age and then again before your baby feeds. In total, it will be checked about 3 to 5 times during the first and second days of life.

Why is low blood glucose dangerous to babies?

If a baby is already sick with low blood glucose—especially if it lasts for several hours—she may be at risk of long-term problems with development or learning.

What is the normal level of blood glucose in a baby?

Blood glucose is measured in millimoles per litre (mmol/L). Newborn babies should be treated when a single blood glucose test is less than 1.8 mmol/L, or when more than one test shows levels of less than 2.6 mmol/L.

What do I do if my baby has low blood glucose levels?

Your baby will be checked for signs of illness. He will need extra feedings if his levels don't rise on their own. The extra feeds can be given:

- from the breast,
- as expressed breast milk, or
- as formula.

If the extra feedings don't raise the blood glucose level or if your baby is not able to feed well, your baby will need intravenous treatment (through a needle or tube inserted into the body). Preterm babies or babies with low birth weight often have an intravenous started when they are born.

How long will blood glucose checks or additional treatments be needed?

Blood glucose levels usually get back to normal within 12 hours to 72 hours (3 days) of birth, especially once your baby is feeding regularly. It's rare for full-term babies to continue having trouble with their blood glucose levels. If this happens beyond 24 hours, your baby's doctor may want to do more tests.

How can I prevent low blood glucose in my baby?

The most natural way to feed your baby and to keep a normal blood glucose level is early and frequent breastfeeding. Talk to your health care provider before you start using breast milk substitutes (formula). It's also important to know if your baby is at risk for low blood glucose (see above).

Sources: *Canadian Pediatric Society* www.cps.ca

Vitamin D

Babies need vitamin D for healthy growth and development. It helps them build strong, healthy bones and teeth. Babies who don't get enough vitamin D are at risk of getting rickets, a disease that affects the way bones grow and develop. Vitamin D can also help prevent certain illnesses in childhood or later in life. Fortunately, vitamin D deficiency (not having enough) can be prevented by giving a daily supplement (drops) to babies who are at risk.

Vitamin D comes from different sources:

Foods: In Canada, cow's milk and margarine are fortified with vitamin D, which means it's added to them during production. Some foods like salmon, tuna, liver and kidney are good sources of vitamin D.

Sunlight: Vitamin D is formed naturally when skin is exposed to sunlight. But because Canada is located so far north, sunlight isn't enough at certain times of the year and in certain places. Sunscreen and clothing, which protect babies from the harmful effects of the sun, won't allow vitamin D to be formed.

How do I know if my baby is at risk of vitamin D deficiency?

Babies are at increased risk of vitamin D deficiency if:

- They are exclusively breastfed
- Their mothers are vitamin D deficient
- They are not exposed to enough sunlight
- They have darker skin
- They live in northern communities

These babies should get a daily supplement of vitamin D.

Why do breastfed babies need a vitamin D supplement?

Breast milk is the best food you can offer your growing baby. For the first 6 months of life, it is all your baby needs. Even when your baby starts eating solid foods, you can continue to breastfeed until 2 years of age and beyond. Breast milk also contains antibodies and other immune factors that help prevent and fight off illness. Breast milk has the right amount and quality of nutrients to suit your baby's first food needs. It is also the easiest on the digestive system, so there's less chance of constipation or diarrhea. But breast milk has only small amounts of vitamin D (4 to 40 IU per litre) and does not have enough to meet your baby's needs. That's why babies who are breastfed should receive a daily supplement of vitamin D from birth until they get enough from their diet.

How much vitamin D should my baby receive?

Babies who are breastfed should get 400 IU (international units) per day until the infant's diet includes the same amount from other food sources.

Do babies who are formula-fed need extra vitamin D?

Since vitamin D is already added to infant formula, most full-term babies who are formula-fed don't need a supplement.

If I am breastfeeding and I eat foods rich in vitamin D, do I still need to give my baby a supplement?

Yes. Although some foods are good sources of vitamin D, they won't provide enough vitamin D to enrich your breast milk to the level your baby needs.

Should pregnant women take vitamin D supplements?

A woman's vitamin D status during pregnancy will affect how much vitamin D the baby has at birth. Studies have shown that many pregnant and lactating women in Canada have low vitamin D levels. A baby born to a mother who is vitamin D deficient is more likely to have a vitamin D deficiency. Health Canada suggests 400IU/day, although recent information suggests the need to increase this amount. Most prenatal vitamins contain 400 IU/day per suggested daily dose. One study suggests that supplementing with 4000 IU/day is effective in assuring enough vitamin D in the breastmilk; this amount appears to be safe while pregnant and breastfeeding.

Sources and for more information:

www.cps.ca/english/statements/ii/fnim07-01.htm#MATERNAL

www.caringforkids.cps.ca/pregnancybabies/vitamind.htm



Transport
Canada

Transports
Canada



Keep— kids safe

REAR-FACING CAR SEATS

STAGE

1

Babies have large heads and weak necks. The car seats are angled backwards because babies need extra support while riding in a car. A rear-facing car seat will support your baby's neck in a sudden stop or crash.

INSTALL YOUR REAR-FACING SEAT

Always install the rear-facing car seat in the back seat of your car. This way, your child is as far away as possible from the front seat air bags if they inflate during a crash. There may be more than one way to install your car seat in your car. All three ways listed below are safe, so you can pick the one that is best for you and your car. You should check both your **car owner's manual** and the **car seat user guide** for more information.

Remember: A child should not be left in the car seat to sleep once the car has stopped.

Choose the option that provides the best installation



OPTION 1: UAS

Use the Universal Anchorage System (UAS), if you have it in your car. Your car owner's manual will show you where to find the anchors and may explain limitations for their use.

If you cannot find complete instructions in these manuals, and your child weighs 18kg (40 lb) or more, we recommend you install the child car seat using **both** the UAS (if equipped) and vehicle seat belt.

In most vehicles, this symbol  shows you where to find your car's UAS anchor bars. It also shows you where the connectors are on your car seat.



OPTION 2: SEAT BELT ONLY

Use this option if your seat belts or car seat have a built-in locking feature. Check your vehicle owner's manual and car seat user guide to see how to lock the seat belt correctly.



OPTION 3: SEAT BELT + LOCKING CLIP

Use this option if your seat belts and car seat do not have a locking feature. Check both your vehicle owner's manual and car seat user guide to see how to use the locking clip.

IMPORTANT TIPS

- Always consult your vehicle owner's manual and car seat user guide prior to installation.
- Ensure the car seat is at the recline position recommended by the manufacturer.
- Items that did not come with your car seat (such as seat protectors or comfort pads) may not be safe to use. Contact the car seat manufacturer before using these items with your car seat.
- Leave as much space as possible between the car seat and the front seat of your vehicle. Make sure you follow the recommendations regarding whether or not the car seat can contact the vehicle's front seats.

HOW TO INSTALL YOUR REAR-FACING CAR SEAT

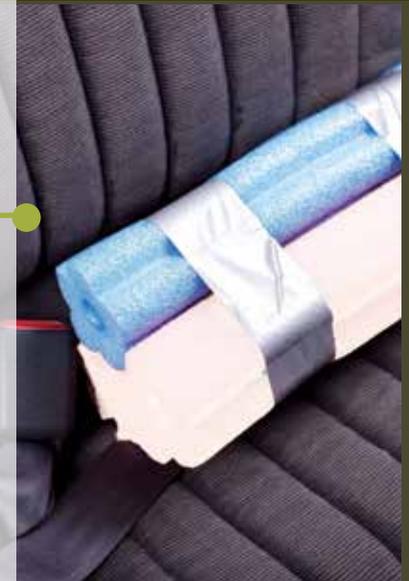
CHECK TO MAKE SURE YOUR REAR-FACING CAR SEAT IS INSTALLED CORRECTLY

Make sure the rear-facing car seat is at the correct angle

- The vehicle must be parked on a level surface.
- To protect the child's airway, make sure the rear-facing car seat is within the angle range indicated on the car seat or in the user guide.

TIP

- Use your car seat's built-in angle adjustments, or if the car seat permits, a pool noodle or tightly rolled towel to increase the recline angle of the car seat.



Make sure the car seat doesn't move

Hold both sides of the car seat **ONLY** where the seat belt or UAS belt is threaded through the car seat. Firmly try to move it in every direction: **it should not move more than 2.5 cm (1 inch) side to side or front to back.** Movement at the top of the car seat is normal.

WHY?

- In a crash or sudden stop, your child will be safer in a car seat that is tightly installed.



IMPORTANT TIPS

- By law, children must be buckled up in a car seat made for their weight and height. Read your provincial/territorial regulations for details.
- Many car seats are not installed correctly. If you are not sure that you have installed your car seat correctly, there may be a car seat clinic in your community that can help.
- Do not leave loose items in your vehicle during a trip, as they may hit and hurt someone in a sudden stop.
- When using bulky winter clothing, make sure that the harness system is tight, compressing the material for a snug fit. Check with the car seat manufacturer for alternative methods of clothing during the winter.
- It is important to make sure the harness system remains snug when you switch your child from winter clothing back to slimmer, summer clothing.

BUCKLE UP YOUR CHILD

Make sure the harness is snug every time you place your child in the car seat. This will keep your child as safe as possible in a crash or sudden stop.

Things to watch for:



HEAD

Make sure there is enough space between the top of your child's head and the top of the car seat; every car seat is different. Check your car seat user guide to know how much space is required.

SHOULDERS

Make sure the harness straps are snug on your child's shoulders. Slide a finger under the harness at the collarbone and pull gently up/out. Attempt to pinch the webbing of the harness with the thumb and forefinger. If you are unable to pinch the harness, then it is sufficiently tight.

CHEST

Make sure the chest clip is **at your child's armpit level** and closed properly.

HIPS

Make sure the harness straps are snug on your child's hips.

HARNESSES

Make sure the harness straps are **at or just below** your child's shoulders.



When should you move your child from a rear-facing car seat to a forward-facing car seat?



Don't hurry. Keep your child in the rear-facing car seat until he or she grows out of it. Your car seat user guide will tell you the weight and height limits of a child for that car seat. If your child grows out of the rear-facing car seat, there may be another model that fits your child.

It is okay if your child's legs touch the back of your vehicle seat.

Even if your child weighs more than 10 kg (22 lbs), and your provincial/territorial law says you can use a forward-facing car seat, your child is safer in the rear-facing car seat as long as he or she is still below the car seat's weight and height limits and fits in the car seat correctly.

WHEN TO REPLACE A CAR SEAT

- Car seats have expiry dates, so make sure you replace and dispose of yours when it expires.
- Always replace and dispose of a car seat that was in a vehicle that was involved in a collision. Even if the car seat was empty, it may have been damaged.
- Contact the manufacturer to check whether you should replace the seat if the shell or webbing of the seat are torn or damaged.

If you need more information on road safety, please contact us by email at mvs-sa@tc.gc.ca or call toll free 1-800-333-0371 (Ottawa area 613-998-8616).

Circumcision: Information for Parents

Circumcision of baby boys is an optional surgical procedure to remove the layer of skin (called the foreskin or the prepuce) that covers the head (glans) of the penis. It is most often done during the first few days after birth. Parents who decide to circumcise their newborn boys often do so for religious, social or cultural reasons.

*The Canadian Paediatric Society does not recommend
routine circumcision of every newborn boy.*

Potential benefits of circumcision

A few studies suggest that boys who have been circumcised may be:

- Less likely to develop cancer of the penis later in life – although this form of cancer is extremely rare.
- Less likely to get HIV and HPV infections.
- Less likely to get a urinary tract infection during childhood.

Female partners of men who have been circumcised are less likely to get cervical cancer.

Potential risks of circumcision

Circumcision is a painful procedure.

Problems resulting from the surgery are usually minor. Although serious complications are very rare, they do occur. These can include:

- Too much bleeding or infection in the area.
- Too much skin removed.
- Side effects from the method or medicine used for pain relief.

The risk of complications is lower in young babies than in older children. To minimize the risks, a trained and experienced practitioner using a sterile technique should do the procedure. Someone should follow up with you in the days after the procedure to make sure that bleeding has not increased.

Caring for a circumcised penis

- After the circumcision, you can comfort your baby by holding him and nursing him often.
- The penis will take 7 to 10 days to heal. The area may be red for a few days and you may see some yellow discharge, which should decrease as it heals. Talk to your baby's health care provider about what to expect.
- Follow the instructions given by the practitioner who did the circumcision about caring for the dressing, using petroleum jelly, keeping the area clean and bathing.
- Call your health care provider if:
 - You see persistent bleeding at any time during the healing process.
 - The redness and swelling around the circumcision do not start to go down in 48 hours.
 - Your baby develops a fever (rectal temperature of 38.0° C or higher).
 - Your baby seems to be unwell.
 - Your baby does not pass urine within 12 hours of the procedure.
 - There is a greenish or foul smelling discharge from the penis.

If you decide to have your baby boy circumcised

In Canada, most circumcisions are done by medical practitioners or skilled traditional providers.

Talk to your baby's health care provider about the issues involved in circumcision:

- Cost: Circumcisions for non-medical reasons are not covered by any provincial and territorial health plans.
- Possible complications, such as the ones described above.
- Pain relief:
 - Newborn babies feel pain. The practitioner performing the circumcision should use some type of local anesthetic, given by a needle in the area where the circumcision is done.
 - Additional methods of relieving pain include sucking on a pacifier dipped in a sugar solution, topical anesthetic cream and acetaminophen.
 - Anesthetics do carry risks and the needle can cause bruising or swelling. Creams may cause redness or swelling.
- Contraindications (a condition that makes a particular treatment or procedure not recommended): Sometimes, babies have health problems which increase the risk of complications after circumcision.

Caring for an uncircumcised penis

The foreskin covers the head (glans) of a boy's penis. During the early years of a boy's life, the foreskin starts to separate from the glans, but may not be fully retractable (meaning it can be pulled back) until a boy is 3 to 5 years old, or even until after puberty. This is a natural process that occurs over time. You do not need to do anything to make it happen.

An uncircumcised penis is easy to keep clean and requires no special care:

- Keep your baby's penis clean by gently washing the area during his bath. Do not try to pull back the foreskin. Never force it.
- When your son is old enough, teach him to keep his penis clean as you're teaching him how to keep the rest of his body clean.
- When the foreskin separates, skin cells will be shed and new ones will develop to replace them. These dead skin cells will work their way down the penis through the tip of the foreskin and may look like white, cheesy lumps. These are called smegma. If you see them under the skin, you don't need to force them out. Just wipe them away once they come out.
- When the foreskin is fully retractable, teach your son to wash underneath it each day.

Booklet 3

Birth

Section 1: Place of Birth

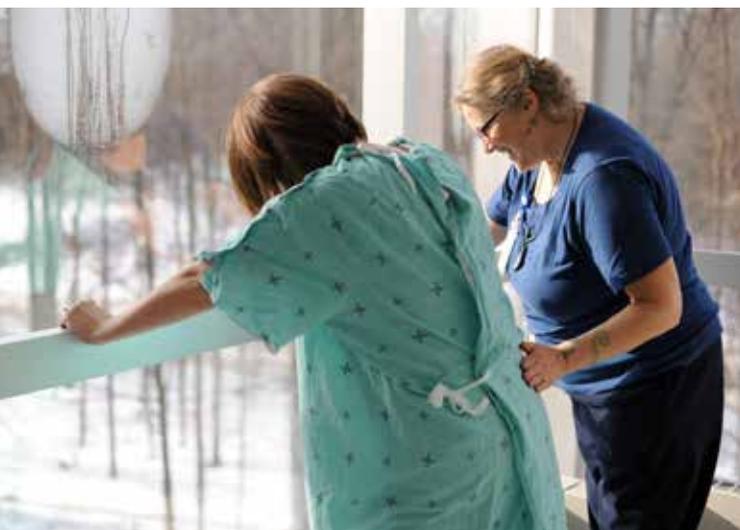


Midwifery clients who give birth in a birth centre:

- May feel safer and more relaxed than at the hospital.
- Will have a low likelihood of receiving medical interventions such as C-section, epidural or episiotomy.
- May enjoy the comfortable, intimate setting of a birth centre.
- Will be able to go home within hours of giving birth.

Midwifery clients who give birth in hospital:

- May feel safer and more relaxed than at home.
- May be able to go home within hours of giving birth.



“Having my baby in hospital was the right choice for me. I stayed at home with my midwife until I was well along in labour and then we moved into the hospital. I was relaxed, my birth went smoothly and I was able to go home again a few hours later.”

“I wanted to experience birth within the comfort of my own home. My midwives were confident and experienced in home birth. Having my baby at home was the safe and right choice for me.”

“My pregnancy and labour progressed without complications and I didn’t feel the need to be in hospital. The birth centre provided me with a safe, comfortable environment when my baby was born.”

There are hundreds of midwives in Ontario. More than 150,000 babies have been born under midwifery care since the profession was regulated in 1994, including more than 35,000 births at home.

For more information and clinic locations:

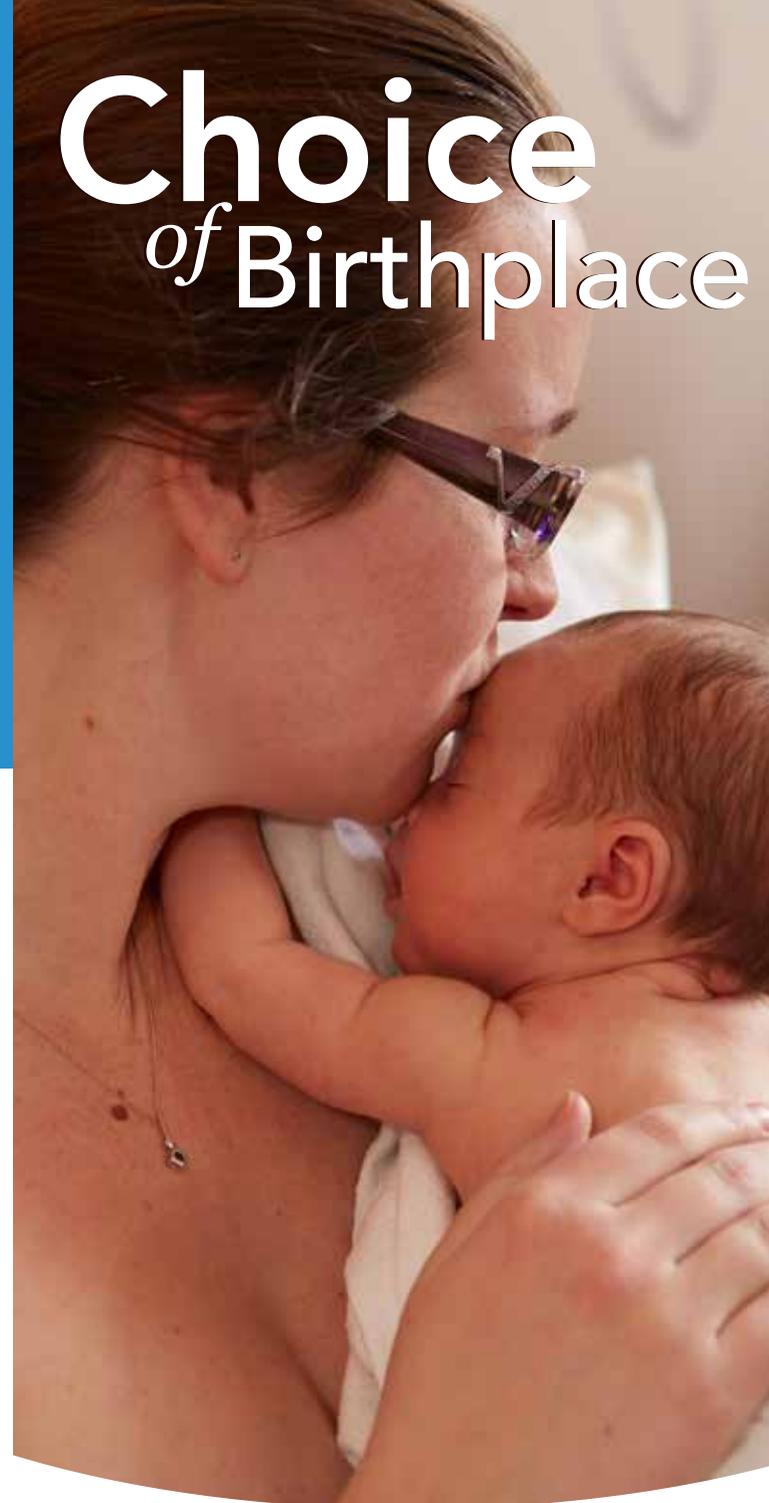
OntarioMidwives.ca

416.425.9974
(toll free 1.866.418.3773)



facebook.com/OntarioMidwives
twitter.com/OntarioMidwives
youtube.com/OntarioMidwives

Choice of Birthplace



As experts in normal birth, midwives provide care to clients during labour and birth in a client’s home, in a birth centre* or in a hospital.

It’s up to you.

Which setting is right for you?

There are many factors to consider when making a decision about where to have your baby. Your midwife can answer your specific questions, provide additional information and support you in making a decision that is right for you.

Midwifery clients who give birth at home:

- May feel safer and more relaxed than at the hospital or birth centre.
- Have the lowest likelihood of receiving medical interventions such as C-section, epidural or episiotomy.
- May find it advantageous not to travel before or after giving birth.
- May enjoy the familiarity and intimacy of being at home.



*Birth centres are only available in some Ontario communities.



Are birth centres safe? Points to consider when making your decision:

- Studies show that births attended at a birth centre are at least as safe as hospital birth.
- The equipment available at a birth centre is similar to the equipment in a community hospital, including oxygen, medications to stop bleeding and sterile instruments. Birth centres also offer showers, tubs, birth balls and birth stools, nitrous oxide and TENS machines for a variety of pain management techniques.
- Clients who plan to give birth in the birth centre can choose to move to hospital during labour. The majority of clients who transfer to hospital do so because of a long labour. If it becomes medically necessary to go to the hospital during your labour, your midwife is trained to make this assessment.
- Giving birth at a birth centre is not appropriate for all clients. Your health during pregnancy and labour are considerations to discuss with your midwife when making this decision.
- Part of what makes birth centres safe is the ability to transfer to hospital if the need arises.



Is home birth safe? Points to consider when making your decision:

- Studies show that home birth is at least as safe as hospital birth.
- The equipment that a midwife brings to a home birth is similar to the equipment in a community hospital, including oxygen, medications to stop bleeding and sterile instruments.
- Clients who plan a home birth can choose to move to hospital during labour. About 25% of clients who plan home birth transfer to hospital, most often because of a long labour. If it becomes medically necessary to go to the hospital during your labour, your midwife is trained to make this assessment.
- A home birth is not appropriate for all clients. Your health during pregnancy and labour and your personal circumstances are considerations to discuss with your midwife when making this decision.
- Part of what makes home birth safe is the ability to transfer to hospital if the need arises.



Whether you give birth at home, a birth centre or a hospital, you will:

- Typically have two midwives attending your birth: one to focus on you and the other to focus on your baby.
- Have access to a variety of methods of coping with labour. Midwives provide non-medical pain relief in all settings, but there are some drugs that you will only be able to access in hospital, such as an epidural.
- Be able to be admitted to and discharged from the birth centre or hospital by your midwife.
- Have a midwife who is trained to manage emergencies. Midwives work closely with doctors and nurses when needed. If your care is transferred to a doctor, your midwife will typically stay with you.
- Have a reduced chance of having interventions such as a C-section, forceps or vacuum, episiotomy, epidural or induction of labour.
- Receive six weeks of care after your baby's birth. Some postpartum appointments with your midwife will take place at home, and some will take place in the midwifery clinic. Your midwife will monitor you and your baby and provide breastfeeding support.

Quick facts about choosing your birthplace

- Your midwife will assess your health needs throughout your pregnancy and labour, and will provide information to ensure you can make a safe and informed decision about where to have your baby.
- At your prenatal visits, you and your midwife will make a plan and talk about what would happen in an emergency in any birth setting.
- If you have planned to give birth at home or birth centre, you can change your mind and move to a hospital once you are in labour. Ask your midwife what will happen if you wish to change your plan from hospital birth to home or birth centre once you are in labour.
- Your midwife may offer a home visit prior to the birth to discuss steps you can take to prepare for your labour, particularly if you are planning to labour or give birth at home.
- Because birth at home or in a birth centre is not as common as a hospital birth in Ontario, many clients and their families have questions about choice of birthplace. Ask questions and get the information you need to make a decision that is right for you.

What to Have for Hospital Labour and Birth

For Early Labour at Home:

Important

- Digital oral thermometer
- Dimenhydrinate (Gravol) and Acetaminophen (Tylenol) if no allergies

Optional

- Bendable drinking straws
- Massage lotion or oil
- Lip balm
- Hot water bottle or rice bag
- Waterproof cover to protect mattress

For the Hospital:

- Don't forget your folder**
- Health card and additional health insurance information (if applicable)
- Medications you take regularly in labeled pharmacy containers
- \$20.00 cash/credit/debit (refundable) for a pass to access the Family Birthing Unit
- Money (cash/credit) for parking – contact hospital for rates
- Clothing that makes birth and postpartum easier: **comfortable underwear** (no thongs) easy access tops for skin to skin, breastfeeding bra (no underwire), pajama pants, tights, housecoat.
Heavy Flow sanitary pads or disposable incontinence underwear (Depends) – enough for at least 3 days (dry-weave/plastic coating like “Always” brand is NOT recommended)
- Newborn diapers (approximately 25) and wipes (or there are washcloths available)
- Vaseline or olive/coconut oil for diaper changes
- Baby clothes and receiving blankets for hospital and going home
- Car Set <https://www.tc.gc.ca/eng/motorvehiclesafety/safedrivers-childsafety-car-time-stage1-1084.htm> (familiarize yourself with the car seat prior to discharge; your nurse is unable to help since every car seat is different)
- Pen

Optional

- Healthy snacks for yourself and/or support person during labour and hospital stay (if you bring food that requires refrigeration please label with your name)
- Pillows (for yourself and/or support person)
- Clothing, pajamas, toiletries and blanket or sleeping bag for support person
- Magazines/book, computer, chargers, etc. to keep you occupied
- Indoor footwear (slippers or light shoes)
- Camera
- Kleenex

Please note our hospital does not supply diapers, pads or mesh underwear

Please DO NOT bring perfumes, latex, and lilies as some people have severe sensitivities or allergies

What to Have for Home Labour and Birth

Everything on the list for Labour and Hospital Births PLUS:

Required:

- 2 large containers (laundry basket, box or pail)
- 10 clean wash clothes for hot compresses
- 4-6 clean bath towels (more if you plan a water birth)
- 10 – 12 receiving blankets to dry baby right after birth (these will usually get soiled)
- 1 roll of paper towels – for midwife to dry hands and instruments after washing
- Clean older sheets for your bed/birth surface (these will usually get soiled)

Optional:

- Flashlight or movable lamp
- Portable space heater to ensure a warm birth place, if necessary
- Large mirror to watch birth, if desired
- Birth/Exercise Ball
- Electric kettle or slow cooker for preparing hot compresses
- Waterproof mattress cover may be more effective than what is provided.
- Small bottle of hydrogen peroxide (to spot clean if needed)
- Rental birth tub if you plan a water birth

To prepare the birthing room and bath room:

- Have clean older linens ready to make up your bed/birth surface
- We provide vinyl covers in your home birth box. A waterproof mattress cover may be more effective.
- Clean and rinse your bath tub well in case you want to labour in the bath.

For AFTER birth:

- Acetaminophen (Tylenol) and Ibuprofen (Advil) if no allergies – for pain relief after birth
- Clean sheets for make your bed after the birth

We Provide:

- All required medical equipment, medications, supplies and instruments
- Large absorbent underpads, a peri-bottle, mesh underwear
- Waterproof plastic (tablecloths) to protect your mattress or carpet
- Garbage bags to collect garbage and laundry

Prepare a bag for baby and yourself with clothing, diapers, pads, etc. in case we need to go to the hospital

Please note our hospital does not supply diapers, pads, or mesh underwear

Should I Stay or Should I go?

Home birth and Hospital birth

As a recipient of midwifery care in Ontario, you have the choice to plan a home or a hospital birth. To help you make an informed choice, we have put together some information on both choices. As midwives, we do not have a preference for either choice; as long as your pregnancy is healthy, we are happy to provide care in whatever setting you feel comfortable.

Home Birth

International and medical research considers home birth as safe as hospital birth in well women with uncomplicated pregnancies. There are four main things which make home birth safe:

- Trained registered midwives who have necessary skills and equipment
- Good emergency back –up 011
- Living within 20 minutes of a hospital which has obstetrics
- Low-risk, health pregnancy

Occasionally, problems arise which need rapid treatment and transport to the hospital (ie distress in the baby, unusual bleeding). More frequently, transfers to the hospital occur because of a long labour or for pain relief. Keep in mind, we would be assessing throughout your pregnancy and labour for any signs of problems which might indicate that a home birth is not safe. To each home birth, midwives take all the necessary equipment to conduct a delivery; a Doppler to assess the baby during labour, cord clamps, sterile instruments, gloves, medication for the baby etc. we carry and set-up equipment for emergency situations (oxygen for mother and baby, resuscitation equipment for the baby, drugs to control bleeding in the mother, and intravenous set up and fluids for mother). Best of all – we clean up after ourselves.

Reasons why people choose home birth:

- Feel more in control and comfortable in familiar environment
- Family involvement easier
- No need to travel to hospital in labour
- Feel safer at home

Hospital Birth

When planning a hospital birth, the midwives will come to your house for the first part of the labour and then transfer to the hospital with you as you get closer to delivery. While at your house, the midwife will do regular assessments of you and the baby, and will provide labour support. Earlier transport to the hospital may occur if needed for you or the baby.

Once at the hospital, some routine hospital procedures are followed (e blood is drawn and the midwife must do some additional hospital charting) Midwives at Family Midwifery Care have privileges at Guelph General Hospital since 1994. If everything proceeds without problems, your care will be provided by two midwives. We consult with the doctors and nurses only if complications arise or pain medication is needed. Midwives continue to provide care for you in the hospital until approximately 3 hours after the birth, at which time you may go home or stay at the hospital.

Reasons why people choose hospital birth:

- A complicated pregnancy (ie breech, twins, preterm baby) or previous complicated birth
- Live more than 30 minutes from a hospital
- Feel safer in the hospital
- Feel more in control

Please feel free to discuss either of these options in more detail with us.

For more references and resources, ask your midwife

THE FACTS ABOUT HOME BIRTH IN ONTARIO

Midwives are primary care health professionals who provide women with clinical care and support throughout their pregnancy, the option of a home or hospital birth, and home visits up to six weeks postpartum.

The Model of Midwifery and the Role in Support of Home Birth

- Midwives believe that each woman should be able to decide where she wants to give birth. They are required to offer a woman informed choice. This means they will take time to listen to her questions and concerns, to provide her with clear evidence-based information about the benefits and disadvantages of each choice she is considering, and to support her in her decision-making.
- All midwives in Ontario offer a woman the choice of giving birth in the hospital or at home.
- Every midwife is trained to provide all the necessary care and support needed at a home birth.
- Midwives are required to attend a minimum number of home births to maintain registration and to demonstrate that they have the skills needed to provide safe care at home. Of all the regulated care providers in Ontario (e.g. doctors, nurses) only midwives routinely attend home births.
- For births in Ontario where the woman has chosen midwifery, the model is that two midwives (or a midwife and a qualified second attendant) will attend every birth.

MODEL

The Benefits of Home Birth

Recent research conducted in Ontario and British Columbia comparing women experiencing an uncomplicated pregnancy attended by midwives has shown:

- Women who chose to deliver at home were significantly less likely to experience unnecessary interventions in their labour (for example, induction, augmentation, pharmacological pain relief, episiotomy, assisted delivery, etc.).^(1,2)
- Women who chose a home birth moved to hospital for a cesarean delivery 5.2% of the time compared to a cesarean delivery rate of 8.1% in the planned hospital group.⁽¹⁾
- Women planning to give birth at home reported that they felt competent, responsible, secure, adequate, relaxed, victorious...and open and receptive to the experience.⁽³⁾
- Women who give birth at home are more likely to breastfeed and to breastfeed longer than women who give birth in the hospital.^(1,2)
- The Ontario Ministry of Health and Long-Term Care pays for midwifery services, whether the birth is in hospital or at home. The cost to the health care system for a midwife-attended home birth is less than a hospital birth with a family physician.

BENEFITS

THE NUMBERS

As of 2010, midwives have attended more than **25,000** home births since the regulation of the profession in Ontario. Ontario midwives attend approximately **3,000** home births annually. The number of births attended by midwives in Ontario has been **increasing** each year since regulation. Last year approximately **10%** of all births in the province were attended by midwives. Approximately **20%** of midwife-attended births take place at home.

The Safety of Home Birth

The literature demonstrates that there is no difference in the safety of births that take place in the home versus those planned to take place in the hospital.^(1,2)

- There was no difference in the safety or results when home births were planned with a well-screened population of women, within a supportive health care system, and attended by professionally trained midwives carrying emergency equipment.
- All midwives in Ontario are required to carry emergency equipment and are trained in its use.
- Midwives are experts who continually assess their clients through pregnancy and labour to ensure that they are good candidates for home birth.
- Midwives communicate with doctors regarding a client's care whenever necessary.
- Midwives communicate with ambulance personnel and hospital staff regarding the details of home births, in case they are required.
- Similar safety outcomes have been shown in other jurisdictions with comparable models of midwifery care.
- Two skilled attendants at every home birth means that there is a primary care provider present for both mother and infant.

SAFETY

References

1. Hutton EK, Reitsma AH, Kaufman K. Outcomes associated with planned home and planned hospital births in low-risk women attended by midwives in Ontario, Canada, 2003-2006: a retrospective cohort study. *Birth* 2009;36(3):180-9.
2. Janssen PA, Saxell L, Page LA, et al. Outcomes of planned home birth with registered midwife versus planned hospital birth with midwife or physician. *CMAJ* 2009;181:377-83.
3. Janssen PA, Carty E, Reime B. Satisfaction with planned place of birth among midwifery clients in British Columbia. *J Midwifery and Women's Health* 2006;51:91-7.

COLLEGE OF
MIDWIVES
OF ONTARIO



ORDRE DES
SAGES-FEMMES
DE L'ONTARIO

Home birth with a midwife might be right for you.

For more information, contact the **College of Midwives of Ontario** at 416.640.2252

College of Midwives of Ontario
21 St. Clair Avenue East
Suite 303
Toronto, ON M4T 1L9

phone. 416.640.2252
fax. 416.640.2257
email. admin@cmo.on.ca
web. www.cmo.on.ca



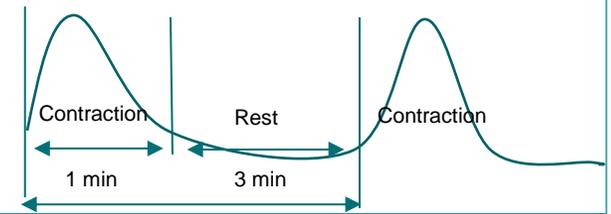
Section 2: Labour & Birth

When to page your midwife in labour.....

If this is your first baby, page when:

- Contractions are regular, strong and painful
 - Strong contractions take your full attention
 - You cannot talk through them
- AND**
- Contractions are 4-5 minutes apart or 2 contractions in 10 minutes, and they last 45-90 seconds
- AND**
- This pattern has been going on for 1 hour.

A Note about timing contractions:



These contractions are 4 minutes apart

Time contractions from the **START** of one contraction to the **START** of the next contraction

If this is not your first baby, page when:

- Contractions are regular, strong and painful
- AND**
- Contractions are 5-6 minutes apart and last 45-90 sec
- OR**
- Anytime you are having strong contractions even if they are not regular (especially if you have had very fast labours before)

All women should page if:

- Your water breaks

Please note if:

- The fluid is green tinged, green and thick, or blood red
 - The fluid has a strong smell
 - You feel something in your vagina
 - Baby is moving after your water breaks
 - Your midwife has asked you to lie down if your water breaks
 - You have done a test of GBS and if so, what the result was
- You are bleeding as much as a period or if blood is running down your leg

Please page if you are worried, concerned or need advice from your midwife

TO PAGE YOUR MIDWIFE CALL:

1-866-860-3712

Positions for Labour and Birth

Why are different positions important?

Changing positions, and moving around during labor and birth, offers several benefits. Some are obvious to the mother in labor: increased comfort / reduced pain, distraction, and an enhanced sense of control: merely having something active to do can relieve the sense of being overwhelmed and out of control.

Beyond these advantages, there are equally important effects on the baby and on the progress of labor. Changing positions during labor can change the shape and size of the pelvis, which can help the baby's head move to the optimal position during first stage labor, and helps the baby with rotation and descent during the second stage. Swaying motions such as walking, climbing stairs, lunging, and swaying back and forth are especially helpful with this.

Movement and upright positions can help with the frequency, length, and efficiency of contractions. The effects of gravity can help the baby move down more quickly. Changing positions helps to ensure a continuous oxygen supply to the fetus, rather than causing supine hypotension (low maternal blood pressure) by lying on your back or even semi-sitting.

Changing position can reduce the length of labor. Mendez-Bauer and Newton (1986) state: "duration of labor from 3 to 10 cm cervical dilation was about 50% shorter in patients who alternated supine and standing, standing and sitting positions."

Positions for First Stage Labor

For Resting:

		
<p>Side-lying. Try placing pillows between your knees for comfort.</p>	<p>Semi-sitting, in bed, on a couch, or leaning against your partner with his arms around you.</p>	<p>Sitting with one foot up. Asymmetrical positions help enlarge the pelvis on one side, and change the shape of the pelvis, which helps the baby find the best position.</p>

Rocking, Rhythmic Motion: In labor, it just feels better when mom rocks and sways in rhythm to her breathing. Partners sway with her, or do massage in rhythm with her breathing, or sing in rhythm.

			
<p>Rocking Chair</p>	<p>Sway on ball</p>	<p>Slow Dancing</p>	<p>Dance with Belly Lift</p>

Activity: Walking, climbing stairs, lunging. Activity helps baby to descend, helps baby to rotate into position for birth. In early labor, be active occasionally, but don't exhaust yourself by walking all through early labor. Walking is more effective in active labor and transition when baby has descended far enough to put pressure on mom's cervix and encourage the cervix to open.

		
Lunge.	Stair Climbing	Tailor Stretching

Positions for Back Labor

(when mom has back pain, irregular contractions, or is progressing slowly)

Leaning Forward: Many women, especially those with back labor, find it most relaxing to lean forward during contractions.

		
Straddle a chair (or the toilet), and rest your arms and head on the back	Leaning against a wall, or your partner, or leaning over a table. Can sway.	Raise the head of a hospital bed, then kneel on bed with arms resting on top of bed.

Hands and knees / kneeling: Can relieve back pain, help a posterior baby rotate, allows easy access for backrubs / counterpressure massage; makes it possible to sway side to side, rock back and forth, or do pelvic tilts to aid rotation and increase comfort. Having knee pads or kneeling on something soft will help knees. Can rest upper body on pillows, chair, or birth ball.

			
Hands and knees	By a chair	Over birth ball	Knee-Chest

Positions for Second Stage

For second stage, an ideal position would: open the pelvic outlet as widely as possible, provide a smooth path for the baby to descend through the birth canal, use the advantages of gravity to help the baby move down, and give the mother a sense of being safe and in control of the process. Try out a position for a few contractions. If it works, stay with it. If not, switch to a new position in between contractions. Depending on the caregiver, they may ask you to move to a specific position just prior to the birth.

“Standard” positions: These can be done by anyone. These are the positions that most OB’s are used to delivering babies in.

<p>Semi-sitting. With pillows underneath knees, arms, and back. During contractions, can wrap hands around knees and pull knees up toward shoulders (as in squatting). Most common in hospital setting. For mom and baby: some help from gravity moving the baby down; mom feels more in control than in lithotomy position. Benefits for caregivers: good view of perineum, easy access to perineum.</p>	
<p>Lateral / Side-Lying. Back curved, upper leg supported by partner. Gravity neutral, good for fast second stage. May be a comfort position for mom.</p>	

Kneeling positions: These work fine if you have no pain medication, or narcotics only. [If you have epidural anesthetic: These may be possible with a light epidural. You can ask your caregiver if it would be possible to try these positions, but you will need help getting into these positions (moving the IV tubing, catheter tube, monitor wires and so on so they’re not tangled around you is a production in and of itself!). Once you are in these positions, you would need to be “spotted” (have one person on each side of you, making sure you stay balanced and stable.)]

<p>Kneeling. Hands on the bed, and knees comfortably apart. Or one knee up. Good for reducing tears and episiotomies. May be restful for mom.</p>	
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Hands and knees. Arch your back occasionally for increased comfort. Great for back labor, big babies, posterior babies. Many find it most comfortable.



Upright positions / Squatting: These will not be possible if you have had an epidural, because with an epidural, you typically cannot get up out of bed.

<p>Sitting: On the toilet, on thighs of support person, on birthing stool/chair, on partner's lap. Opens pelvis, gravity enhancing, natural pushing position.</p>	
<p>Squatting / Supported Squat. Opens pelvis, gravity enhancing, sense of control for mom. During squatting, the average pelvic outlet is 28% greater than in the supine position. Stand, or sit back to relax in between contractions.</p>	
<p>Dangle. Gravity, no external pressure on perineum / pelvis. Feeling of being well-supported. May be difficult for mom to see or touch baby during birth.</p>	

Compiled by Janelle Durham. Source: The Labor Progress Handbook by Penny Simkin and Ruth Ancheta. Several other books, classes, etc. ** Starred illustrations by Ancheta. All other illustrations, Janelle Durham.

www.transitiontoparenthood.com/pain/positions

Tips For Labor Support People

How You Can Offer Support During Labor

Birth companions play a special roll during labor. Since there will be a lot going on that day, print this “cheat sheet” and bring it with you. Refer to it for ideas to try during the different stages of labor.

Techniques for Early Labor

Early labor is usually a time of happiness and excitement, mixed with some anxiety. You can:

- Rest with her to save your energy
- Draw a warm bath for her (check with your healthcare provider first if you think her bag of waters is broken)
- Prepare light snacks, and bring her drinks of water or non-acidic juices (as discussed with your healthcare provider)
- Take a walk with her
- Time contractions, and inform your healthcare provider of your progress
- Involve her in light activities, such as watching a movie, playing cards, or reading
- Inform necessary people that labor has started, especially if you need to cancel previous obligations or make pet or childcare arrangements

Techniques for Active Labor & Transition

Once her contractions become more intense, help her use the comfort techniques that work best for her. Suggest something new if the technique you’re using is starting to be ineffective or monotonous for her. Help her stick to her goals by being supportive and offering emotional assurance. You can:

- Help her change into different positions: standing, walking, squatting, hands and knees, kneeling, slow dancing, sitting, and side-lying are all good options
- Help her use movement, such as walking, stair climbing, and pelvic rocking
- Use face-to-face interaction, and give brief instructions if she loses focus (be sure to have fresh breath throughout labor!)
- Breathe with her through contractions, and count out loud if she wants you to



Face-to-face interactions can really help during active labor and transition.

- Guide her in visualization exercises that focus on the baby or special memories that you share
- Be supportive of the sounds she needs to make during labor. But be aware that higher-pitched cries could be a sign that she is feeling out of control and needs focus
- Provide relief and comfort techniques for nausea, such as pressing her acupressure points, giving her ice chips or warm liquids, applying a cold cloth to her forehead, and preparing a toothbrush with toothpaste if she vomits
- Massage her back, neck, abdomen, or other parts of her body in a way that feels good to her
- Help her into the tub or shower
- Help her use the birth ball
- Provide emotional encouragement (“You’re doing great.” “You’re breathing really well.” “Our baby will be here soon.” “You’re so strong.” “Your body is doing its job wonderfully.” “I love you so much.”)
- If she has an epidural, help her change from side to side and stay engaged in the birth process together (while she may no longer feel pain, she still needs your emotional support)

Tips For Labor Support People *(continued)*

How You Can Offer Support During Labor

Techniques for Back Labor

If she is experiencing backache in labor, the baby may be in the posterior position (facing mom's front). Try the following tips to ease the aching and encourage the baby to turn:

- Have her change positions—try squatting, hands and knees, kneeling, leaning forward, the slow dance, or the birth ball
- Help her into position to do pelvic tilts
- Apply hot and cold compresses
- Use your hands to do the double-hip squeeze
- Set up an area for her to do lunges
- Apply pressure to her kneecaps for the knee press
- Apply counterpressure

Techniques for Long Labor

Labor doesn't always follow a prescribed course. If labor is taking a long time:

- Change techniques and positions, including using the back-labor techniques mentioned above
- Offer to change the atmosphere in the room by dimming the lights or playing music, or leave the labor room together and go out to the hall or waiting area
- Rest (you need to rest, too, so consider having a backup support person)
- Help your partner stay hydrated and nourished as allowed by your healthcare provider
- Don't forget to eat if you're hungry and drink water so you will have the energy to provide good labor support



Partners can help women get into productive positions for pushing.

Techniques for Pushing

Pushing is the light at the end of the tunnel, but there is still hard work to be done. To help her in this phase:

- Suggest and help her use different positions (squatting with a bar or on a stool, semi-sitting, hands and knees, sitting on toilet or birthing chair, side-lying, forward-leaning)
- Provide emotional encouragement (“You’re almost there!” “You’re very strong!”)
- Help her see her progress by setting up a mirror or letting her know when you can see the baby’s head
- Hold a cool cloth to her forehead in between pushes
- Give her ice chips or sips of water

Having an Epidural

For pain management during labour



www.optimalbirth.ca

Inform yourself during your pregnancy and prepare for your child's birth.

The process of labour is different for everyone and it is important to be aware of specific considerations when choosing an epidural to manage pain during labour. This pamphlet highlights information about managing pain during labour and specifically, information on epidural use. Become informed about your choices and talk to your care provider.

01

How do you manage pain?

Pain is a normal part of labour. There are many non-medical ways to help soothe your pain, including support with coaching, massage and focused breathing, and also taking a bath or shower. However, if your labour is long or more difficult than usual, you may need more help and choose to use other medical methods of pain management such as nitrous oxide gas, intravenous narcotics such as Fentanyl or Demerol, or an epidural.

02

How do epidurals help with labour pain?

Epidurals have been shown to be a generally safe and effective way to manage pain during labour. The medication in the epidural numbs the nerves coming from your uterus and birth canal. Pain relief begins in 5-10 minutes and reaches maximum effect by 20 minutes. However, not all epidurals work perfectly. Approximately 10% of epidurals leave areas of the body 'unfrozen', and some only numb half the body. About 3-5% of epidurals will need to be replaced at some point in labour.¹

03

How is an epidural placed?

- Your nurse will assist you to sit on the side of the bed and hunch your back. This will open up a space between the bones of your spine.
- A specialist doctor, called an anesthesiologist, will inject some freezing liquid into your skin. This may feel like a bee sting, but it goes away quickly. The anesthesiologist will then insert a needle between the bones in your spine so that the pain-relieving drugs reach the tissues surrounding the spinal cord. You may feel an ache or pressure as this is done, but it does not usually hurt.

- The anesthesiologist will pass a tiny tube (catheter) through the hollow needle into the epidural space. You may feel a brief tingling sensation down one leg as the epidural catheter passes by a nerve. The needle is then removed. Pain medication will then be injected into the catheter.
- The epidural catheter is taped securely to your back. Once the epidural is in place, you will not feel it. It is okay to move around in bed.
- The epidural catheter will be attached to a medication pump that will continuously deliver pain relief medication at a steady rate.
- You may be given the opportunity to control how much medication you receive by pushing a button. This system will not allow you to overdose.

04

What special care do I need with an epidural?

- You will not be able to be in the shower or a tub if you have an epidural.
- If your labour slows down, you may be given a drug called Syntocinon in your IV to increase the number and strength of contractions. Many caregivers prefer women to wait until labour is well established (cervix is 3-5 cm dilated) before having an epidural.
- You may breastfeed your baby as soon as it is born.
- You may go home as soon as the effects of the epidural have worn off and you have normal strength in your legs.

A nurse will regularly check:

- Your baby's heart rate.
- Your breathing, blood pressure, temperature, and if you are able to urinate.
- The extent of your 'numbness' by touching you with ice to make sure that the medication is not spreading above the uterine area.
- How well you can move your legs.
- If you are having pain, and where. Your nurse may ask you to rate your pain on a scale from 0-10.



05

What does it feel like when the epidural is working?

The area between your groin and belly button becomes numb. The amount of pain that you are experiencing will decrease and may even go away completely. Your legs may feel warm, tingly, and sometimes, a bit heavy.

06

How much will I be able to move if I have an epidural during labour?

Depending on which hospital you are in, you may be able to have a 'walking' or 'mobilizing' epidural that will allow you to use the bathroom and perhaps walk with assistance.

07

What are the possible side effects of epidural analgesia for you and your baby?

An epidural during labour is usually safe and has few side effects or risks. Side effects may include:

- Temporary shivering
- A drop in your blood pressure that may cause your baby's heart rate to slow down after the epidural.
- Itchiness while the epidural is in place.
- Difficulty in pushing your baby out, especially if it is your first baby. Approximately 18% of women with an epidural need to have the delivery assisted with a vacuum extractor or forceps compared to 12% of women without an epidural.²
- Up to 15% of women will have a fever.³ It is difficult to know if the fever is from the epidural or from other causes, such as infection. Women and their baby are often given antibiotics, just to be sure.
- Inability to urinate on your own. If this happens, the nurse will put a tiny tube (catheter) into your bladder to empty it.

Rare side effects of epidural analgesia:

1. Rarely (less than 1 in 100), the epidural needle goes in too far and enters the spinal canal. If this happens, you may get a headache a day or two afterwards. Contact your healthcare provider if you have headaches after going home that do not go away.⁴
2. Very rarely (less than 1 in 10,000), a nerve may be damaged. It usually recovers, but there have been a few cases of permanent nerve damage (less than 1 in 85,000).⁵ An infection at the site of the epidural tube may also be a very rare complication.⁶
3. Very, very, rarely (less than 1 in 200,000), there may be bleeding into the epidural space.⁷

08

Can anyone have an epidural?

- You can decide when you are in labour if you want an epidural - you do not need to decide beforehand.
- Keep in mind that not all hospitals have available anesthetists 24/7 - you may have to wait for an epidural. This may be a consideration in choosing your birthing hospital.
- Epidurals are not available at home births.
- There are some rare pre-pregnancy health conditions which may mean you cannot safely be given an epidural. The anesthetist will ask you about your health before giving the epidural.

After reading this pamphlet you may have other questions about your own situation. Please discuss this pamphlet, and your choices, with your doctor or midwife.

Please note: The information in this pamphlet may not be appropriate if you have health issues that may affect your pregnancy and childbirth. Ask your care provider for personal advice related to your situation.

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- 2 Leighton B, Halpern S. The effects of epidural analgesia on labor, maternal, and neonatal outcomes: A systematic review. Am J Obstet Gynecol 2002;186:569-577.
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- 5 Loo C, Dahlgren G, Irestedt L. Neurological complications in obstetric regional anaesthesia. Int J Obstet Anesth. 2000;9:99-124.
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THE UNIVERSITY OF BRITISH COLUMBIA
Faculty of Medicine

CESAREAN SECTION :

What is a cesarean section?

A cesarean section is the delivery of a baby through a cut (incision) in the mother's belly and uterus. It is often called a C-section. In most cases, a woman can be awake during the birth and be with her newborn soon afterward.

Chances are good that you will be able to deliver your baby through the birth canal (vaginal birth). But there are cases when a C-section is needed for the safety of the mother or baby. So even if you plan on a vaginal birth, it's a good idea to learn about C-section, in case the unexpected happens.



When is a C-section needed?

A C-section may be planned or unplanned. In most cases, doctors do cesarean sections because of problems that arise during labor. Reasons you might need an unplanned C-section include:

- Labor is slow and hard or stops completely.
- The baby shows signs of distress, such as a very fast or slow heart rate.
- A problem with the placenta or umbilical cord puts the baby at risk.
- The baby is too big or in a position that means it cannot be delivered vaginally.

When midwives and doctors know about a problem ahead of time, they may plan to schedule a C-section. Reasons you might have a planned C-section include:

- The baby is not in a head-down position close to your due date.
- You have a problem such as heart disease that could be made worse by the stress of labor.
- You have an infection that you could pass to the baby during a vaginal birth.
- You are carrying more than one baby (multiple pregnancy).
- You had a C-section before, and you have the same problems this time and there is a higher chance labor might cause your scar to tear (uterine rupture).

In most cases, a woman who had a C-section in the past will be able to deliver her next baby through the birth canal. This is called vaginal birth after cesarean (VBAC). If you have had a previous C-section, ask your midwife or doctor if VBAC is a good option this time.

In the past 40 years, the rate of cesarean deliveries has jumped from about 1 out of 20 births to about 1 out of 4 births. This trend has caused experts to worry that C-section is being done more often than it is needed. Because of the risks, experts feel that C-section should only be done for medical reasons.

Midwives do not do C-sections. Midwives consult with a physician (obstetrician) at the hospital and the physician will take over your care if a C-section is needed.

What are the risks of C-section?

Most mothers and babies do well after C-section. But it is major surgery, so it carries more risk than a normal vaginal delivery. Some possible risks of C-section include:

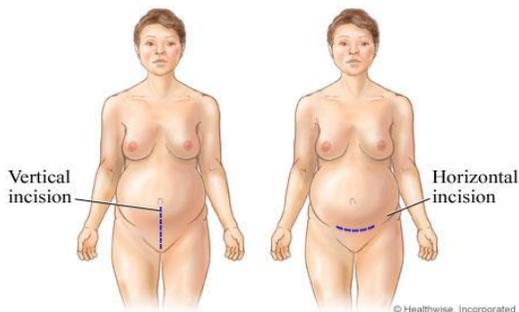
- Infection of the incision or the uterus.
- Heavy blood loss.
- Blood clots in the mother's legs or lungs.
- Injury to the mother or baby.
- Problems from the anesthesia, such as nausea, vomiting, and severe headache.
- Breathing problems in the baby if it was delivered before its due date.

If she gets pregnant again, a woman with a C-section scar has a small risk of the scar tearing open during labor (uterine rupture). She also has a slightly higher risk of a problem with the placenta, such as placenta previa.

How is a C-section done?

Before a C-section, a needle called an IV is put in one of the mother's veins to give fluids and medicine during the surgery. She will then get medicine (either epidural or spinal anesthesia) to numb her belly and legs. Fast-acting general anesthesia, which makes the mother sleep during the surgery, is only used in an emergency.

Once the anesthesia is working, the doctor makes the incision. Usually it is made low across the belly, just above the pubic hair line. This may be called a "bikini cut." Sometimes the incision is made from the navel down to the pubic area. After lifting the baby out, the doctor removes the placenta and closes the incision with stitches.



How long does it take to recover from a C-section?

Most women go home 3 to 5 days after a C-section, but it may take 4 weeks or longer to fully recover. By contrast, women who deliver vaginally usually go home in a day or two and are back to their normal activities in 1 to 2 weeks.

Before you go home, a nurse will tell you how to care for the incision, what to expect during recovery, and when to call your midwife or doctor. In general, if you have a C-section:

- You will need to take it easy while the incision heals. Avoid heavy lifting, intense exercise, and sit-ups. Ask family members or friends for help with housework, cooking, and shopping.
- You will have pain in your lower belly and may need pain medicine for 1 to 2 weeks.
- You can expect some vaginal bleeding for several weeks. (Use sanitary pads, not tampons.)

Call your midwife (or the doctor who did your surgery) if you have any problems or signs of infection, such as a fever or red streaks or pus from your incision.



Family
Midwifery
Care

Section 3: After your due date

Postdates Pregnancy

Postdates pregnancy is a pregnancy which extends beyond your due date. Most women having their first pregnancy will go beyond their due date. The World Health Organization defines a post-term pregnancy as one that has extended to or beyond 42 weeks (294 days) of gestation. This happens in about 6-8% of pregnancies.

Why is this a concern?

There can be complications for mothers and babies in pregnancies that go beyond 42 weeks. For babies, there is an increased chance of meconium (baby's first poop) being released in the amniotic fluid, of bigger babies, distress in labour and of the baby dying. For mothers there is an increased chance of labour complications, birth complications with perineal tear, need for vacuum or forceps, and a cesarean delivery.

What causes this to happen?

Incorrect dating is the most common reason pregnancies go beyond their due date. Some other contributing factors include first baby, male babies, family history of late babies, obesity, and mother's ethnicity (Caucasian women are more likely than African- American, Latina and Asian women).

Why are we talking about this?

Research recommends that because of these potential poor outcomes for mothers and babies women should be offered an induction of labour between 41 and 42 weeks to help reduce these risks. We are providing you with this information in order to make an informed choice.

What might be helpful?

Evening primrose oil, intercourse, walking, acupuncture or homeopathy can be used, but there is not good quality research regarding their efficacy. Stretch and sweep of membranes, between 38 and 41 weeks, can reduce the rate of post-term pregnancy and the need for induction.

What is an induction?

An induction is a set of interventions that will try to get you into labour. Rupturing membranes and medications are used in Guelph and Fergus. When a woman plans an induction, she is first assessed by an obstetrician to determine whether she needs medication (prostaglandin) to help soften, shorten and help dilate the cervix. In our community this is routinely done at 41 weeks and 2 days. If the cervix is ready for labour (has begun softening, shortening and dilating), oxytocin (given by IV) is started; routinely done at 41 weeks and 3 days. Women can choose an induction any time after 41 weeks.

Are there any risks with induction?

When medications are used to induce labour there is a risk of excessive contractions, abnormal heart rate for the baby, and rupture of the uterus. There is also an increased risk of birth with vacuum, forceps or caesarean.

What if I don't want to be induced?

It is difficult to know for sure that the baby is well but there are 2 things we use to give reassurance.

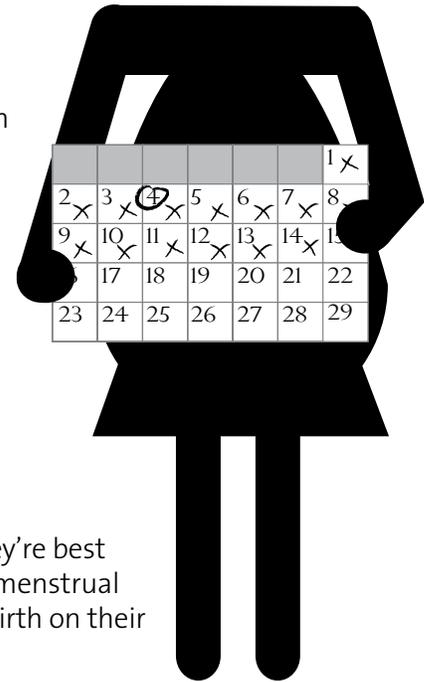
- Baby movements: This is done by the mother being aware of her baby's movements throughout the day and counting movements once a day after 41 weeks (6 movements in 2 hours).
- Ultrasound assessment ("Biophysical Profile or BPP"): Twice a week to assess baby and the amniotic fluid. By 42 weeks, midwives are required to consult with an OB according to College of Midwives' guidelines.

When your pregnancy goes past your due date



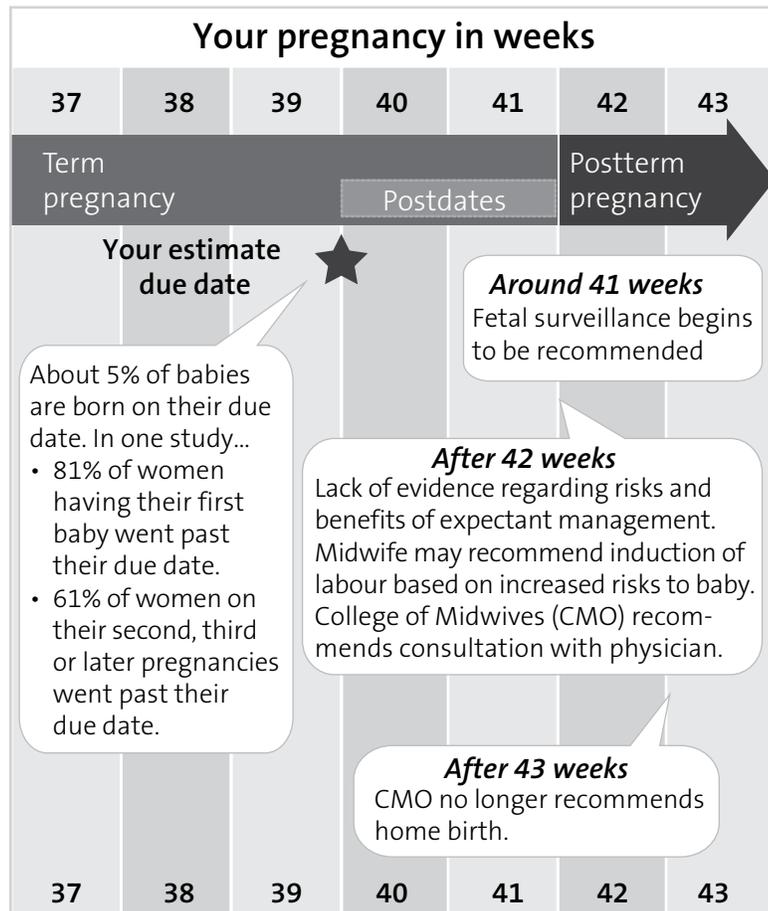
The length of a pregnancy is thought to be about 280 days, or 40 weeks. It is not unusual for pregnancies to last longer than 40 weeks. Anywhere between 37 and 42 weeks is considered a normal term pregnancy. A pregnancy that lasts longer than 40 weeks may be called a postdates, postterm or prolonged pregnancy.

Postdates pregnancy	A pregnancy that lasts between 40 and 42 weeks
Postterm pregnancy	A pregnancy that lasts 42 weeks or longer



What is an *estimated due date*?

It's important to keep in mind that estimated due dates are just that – they're best guesses based on the information available (such as the date of your last menstrual period or the results of an ultrasound). Only about 5 in 100 women give birth on their due date.



Your estimated due date may have a lot of emotional significance to you, your partner, and your family and friends. Expectations for your baby's arrival may be high, and you may feel frustrated if your baby doesn't arrive on time.

Your estimated due date is also significant to your midwife because it helps her assess whether your baby's growth is on track.

How often do pregnancies last longer than 40 weeks?

It's not clear exactly how many women experience postdates pregnancy. That's because different methods are used to estimate pregnancy length and different terms are used to describe pregnancies that last longer than 40 weeks. You are especially likely to go past your due date in your first pregnancy.

This document provides client-friendly information based on the Association of Ontario Midwives' Clinical Practice Guideline No. 10: Management of the Uncomplicated Pregnancy Beyond 41+0 Weeks' Gestation. It is designed to help you better understand some of the considerations and choices you may face while receiving care from your midwife. It is not intended to replace the informed choice discussions that you and your midwife will have. If you have any questions, concerns or ideas after reading over this document, please share them with your midwife.

Why do we pay attention to a postdates pregnancy?

Most babies are born healthy, regardless of whether they arrive at term or later. However, there are certain risks that begin to increase after about 41 weeks of pregnancy, rising even higher after 42 weeks of pregnancy.

- Overall, babies born at 41 weeks and later are at an increased risk of death during labour (stillbirth).
- When pregnancy lasts longer than 41 weeks there is an increased risk of problems arising in labour for which a caesarean section may be required.
- Babies born at 41 weeks and later are more likely to release a sticky poo called meconium into the uterus. Meconium usually isn't a problem, but if your baby breathes meconium into their lungs they can develop serious breathing problems (meconium aspiration syndrome). Babies who breathe meconium into their lungs receive care in a nursery or newborn intensive care unit (NICU). Most babies with meconium aspiration syndrome recover quickly.
- Babies born at 41 weeks and later are more likely to require the care of specialists and be admitted to the neonatal intensive care unit (NICU).

Risk of stillbirth due to postdates pregnancy

40 weeks	About 1.5 in 1000
41 weeks	About 1.5 in 1000
42 weeks	About 2 in 1000

Risk of meconium aspiration syndrome due to postdates pregnancy

40 weeks	About 3 in 1000
41 weeks	About 5 in 1000
42 weeks	About 5 in 1000

It's important to keep in mind that most postdates pregnancies are NOT associated with major or long-term complications. While the risk of certain complications is higher, the overall risk is still low. It's also difficult to predict which women or babies will develop problems as a result of postdates pregnancy.

What might happen if your pregnancy is postdates?

You might feel impatient. You, your partner, and your family and friends may have made preparations for your baby's arrival. You might be excited to meet the new member of your family. You may also feel physically uncomfortable – your back might ache and you may have a hard time getting comfortable enough to sleep.

Your midwife may recommend increased monitoring of your baby's well-being. Monitoring activities that your midwife may offer include:

- Counting how often your baby kicks during a specific time period.
- A period of monitoring your baby's heart rate using continuous fetal monitoring, called a non-stress test.
- Using ultrasound to measure:
 - » the amount of water (amniotic fluid) surrounding your baby.
 - » the baby's movements, muscle tone, practice breathing movements and amount of water around the baby, assigning a score for each measurement (this is called a biophysical profile).
 - » your baby's growth.

In some situations, **you may be offered the option of induction of labour.** This is when labour is artificially started by one or more of these methods:

- Giving you synthetic prostaglandin by inserting a gel, tablet or pessary (like a tampon) into your vagina. Prostaglandin is a hormone that softens the cervix so it dilates more easily. In some cases prostaglandin will also cause the uterus to contract.
- Using an intravenous drip (a needle in your arm) to administer a synthetic version of oxytocin, another hormone that stimulates the uterus to contract.
- Rupturing your membranes or "breaking your waters" by making a small hole in the amniotic sac surrounding your baby in the uterus. This will often encourage the uterus to contract.

Because some methods of induction take place in a hospital (prostaglandin gel, oxytocin), undergoing induction of labour may limit your options for where you give birth. Many midwives will offer herbs, homeopathic remedies, acupuncture, castor oil, nipple stimulation, or stretch and sweep (see below) for women interested in natural alternatives to induction.

The alternative to induction of labour is called **expectant management**. This is when you wait for labour to start while undergoing regular monitoring of your baby's wellbeing. If monitoring (for example, ultrasound) suggests that your baby is not continuing to thrive in your uterus, induction of labour may be recommended.

What else may help you to go into labour?

There are other methods that are thought to encourage labour naturally. One that midwives frequently offer their clients is called stretch and sweep or sweeping the membranes. Your midwife will use her fingers to examine your vagina and assess your cervix. Depending on the degree of change to your cervix, your midwife will stretch your cervix open (stretch) and pass her finger between the inside of your cervix and the bag of waters that holds your baby (sweep). This may feel slightly uncomfortable – some women even find it painful. Research suggests that stretch and sweep shortens the time before the baby's birth by an average of 3 days.

Other methods used to start labour include castor oil, acupuncture, homeopathy, naturopathic and herbal remedies. Little research has been done to establish how well these methods work or to test the ideal circumstances for their use. Please check with your midwife if you are interested in these alternative methods of starting labour.

Induction of labour compared to expectant management

One way that has been proposed to reduce the potential risks of postdates pregnancy is to induce labour once all pregnancies reach a certain point— for example, 41 or 42 weeks. Some research suggests that a policy of labour induction can reduce the already small risk that your baby will die during labour or afterwards. One problem with this approach is that hundreds or thousands of women will require induction in order to prevent a small number of serious injuries or deaths. Plus, the medical interventions used to stimulate labour and birth sometimes have their own risks:

- If your labour is induced you may be more likely to need a caesarean section or an assisted vaginal delivery (with forceps or vacuum).
- If your labour is induced your baby may be more likely to have breathing problems or require admission to a neonatal intensive care unit.

Ultimately, there is little good quality research to suggest that one option offers clear advantages over the other. What this means is that decisions about whether to choose induction of labour or expectant management can be difficult to make.

As long as your baby is healthy and well-positioned for labour, your chances of having a normal and uncomplicated birth may be highest if you wait until 42 weeks for your labour to begin on its own. Monitoring of your baby's well-being in the meantime will help ensure that your baby continues to do well and will help your midwife determine whether or not induction may be advisable. If monitoring suggests that your baby is no longer thriving in your uterus, choosing to undergo an induction of labour before more serious problems develop may offer the best chance for a normal and uncomplicated birth.

In Due Time...

Pregnancy Beyond 40 and Induction of Labour



As it becomes more common for women 40 and over to give birth, midwives, family doctors and obstetricians have started asking questions about the needs of this group of women. Recently, two groups representing obstetricians (in Canada and the United Kingdom) published professional opinions suggesting that induction of labour (getting labour started using medical techniques) be considered earlier in pregnancy in women 40 and over.¹

These opinion papers were not produced using the same sort of thorough and systematic process used to evaluate research and make recommendations for clinical practice guidelines. However, care providers may be changing their practice, based on these opinion papers, and recommending early induction of labour. The goal of this document is to help you understand research on this topic so that you can make the best informed choices for you and your family.

Why does age matter?

Many women 40 and over are in excellent health and most have pregnancies that are not associated with major or long-term problems. Your midwife will talk to you about your health history to get a good sense of your overall health and how any preexisting health conditions may affect your pregnancy. As they do for clients of any age, midwives check during regular prenatal visits to see if any health complications for you and your baby have developed.

However, research suggests that women aged 40 and over are at higher risk than younger age groups of

This document focuses on induction of labour. It doesn't address other decisions that midwifery clients who are 40 and over may face while pregnant.

A note about language

The most common terms used to refer to pregnancy in women 40 and over are "late" or "advanced" maternal age, "older motherhood" or "delayed childbearing." This pamphlet will use the phrase "pregnancy beyond 40" instead.

A note about fertility treatment

It is important to note that this document doesn't discuss the use of assisted reproductive technologies (ART) like in-vitro fertilization (IVF), donor eggs or fertility drugs. The research discussed here relates to spontaneous pregnancies without fertility treatment. If you used any assisted reproduction techniques and you are over the age of 40, talk to your care provider about your particular care.

having general health problems as well as developing pregnancy complications (such as having a baby with a chromosomal difference such as Down syndrome, developing gestational diabetes, high blood pressure, or having a C-section). They are also at increased risk of giving birth to a baby that has died before or during labour (stillbirth). This pamphlet will explain some research about the risk of stillbirth for women 40 and over and help you to make choices about either using medication to start your labour around your due date or waiting for labour to start on its own.

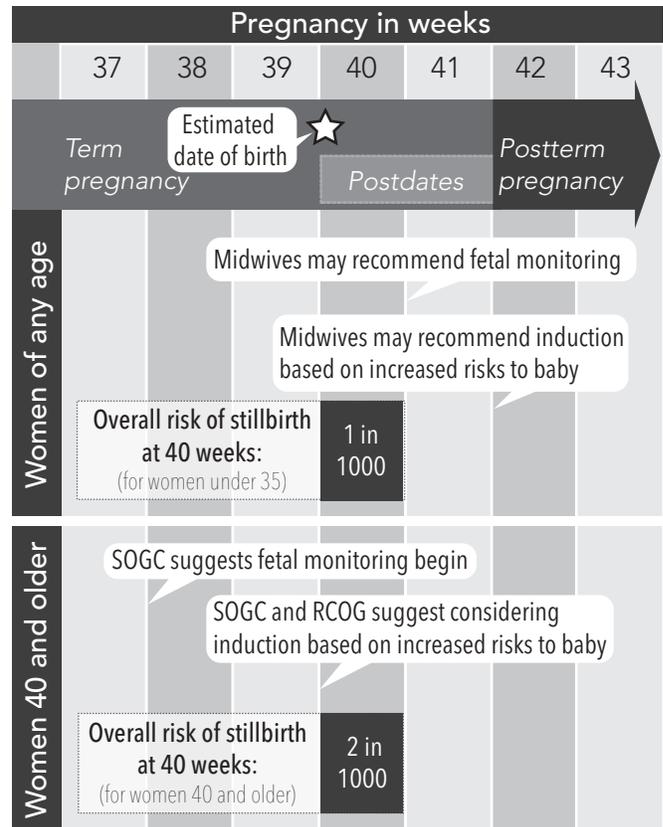
¹In 2012, the Society of Obstetricians and Gynaecologists of Canada (SOGC) published a paper on Delayed Childbearing. In 2013, the Royal College of Obstetricians and Gynaecologists (RCOG) in the United Kingdom released a paper called *Induction at Term in Older Mothers*.

This document provides client-friendly information on pregnancy beyond 40 and induction of labour. It is designed to help you better understand some of the considerations and choices you may face while receiving care from your midwife. It is not intended to replace the informed choice discussions that you and your midwife will have. If you have any questions, concerns or ideas after reading over this document, please share them with your midwife.

Postdates pregnancy, monitoring and induction of labour

While your estimated date of birth or “due date” is calculated to be 40 weeks of pregnancy, anywhere between 37 and 42 weeks is considered to be a normal term pregnancy. A “postdates pregnancy” is a pregnancy that goes beyond your due date. A pregnancy that lasts longer than 42 weeks is called a “postterm” pregnancy.

Most babies are born healthy, regardless of whether they arrive at term or later. However, for women of any age, the chance that a baby will be stillborn tends to increase as a pregnancy continues past the due date. That’s why care providers will usually suggest **keeping a closer eye on the baby when a pregnancy gets to 41 weeks**. This means your midwife may offer extra ultrasounds (if available in your community) between 41 and 42 weeks or a non-stress test, where a fetal monitor is used to listen to the baby’s heartbeat pattern over a period of time. Midwives will also discuss the risks and benefits of **induction of labour when a pregnancy goes past 41 weeks and may recommend an induction of labour at 42 weeks**. An induction is when labour is artificially started using drugs like prostaglandins or oxytocin or breaking the bag of waters that surround the baby (amniotic sac) to encourage the uterus to contract.



Why am I being offered earlier induction of labour because of my age?

The authors of the Society of Obstetricians and Gynaecologists of Canada (SOGC) and Royal College of Obstetricians and Gynaecologists (RCOG) publications looked at studies that show that if you are 40 and older, your chance of having a stillbirth around your due date is similar to the chance a woman under 30 has of stillbirth at one or two weeks after her due date. That’s why the SOGC suggests that care providers begin monitoring the baby’s well-being earlier in women age 40 and older, starting around 38 weeks. The SOGC and RCOG also

suggest considering induction of labour at an earlier gestational age, around 39-40 weeks.

According to the studies the authors of the SOGC and RCOG papers looked at, the risk of stillbirth at 39-40 weeks of pregnancy is about 1 per 1000 pregnancies in women under 35 and about 2 per 1000 for women 40 and over. Though risk of stillbirth is higher in women 40 and older, the overall risk of stillbirth is still very low and is even lower for those who don’t have conditions like diabetes, high blood pressure or heart, lung or kidney problems.

Induction is an important option when it’s clear that the

Risk of stillbirth at 39 to 40 weeks of pregnancy for women 40 years and older	
Pregnancies in women without diabetes, high blood pressure or heart, lung or kidney problems	About 1.5 in 1000
All pregnancies	About 2 in 1000
Risk of stillbirth at 41 weeks of pregnancy for women 40 years and older	
Pregnancies in women without diabetes, hypertension or heart, lung or kidney problems	About 2 in 1000
All pregnancies	About 2.5 in 1000

Does it make a difference if I've had a baby before?

Risk of stillbirth is lower if you have already had a baby before, regardless of your age.

*These numbers are different than the risks of stillbirth quoted earlier for women at 39-40 weeks (i.e., 2/1000 for women 40 and over and 1/1000 for women under 35). That's because the numbers to the right represent the risk of stillbirth at any point between 37 and 41 weeks of pregnancy.

Risk of stillbirth* at any point between 37 and 41 weeks of pregnancy		
During a first pregnancy	Women under 35 years	About 4 in 1000
	Women 35 to 39 years	About 6.5 in 1000
	Women 40 years and older	About 9 in 1000
During a second, third, fourth (or later) pregnancy	Women under 35 years	About 1 in 1000
	Women 35 to 39 years	About 2 in 1000
	Women 40 years and older	About 3 in 1000

Are there risks if my labour is induced?

benefits of inducing labour outweigh the risks of waiting for labour to start on its own. For example, if you have high blood pressure that is causing problems for you or your baby, using medication to start your labour may cause fewer problems than if your pregnancy were to continue. In healthy women with healthy babies, the benefits of induction are less certain.

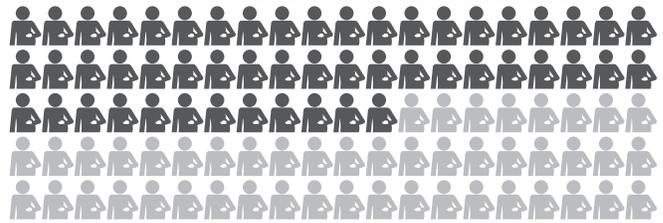
Although the SOGC's opinion is that women 40 and over should be cared for differently than younger women, no research has been done to show that early induction of labour will reduce the small (but increased) risk of stillbirth in women 40 and older. That's partly because researchers aren't sure why stillbirth is more likely to occur as age increases.

The interventions used to stimulate labour and birth may have their own risks. If you have an induction you may be more likely to need a C-section or an assisted vaginal delivery (with forceps or vacuum). Birth numbers from Ontario show that women who are 40 and older are more likely to have a C-section, whether the labour is induced or starts on its own. Women who are induced have higher rates of C-section than women whose labours start naturally.

It's difficult to draw firm conclusions from these birth numbers, since the women who were induced may have been different from the women whose labours started naturally. For example, the women who were induced may have been more likely to have medical conditions (like gestational diabetes) that caused their caregivers to recommend induction and may have made a C-section more likely to occur.

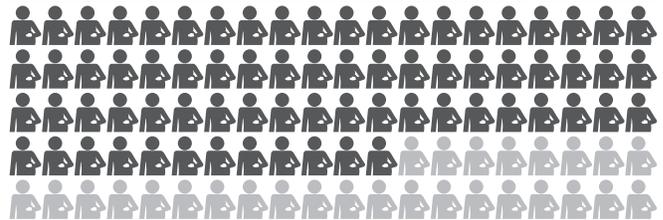
Although we know that in Ontario, women who have an induction are more likely to have a C-section, research studies that looked at the connection between induction and C-section in a different way have found different results. Studies that looked at women of all ages who had healthy pregnancies and were chosen at random to have an induction or continue their pregnancies suggest that women who are induced at or after their due dates

For every 100 Ontario women 40 and over who gave birth in hospital and were induced



there were 52 vaginal births

For every 100 Ontario women 40 and over who gave birth in hospital and whose labour started naturally



there were 72 vaginal births

are **not** more likely to have a C-section. This is confusing because there is conflicting information! What we do know is that despite what the research suggests, women in Ontario who are 40 and over and have had inductions of labour are more likely to have C-sections than women whose labour was not induced.

Babies born between 37 and 39 weeks are usually healthy, but they are more likely than babies born at 39 weeks and later to have problems that require them to be admitted to the neonatal intensive care unit. We also don't know whether using early induction of labour to reduce the risk of stillbirth will outweigh these risks.

What are my choices if I am 40 or over and my due date is coming up?

Your midwife will help you to make sense of all these statistics and help you to understand these risks for your own pregnancy. Different people will make different choices based on their own values and preferences. Your midwife may have a specific recommendation for you based on what's happening in your pregnancy.

Your choices about monitoring are to

- start monitoring your baby's well-being earlier, at around 39 weeks;
- wait to start monitoring until a later date (around 40 or 41 weeks); or
- not do this monitoring at all.

Your choices about induction are to

- have an early induction of labour (at around 40 weeks);
- have an induction at a later date (around 41 or 42 weeks); or
- wait for labour to start on its own.

Other things you can try that may help to encourage labour

There are several non-medical approaches that midwives and their clients sometimes use to encourage labour to start sooner. One is called a "stretch and sweep." During a stretch and sweep your midwife puts her fingers into the vagina and examines and stretches the cervix, sweeping her fingers around the inside of the cervix. Other methods used to encourage labour include castor oil, acupuncture, homeopathy, nipple stimulation and herbs. Little research has been done to test how well these methods work or in what circumstances they are best used. Talk to your midwife if you would to know more about alternative ways to encourage labour to start.

What we know

- Most women who are pregnant and 40 and older have healthy babies.
- Health problems (such as diabetes or hypertension) or pregnancy complications occur more frequently in women 40 and over.
- While stillbirths are more likely to occur in older women, the overall risk of stillbirth is low. Between 39 to 40 weeks of pregnancy, stillbirths are thought to occur in about 2 of every 1000 pregnancies in women 40 and over compared to 1 of every 1000 pregnancies in women under 35.
- The risk of stillbirth for women age 40 and over at 39 weeks of pregnancy is similar to the risk of stillbirth a women under 30 has at about one or two weeks after her due date. This is why some care providers suggest that monitoring of the baby's well-being and induction of labour be considered earlier in pregnancy in women age 40 and older.
- The risk of stillbirth increases with maternal age even in healthy and uncomplicated pregnancies. This risk is further increased if there are also health problems and/or pregnancy complications.
- Stillbirth risk is higher with first pregnancies (this is true for first pregnancies regardless of the mother's age).
- Birth numbers from Ontario show that women 40 and over whose labours were induced were more likely to have C-sections.

What we don't know

- We don't know why the chances of having a stillbirth increase with maternal age.
- There is no research that shows that inducing labour earlier will reduce the rate of stillbirth in women 40 and older.

Questions? Talk to your midwife

These kinds of choices are difficult to make and may depend on your own preferences or personal health history. You midwife can help you sort out how you feel about the options that are available to you and help you make a plan that's right for you and your family. If it helps, you can write questions and concerns below and bring them to your next appointment.



Booklet 4

Life After Birth



Section 1: Your new baby



Normal Newborn Behaviour

Newborns look and act differently than older babies and children, as they are adjusting to life outside the womb. This handout is to help you figure out what is normal and what to do if signs arise that may indicate illness.

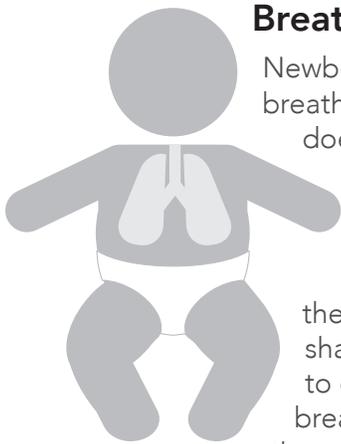
What to expect in the first few days	
Breathing	<ul style="list-style-type: none">Your baby may breathe in clusters—there may be times when your baby's breathing seems shallow and rapid. At other times your baby's breathing may seem deep or slow.Your baby's breathing may be irregular.
Colour	Your baby may get: <ul style="list-style-type: none">blue/purple feet and hands in the first 24 hours.blotchy and red when cold or crying.mild jaundice (yellow face) after 24 hours.
Temperature	Normal temperature range: Armpit 36.5°C to 37.5°C (97.7°F to 99.5°F)
Feeding	<ul style="list-style-type: none">After the first 24 hours, your baby should eat every two to four hours, eight to 12 times per day.Your baby will usually feed for a minimum of 20 minutes, though longer is very common. A satisfied baby will detach from the breast after finishing a feed.Your baby may cluster feed (feed many times in a row) and then have a longer stretch without feeding.
Diapers	<ul style="list-style-type: none">Day 1 = 1 wet diaperDay 2 = 2 wet diapersDay 3 = 3 wet diapersYour baby's stool will appear black-greenish (meconium) for the first couple of days, until your colostrum (thick, sticky and yellowish first milk) transitions to mature milk.Once mature milk comes in (between third and fifth day), expect six to eight wet diapers a day and two or more stools that are liquid yellow, green or brown. Stools that look 'seedy' are normal.

It is important to watch your newborn for any unusual behaviour during the first hours and days of his or her life. In very rare circumstances, babies can develop an infection from bacteria such as Group B Streptococcus (also called GBS), which can cause serious illness. The signs of illness from GBS are most likely to occur within the first 24 hours, but sometimes occur later. It is important for all parents to know what is within the range of normal newborn behavior and when you should contact your midwife or 911.

This document provides client-friendly information based on the Association of Ontario Midwives' *Clinical Practice Guideline No. 16: Group B Streptococcus: Postpartum Management of the Neonate*. It is designed to help you better understand some of the considerations and choices you may face while receiving care from your midwife. It is not intended to replace the informed choice discussions that you and your midwife will have. If you have any questions, concerns or ideas after reading over this document, please share them with your midwife.

Behaviour

Your baby will spend his or her early days and weeks in different states: deep sleep, light sleep, drowsy, quiet alert, active alert, crying. While newborns sleep about 16 hours out of every day, their sleep patterns are unpredictable; they may sleep for a few minutes or a few hours at a time. Babies should always be put to sleep on their backs. Because your baby's stomach is so tiny at this age, he or she needs to wake to feed often. In the first days and weeks, your baby should sleep for stretches no longer than four to six hours in a 24-hour period without waking to feed. If your baby is sleeping for a long period, wake your baby up and try to feed him or her. Some babies are difficult to wake; if they don't wake up with your first attempt, try again in half an hour. An effective way to wake your baby is to undress him or her, change their diaper and talk to them. It is normal for it to take a while for babies to latch to the breast. Be patient! If your baby seems unusually sleepy and uninterested in feeding upon waking, try again in 30 minutes or wipe a cool cloth on their face to help wake them up.



Breathing

Newborns often have irregular breathing patterns. Their breathing does not look or sound like an adult's. At times, newborn babies will breathe progressively faster and deeper, and at other times their breathing is more slow and shallow. It is normal for babies to occasionally pause their breathing for 10 seconds and then start up with a deep breath.

It is not normal for a baby to gasp for breaths or pant (quickly breathe) for 10 minutes or more. Babies make lots of different strange sounds and faces, and it can be difficult to know what is charming and normal and what should be concerning. It is normal for newborns to sound like a cat coughing up a hairball as they try to bring up mucous; they may also have bubbles at their mouths.

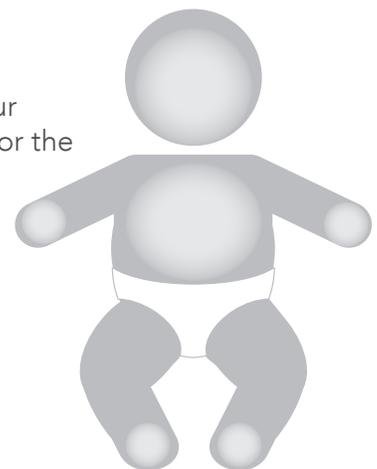
Contact your midwife if you notice any of these signs that your baby is having difficulty breathing:

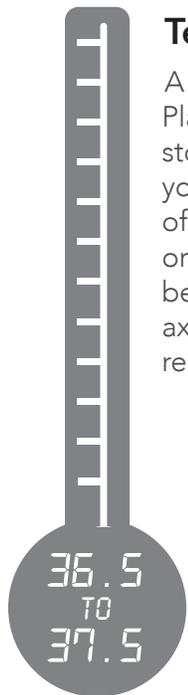
- **Your baby's nostrils widen as he or she breathes (nasal flaring) for longer than a few minutes.**
- **Your baby makes grunting sounds with each breath; this lasts longer than a few minutes.**
- **The skin around your baby's ribs or at the base of the throat pulls in sharply with each breath.**
- **Your baby's breathing stops for more than 10 seconds.**

Colour

A pink chest and face shows that your baby is getting enough oxygen. Your baby's hands and feet may be blue, purple or grey and cool to the touch for the first few days – this is normal. Your baby's skin may get blotchy and red after crying or when cold.

If the skin on your baby's face or chest becomes blue or grey please call 911 and contact your midwife immediately.





**Normal
temperature
in °C**

Temperature

A newborn should be dressed in one layer more than you are comfortable wearing. Placing your baby skin-to-skin (holding your bare baby against your bare chest or stomach), covered by a light blanket, will help them to regulate their temperature. If you want to know if your baby is too hot or too cold, feeling their chest or the back of their neck will give you a more accurate idea of their temperature than their hands or feet. It is normal for a baby's hands and feet to be cool for the first few days. The best way to take your baby's temperature is under the armpit (this is also known as an axillary temperature). Ear thermometers are not accurate for newborns and are not recommended. Normal armpit temperature is 36.5°C to 37.5°C (97.7°F to 99.5°F).

- If your baby's temperature is over 38.0°C (100.4°F), please page your midwife.
- If your baby's temperature is over 37.5°C (99.5°F), remove a layer of clothing and take his or her temperature again after 30 minutes have passed.
- If your baby's temperature is over 37.5°C (99.5°F), and you have taken the above actions, please page your midwife.
- If your baby seems cold or his or her temperature is less than 36.5°C (97.7°F), place your baby skin-to-skin and cover you and your baby with a blanket. Take his or her temperature again after 30 minutes have passed.

Feeding

If you are breastfeeding, putting your baby to the breast often gives your baby valuable nutrient-rich colostrum (thick, sticky and yellowish first milk), helps establish your milk supply, and helps both you and your baby learn how breastfeeding works. Your baby will need to eat at least every two to four hours (sometimes much more often), usually for a minimum of 20 minutes at a time. It can sometimes take time for you and your baby to learn how to breastfeed. Spending time together skin-to-skin will help encourage your baby to latch and feed. Your baby may spit up after eating, usually small amounts of milk come out and dribble down his or her chin.

A good online resource for breastfeeding is:
<http://www.breastfeedinginc.ca>



Diapers

Your midwife may ask you to keep track of the number of wet and soiled diapers your baby produces. A disposable diaper feels heavier if it's wet. Many diaper brands today have a urine indicator that turns blue in the presence of a certain amount of urine. Not all diapers do, and some pees in the first few days may be too small to make this happen. If you have trouble telling when the diaper is wet, put a tissue in the bottom of the clean diaper. Sometimes babies will have what looks like "brick dust" in their diapers in the first few days, a pinkish or orange coloured spot. These are called urate crystals, and they are normal. A baby girl may have a small amount of bloody discharge from her vagina, this is a response to mother's hormones and it is normal.

Muscle Tone

A newborn needs to be supported when held, but newborn babies should not feel completely limp in your arms. A newborn should display strong, well-flexed movements of his or her arms and legs.

Umbilical Cord

As your baby's cord begins to fall off (anytime in the first 14 days) it may begin to look "goopy" and a small amount of blood or discharge may come off on your baby's diaper or clothing. Your baby's cord may also have a strong smell; this is normal. It is not normal for the skin around the base of the umbilical cord (on your baby's stomach) to become red and infected-looking. If it does, contact your midwife.

Contact your midwife if:

- Your baby is not feeding and seems lethargic (having trouble waking up) and you can't wake your baby to feed. One long sleep (4-6 hours) in every 24 hour period is ok.
- Your baby's armpit temperature is above 37.5°C (99.5°F) or below 36.5°C (97.7°F) and your baby is not wearing too much or too little clothing.
- Your baby breathes rapidly (more than 60 breaths every minute) for longer than 10 minutes (and your baby is not crying, being active or overdressed).
- Your baby has difficulty breathing, which may look like this:
 - » nasal flaring and grunting that lasts longer than a few minutes;
 - » your baby's skin seems to be pulling in sharply around the ribs or base of the throat when he or she breathes.
- Your baby is very irritable.
- Your baby is crying almost all the time and the crying is high-pitched.
- Your baby is limp and not interacting when awake.
- Your baby has repeated, projectile vomiting (more forceful than spitting up).
- You see a brick dust colour in your baby's diaper beyond the third day of life.
- Your baby has not had a wet diaper in a 24 hour period.
- You are worried about your baby for any other reason.

Call 911 and your midwife if:

- Your baby's skin colour changes to blue, grey or pale (blue hands and/or feet are normal in the initial days).
- Your baby's breathing stops for more than 10 seconds.

The development of this document was generously supported by the Ministry of Health and Long-Term Care

Your New Baby

Keep in mind that newborns are used to having someone's heart beat and voice nearby. Cuddle and rock and sing to your baby. Respond to your baby's cues to be held, fed or changed. Your baby will learn that their need for love, food and fun will be met and a sense of trust will form. You *cannot* spoil a newborn!

	What is normal	When to page
Diapers	<ul style="list-style-type: none"> One poopy (stool) diaper in the first 24 hrs. Poops will change to look yellow and seedy as the milk comes in. After Day 1, baby may go >24h without pooping. One wet diaper per day of life in the first 5 days: 1 on Day 1, 2 on Day 2, 3 on Day 3 and so on until Day 5 when babies should have at least 5-6 heavy wet diapers a day (24 hours). Some orange-red staining called "brick dust" (uric acid crystals) can be normal until your milk comes in. Genitals may be enlarged. Baby girls may have a period-like or mucousy discharge from the vagina for as long as 8 days after the birth. The foreskin on a baby boy's penis should never be pulled back. 	<ul style="list-style-type: none"> No pee or poo in the first 24 hrs
Feeding	<ul style="list-style-type: none"> <u>In the first 24 hrs</u>, babies may sleep a lot and may feed every 4-5 hrs. They may spit up a lot of mucus. <u>After the first 24 hours</u>, babies should feed 8-12 times in 24 hours (approx every 2-3h). Spitting up is normal. Between Day 2 and 3, many babies become very fussy and want to nurse often. This is often normal and they are working to bring the milk in. They should settle once the milk is in. 	<ul style="list-style-type: none"> After 24 hrs, baby becomes very lethargic – unable to wake for feeds. Bright green or repeated projectile vomiting
Skin	<ul style="list-style-type: none"> Bluish, cool hands and feet (called acrocyanosis) Yellowing of the skin (called jaundice) is normal after the first 24h. White spots on nose (called milia) Baby's skin may peel and flake – use unscented natural oil sparingly on dry skin. 	<ul style="list-style-type: none"> Blue centrally (face/lips/genitals) Jaundice in 1st 24hr
Temperature	<ul style="list-style-type: none"> Babies should wear a snug hat for the first 24 hours and one more layer of clothing than we do. Normal temperature is between 36.4-37.4°C (97.5-99.3°F), taken under the arm with a digital thermometer. Babies can be sick with high and/or low temperature. 	<ul style="list-style-type: none"> High or low temperature

	What is normal	When to page
Umbilical cord stump	<ul style="list-style-type: none"> No special cleaning is needed, just fold the diaper below it. The stump will dry, become black and smell bad before falling off in the first 2 weeks. You may notice a small spot of blood on the baby's clothing/diaper and the belly button may be moist in the centre – this is normal. 	<ul style="list-style-type: none"> Bleeding from the cord like you've cut your finger Skin around the base of the cord becomes more and more 'angry' red.
Breathing	<ul style="list-style-type: none"> Your baby breathes differently than you; they breathe quickly and take pauses. They mostly breathe through their nose. 40-60 times per minute 	<ul style="list-style-type: none"> Nostrils flaring open with each breath Breathing quickly over several minutes Baby appears to be working hard to breathe Grunting with every breath
Weight loss/gain	<ul style="list-style-type: none"> Most babies lose weight in the first few days after birth. After this early weight loss, babies should gain at least ½ ounce per day. 	

To page your midwife call 1-866-860-3712

Section 1 Colic and Crying

Link to:

https://www.caringforkids.cps.ca/handouts/colic_and_crying

for more information

Section 1 Guelph Ontario Early Years Centre

Free and fun activities for children, birth to six years, and their parents or caregivers

Link to:

<http://guelphchc.ca/early-years-centre/>

for more information

Section 1 – Immunization Schedule

Link to:

<http://www.health.gov.on.ca/en/pro/programs/immunization/schedule.aspx>

http://www.health.gov.on.ca/en/public/programs/immunization/static/immunization_tool.html

for more information

Section 1 – The Period of Purple Crying

Did you know your baby would cry like this?

Link to:

<http://purplecrying.info/>

for more information

Section 2: Breastfeeding

Section 2 – Breastfeeding Resources

For breastfeeding supports near you visit....

Link to:

<http://ontariobreastfeeds.ca/>

for more information

Section 2 – Breastfeeding

Link to:

<https://www.caringforkids.cps.ca/handouts/breastfeeding>

for more information

Baby's Age

1 DAY

2 DAYS

3 DAYS

1 WEEK

4 DAYS

5 DAYS

6 DAYS

7 DAYS

2 WEEKS

3 WEEKS

How Often to Breastfeed?

Per day, on average over 24 hours



At least 8 feeds per day. Baby is sucking strongly, slowly, steadily and swallowing often.

Baby's Tummy Size



Size of a cherry



Size of a walnut



Size of an apricot



Size of an egg

Wet Diapers:

How Many, How Wet

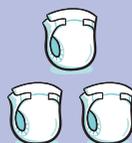
Per day, on average over 24 hours



At least 1
WET



At least 2
WET



At least 3
WET



At least 4
WET



At least 6

HEAVY WET WITH PALE YELLOW OR CLEAR URINE

Soiled Diapers:

Number and Colour of Stools

Per day, on average over 24 hours



At least 1 to 2
BLACK OR DARK GREEN



At least 3
BROWN, GREEN, OR YELLOW



At least 3 large, soft and seedy
YELLOW

Baby's Weight

Most babies lose a bit of weight in the first 3 days after birth.

From day 4 onward, most babies gain weight regularly. Babies should return to birth weight or more by the age of 10 - 14 days. If parents have any concerns with their baby's weight gain patterns encourage them to consult their health care provider.

Growth Spurts

Babies often vary the length of time between feeding with some feedings being closer together and others being farther apart. Babies will often feed for varying lengths of time at the breast. Sometimes feedings may be shorter and other times longer. Babies should feed 8 or more times in 24 hours.

Other Signs

Baby should have a strong cry, move actively and wake easily. Mother's breasts feels softer and less full after breastfeeding.

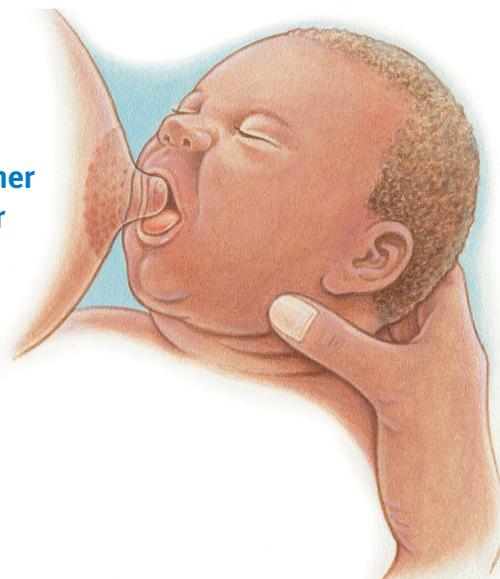
Inform parents to get advice, help and support from:

- Their health care provider.
- Telehealth Ontario's specialized breastfeeding support line at 1-866-797-0000 or TTY at 1-866-797-0007.
- Bilingual Online Ontario Breastfeeding Services directory at www.ontariobreastfeeds.ca

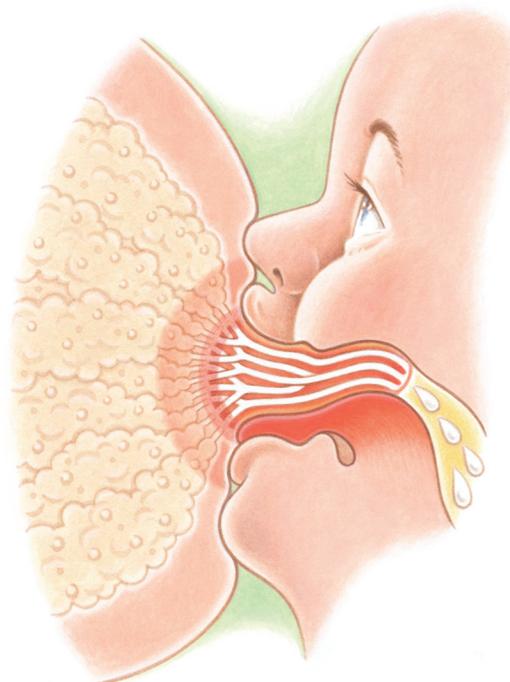
Breastfeeding

GUIDELINES FOR CONSULTANTS

Observe the mother breastfeeding her baby. This is the key to prevention and early identification of breastfeeding problems.



Assess positioning and proper alignment of the mother and baby. Ensure maternal comfort.



Assess the latch. The baby's mouth is wide open, the lips are flanged and the chin is pressed into the breast. Check for signs that the baby is drinking.

Assess the baby. The baby has the right number of wet and soiled diapers, a moist mouth, bright eyes, is alert, and gaining weight steadily.

If breastfeeding problems persist, reassess and try current evidence-based management strategies. Refer to someone skilled with helping breastfeeding mothers and consult with a physician as needed.

METHODS TO INCREASE MOTHER'S MILK SUPPLY AND BABY'S INTAKE

- Correct position and latch
- Increase number of feeds
- Use breast compressions during feedings
- Switch breasts several times in the same feeding
- Express milk after feeds

MEDICAL INDICATIONS FOR SUPPLEMENTATION

The WHO provides a complete listing of medical indications for supplementation at the following link: www.who.int/nutrition/publications/infantfeeding/WHO_NMH_NHD_09.01/en/

Medical indications for supplementation are also found in the Breastfeeding Committee for Canada's document titled Baby-Friendly Initiative 10 Steps and WHO Code Outcome Indicators for Hospitals and Community Health Services. The link to this document is: <http://breastfeedingcanada.ca/BFI.aspx>

ACCEPTABLE BREASTFEEDING SUPPLEMENTS

- First Choice: Fresh breast milk from baby's mother**
Second choice: Previously expressed breast milk from baby's mother
Third choice: Pasteurized donor breast milk
Fourth choice: Commercial cow milk based infant formula

PROVIDING BREASTFEEDING SUPPLEMENTS

When supplementation is required, one of the following techniques may be used:

- Cup, spoon, dropper or finger feeding
- Supplemental nursing device at the breast
- Bottle feeding

Encourage mothers to hold their baby skin-to-skin as soon as possible after birth for continuous and prolonged periods of time. If they cannot hold their baby skin-to-skin, encourage a support person chosen by the mother to do this.

**best start
meilleur départ**
Resource Centre/Centre de ressources

by/par health **nexus** santé

This document has been prepared with funds provided by the Government of Ontario.

www.beststart.org
2017

Diapers of the Breastfed Baby

Looking at a baby's poop and pee can help you tell if your baby is getting enough to eat.

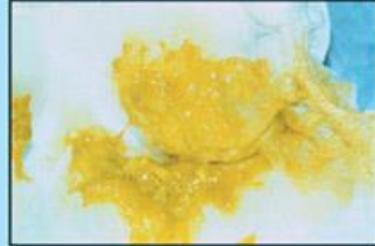
The baby's poop should change color from black to yellow during the first 5 days after birth.



The baby's first poop is black and sticky.



The poop turns green by Day 3 or 4.



The poop should turn yellow by Day 4 or 5.



Poop can look seedy.



Poop can look watery.



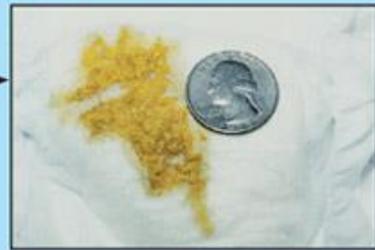
Illness, injury, or allergies can cause blood in poop. Call Doctor.



Babies make some large and some small poops every day.

Only count poops larger than this. →

By Day 4, most breastfed babies make 3 or 4 poopy diapers every day.



← On Day 1 or 2 some babies have orange or red pee.

By Day 3 or 4, breastfed babies should make 3 or 4 wet diapers with pee that looks like clear water.

A wet diaper is as heavy as 3 tablespoons of water. →



Breastfeeding Tips

Early Start

- Put baby to the breast to nurse as soon as possible after birth. Babies placed skin-to-skin often search for the breast and start suckling.

How Often?

- Baby needs to nurse at least 8-12 times in 24 hours. The more you nurse, the more milk you will have.
- Frequent breastfeeding stimulates milk production. Breasts do not need to “fill up” between feedings.



Latching On

- Sit up comfortably (don't lean over baby).
- Hold baby very close to you with your arm. Pull baby's feet in close to your other side, so baby is tucked in just under the breasts.
- Baby's face and body are turned toward you.
- Baby's chin is leading and nose is tilted back in a sniffing position.
- Steady your breast with fingers if needed.
- Baby's bottom lip and chin are against breast and top lip brushes nipple as he opens wide.
- Quickly pull baby closer into you to latch on.



- Baby's mouth will cover a large part of the darker skin especially with the lower lip.

Colostrum

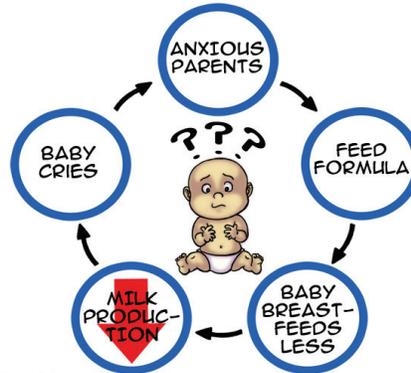
- Produced in first few days.
- Small quantity is perfect for baby's small stomach (teaspoons, not ounces).
- Protects against infection.
- Clears meconium (first stools)—Helps reduce jaundice.
- Satisfies baby's thirst and hunger.

Night Feedings are Important

Human milk is made to nourish baby's system both day and night. Night feeds boost mother's milk production hormones. Some babies cluster nurse in the evening then have a longer sleep. Others feed at regular intervals through the night.



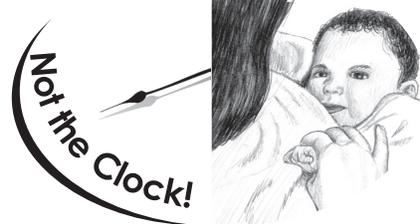
Why Avoid Bottles or Formula?



Engorgement

- Cold compresses or cabbage leaves between feedings to reduce swelling.
- Warm showers or compresses before feeding.
- Soften breasts by expressing some milk.
- Nurse often!

Watch Your Baby



Enough Milk?

After milk comes in (~day 4)

- At least 6 really wet diapers in 24 hours.
- 3-5 bowel movements per day mean baby is getting enough milk.

Milk Too Weak?

Never! Milk changes throughout the feeding. Express one drop of milk before and after a feeding and see the difference. Babies take a balance through the day.

Too Much Milk

- Offer only one breast at a feeding.
- Offer the same breast if baby wants more soon after a feeding.
- Feeding against gravity may slow the flow.

Sore Nipples

Remember: Correct positioning and latch-on are most important for preventing sore nipples.

- Break suction before taking baby off the breast.
- Offer the least sore breast first.
- Avoid plastic against nipples.
- Use only plain water for washing.
- Check with an LLL Leader for more help.

Blocked Ducts

If milk flow becomes blocked, a tender lump may appear in the breast.

- Apply heat
- Get plenty of rest
- Nurse frequently
- Check latch and try different positions
- Gentle, light massage
- See doctor if it lasts more than a day



Growth Spurts

Baby may nurse more often at times to build milk supply. These “frequency days” happen about 3-4 times in the first 3 months.

Back to Work?

- Find out about facilities at work for expressing and storing your milk.
- Delay starting work until after milk supply is well established.
- Pump or express milk at work.
- Take milk home for the next day's feedings.
- Breastfeed frequently when you're with baby.



La Leche League Canada

www.LLCC.ca

©2015 La Leche League Canada • P.O. Box 700 • Winchester, Ontario • K0C 2K0
Tel. 613-774-4900 • E-mail adc@LLCC.ca • Breastfeeding Referral Service 1-800-665-4324
La Leche League Canada is a charitable organization — Registration Number 11900 3812 RR0002

No. 456 – 2015

Engorgement

 ibconline.ca/information-sheets/engorgement

More than mild engorgement in the breasts is usually a sign that the breastfeeding is not going very well. It is due to the combination of milk stasis (the milk is not coming out) and oedema (swelling due to water retention in the area). Severe engorgement about the third or fourth day after the baby is born can usually be prevented by getting the baby latched on well and drinking well from the very beginning. See the information sheets *Breastfeeding—Starting Out Right* and *The Importance of Skin to Skin Contact*, and *Protocol for Managing Breastmilk Intake*. See also nbc.ca for videos to help use the *Protocol for Managing Breastmilk Intake*. If you do become engorged, please understand that engorgement goes away within 1 or 2 days even without any treatment, but can be uncomfortable during that time. Massaging the breasts in a downward motion is not recommended as a treatment for engorgement. Continue to breastfeed the baby, making sure he gets on well and nurses well and the engorgement will resolve. However, if you should get engorged to the point where the baby is not able to take the breast, or if there is more than minimal discomfort in the breast and/or areola (the coloured part surrounding the nipple), then there is a simple way to temporarily move swelling away from the areola:

How to do REVERSE PRESSURE SOFTENING

Developed by K. Jean Cotterman RNC-E, IBCLC

Try this if pain, swelling, or fullness creates problems during the early days of learning to breastfeed. The key is making the areola very soft right around the base of the nipple, for better latching.

- A softer areola protects the nipple deep in baby's mouth helping his tongue remove milk better. Mothers say curved fingers work best. (Fig. 1 or 2)
- Press inward toward the chest wall and count slowly to 50.
- Pressure should be steady and firm, and gentle enough to avoid pain.
- If mom wishes, someone else may help, using thumbs (Fig. 5).
- (For long fingernails, try another way shown below.)
- If breasts are quite large or very swollen, count very slowly, with mom lying down on her back. This delays return of swelling to the areola, giving more time to latch.
- Soften the areola right before each feeding (or pumping) till swelling goes away. For some mothers, this takes 2-4 days.
- Make any pumping sessions short, with pauses to re-soften the areola if needed.
- Use medium or low vacuum, to reduce the return of swelling into the areola.



Fig. 1
One-handed "flower hold"
Fingernails short,
Fingertips curved placed where
baby's tongue will go

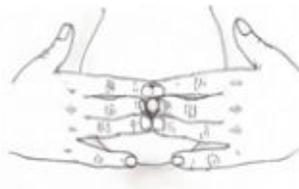


Fig. 2
Two-handed, one-step method
Fingernails short,
Fingertips curved each one
touching the side of the nipple



Fig. 3
You may ask someone to help
press by plading fingers or
thumbs on top of yours



Fig. 4
Two-step method, two hands using
2 or 3 straight fingers each side,
first knuckles touching nipple.
Move ¼ turn, repeat above &
below nipple.



Fig. 5
Two-step method, two hands using
straight thumbs, base of thumbnail
even with side of nipple.
Move ¼ turn, repeat, thumbs
above & below nipple



Fig. 6
Soft-ring method.
Cut off bottom half of an
artificial nipple to place on
areola to press with fingers

Illustrations by Kyle Cotterman, Reverse Pressure Softening by K. Jean Cotterman © 2008

Cabbage Leaves and Compresses

Cabbage leaves may also be used to help decrease the engorgement, as can ice packs and cold compresses. Some studies suggest cabbage may accomplish this more quickly. If you are unable to get the baby latched on, start cabbage leaves, start expressing your milk, and give the expressed milk to the baby by spoon, cup, finger feeding or eyedropper and get help quickly.

1. Use green cabbage
2. Crush the cabbage leaves with a rolling pin if the leaves do not take the shape of your breast.
3. Wrap the cabbage leaves around the breast and leave on for about 20 minutes. Twice daily is enough. It is usual to use the cabbage leaf treatment less than two or three times. Some will say to use the cabbage leaves after each feeding and leave them on until they wilt. Some are concerned that using them too often will decrease the milk supply
4. Stop using as soon as engorgement is beginning to go away and you are becoming more comfortable.
5. You can use acetaminophen (Tylenol™, others) with or without codeine, ibuprofen, or other medication for pain relief. As with almost all medications, there is no reason to stop breastfeeding when taking analgesics

6. Ice packs also can be helpful
7. Some women get a large lump in the armpit about 3 or 4 days after the baby's birth. Cabbage leaves may be used in that area as well to help the lump go away.

Epsom salts

(Please note: We have not had much experience with this approach but have heard some good things about it. We include it to provide an alternative to the above). (This technique is adapted from handout Patient's Treatment for Engorgement, by A. Stolz, with notes from Lawrence, R; Ingle, B; Hunt, A)

The breasts may be soaked in a tub or basin of epsom salts for a few minutes to help with engorgement.

1. Fill a small container or basin with warm water, deep enough that the breast can be submerged (You may need about 1 litre of water, or more).
2. Place 1–2 handfuls (what fits into the palm of the hand or about 30 to 60 grams), of Epsom's salts crystals (magnesium sulphate, MgSO₄) and dissolve before putting the breast in the water
3. Mother can lean over the basin so her breasts soak in the solution
4. This should not be painful and any cuts or trauma can be covered with All Purpose Nipple Ointment
5. Leave soaking in very warm water until water is cool or at least 5-10 minutes
6. Wash off solution with plain water after, to wash away salty taste for baby
7. The salts may act as a diuretic for excess fluids in the breast
8. Repeat before each feed or 3 or more times a day as Mother wishes
9. Usually good results can be felt in 24 hours
10. Mother can do this treatment for up to 3 days if desired

The information presented here is general and not a substitute for personalized treatment from an International Board Certified Lactation Consultant (IBCLC) or other qualified medical professionals.

This information sheet may be copied and distributed without further permission on the condition that it is not used in any context that violates the WHO International Code on the Marketing of Breastmilk Substitutes (1981) and subsequent World Health Assembly resolutions. If you don't know what this means, please email us to ask!

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Questions or concerns? [Email Dr. Jack Newman](#) (read the page carefully, and answer the listed questions).

[Make an appointment at the Newman Breastfeeding Clinic.](#)

Is Thrush Causing My Sore Nipples?

Persistent nipple pain in the early weeks of breastfeeding, or nipple pain that appears after several weeks or months of pain-free nursing, may be caused by thrush which is a yeast infection of the nipples. Additional symptoms can include:

- Itchy or burning nipples that appear pink or red, shiny, flaky, and/or have a rash with tiny blisters.
- Cracked nipples.
- Shooting pains in the breast during or after feedings.
- Intense nipple or breast pain that is not improved with better latch-on and positioning.
- Deep breast pain.

You may be at higher risk for developing thrush if you or your baby has had a recent course of antibiotics, your nipples are cracked or damaged or you are taking oral contraceptives or steroids (such as for asthma).

Be sure to examine other causes of nipple and breast pain. Positioning and latch-on problems are the most common causes of pain.

Thrush can be very difficult to treat. It is essential for both you and your baby to be treated for thrush as not only is it easily spread but it also thrives in warm moist environments such as your baby's mouth and your nipples. According to the BREASTFEEDING ANSWER BOOK, Nystatin is considered to be less effective than other treatment options. There are other medication options, including gentian violet and the over-the-counter treatment Miconazole. There is also an oral medication that can be given for resistant cases. Check with your midwife about these options.

After treatment for thrush begins, the symptoms may appear to get worse for a couple of days before improving. While the pain continues, offer your baby short, frequent feedings, beginning on the least painful side. Be sure to rinse your nipples and let them air dry after each feeding.

If your baby uses a pacifier or bottle nipple, they should be boiled for 20 minutes a day and replaced every week. Don't forget to boil all breast pump parts that come in contact with milk, if you are pumping. (The milk you pump during a thrush outbreak can be fed to your baby but not frozen. Freezing breast milk does not kill the yeast in it.) Toys that go in your baby's mouth should be washed with hot, soapy water.

In addition to the medical treatment, there are other steps you can take.

- Wash all bras, bra pads, nightgowns, etc (anything that comes in contact with your nipples) in HOT water with bleach and dry on hot in the dryer or in the sun.
- Rinsing your nipples with a vinegar and water solution (1 tablespoon vinegar to 1 cup water) after every feeding is helpful. Use a fresh cotton ball for each application and mix a new solution every day.
- Some women add acidophilus supplements (40 million units per day) to their diet.
- Some women find that reducing yeast and sugar in their diet helps.

These home remedies can be effective but they should be in addition to medication, not instead of it.

Be careful with hand washing, especially after diaper changes. Babies can get yeasty diaper rashes very easily. If you use cloth diapers or nursing pads, the yeast can be passed through the laundry.

Candida Protocol (Jack Newman/IBC)

Whatever the cause of sore nipples in your case, it is important to get the best latch possible when you have sore nipples. Even if the cause of sore nipples is Candida (yeast, thrush), improving the latch can decrease the pain. With the “ideal” latch, the baby covers more of the areola (brown or darker part of the breast) with his lower lip than the upper lip. Note also that the baby's nose does not touch the breast. Of course, it is not always easy to change the latch of the baby older than 3 or 4 months, but it is worth a try. Also see our videos showing how to latch on a baby. For a fuller description of how to get the baby to latch on well, see also the hand-out *When Latching*.

Diagnosing Candida albicans (yeast)

An infection due to Candida albicans can be difficult to diagnose and mothers should not attempt to do so on their own. The pain due to Candida albicans is often confused with pain due to poor latching and/or pain due to vasospasm/Raynaud's phenomenon. Furthermore, more than one cause of sore nipples may be the source of your pain. A good practitioner will help you to differentiate between these conditions.

For Nipple Pain: Treatment applied to the nipple(s)

- APNO (All Purpose Nipple Ointment) is a compounded ointment mixed from the following ingredients:
 - Mupirocin 2% ointment (15 grams)
 - Betamethasone 0.1% ointment (15 grams)
 - To which is added miconazole powder so that the final concentration is 2% miconazole. This combination gives a total volume of just more than 30 grams. Clotrimazole powder (not as good as miconazole in our opinion, as it often causes irritation) or fluconazole powder to a final concentration of 2% may be substituted for miconazole powder if miconazole powder is unavailable, but both exist (the pharmacist may have to order it in, but many compounding pharmacies almost always have it on hand). Using powder gives a better concentration of antifungal agent (miconazole or clotrimazole) and the concentrations of the mupirocin and betamethasone remain higher
- We no longer use nystatin ointment in our recipe and haven't for over 10 years.
- Sometimes adding ibuprofen powder so that the final concentration of ibuprofen is 2% helps when the regular ointment does not. We do not prescribe this one routinely because it is even more difficult to get it made up and it is more expensive because of the extra ingredient. Furthermore, if the regular APNO works, as it usually does, then adding an extra ingredient is wasteful.

To find a compounding pharmacy near you in Canada and the US, go to <http://www.iacprx.org>. Then click “For Patients, Pet Owners” in the red box on the left side of the page, then click “Finding a Compounding Pharmacist Near You”. You will need to sign in. Canadians: make sure that you leave a space between the two sets of 3 letters in the postal code: M2K 2E1, not M2K2E1.

The ointment is applied sparingly after each feeding (except the feeding if/when the mother uses gentian violet). “Sparingly” means that the nipple and areola will shine but you won't be able to see the ointment. Do not wash or wipe it off, even if the pharmacist asks you to. The APNO can be used for any cause of nipple soreness (“all purpose nipple ointments”), not just for Candida (yeast, thrush). Use the ointment until you are pain free for a few days and then decrease frequency over a few days until stopped. If you are not having less pain after 3 or 4 days of use, or if you need to be using it for longer than two or three weeks to keep pain free, get good help or advice but do not stop using the APNO.

If Not Getting Better...Add:

- Gentian violet (see the information sheet Using Gentian Violet). Actually, the gentian violet can be used along with the APNO from the very first, but it should not be used alone as it is drying and often does not work when used alone. Use once a day for four to seven days. If pain is gone after four days, stop gentian violet. If better, but not gone after four days, continue for seven days. Stop after 7 days no matter what, not because it's dangerous, but if the gentian violet hasn't helped in 7 days, it probably won't. If not better at all after four days of use, stop the gentian violet, continue with the ointment as above and seek good help. Gentian violet comes as a 1% solution in water. It also usually dissolved in 10% alcohol, as gentian violet is not soluble in pure water. This amount of alcohol is negligible, as the baby will only get a drop of gentian violet at each treatment. Apparently some pharmacists will dissolve it in glycerine instead of alcohol, if you wish. Attention US residents: 2% gentian violet, which seems to be the usual concentration found in the US, *should not* be used. The pharmacist should dilute it to 1% for you.

And/or:

- Grapefruit Seed Extract (GSE), active ingredient must be "citricidal", should be followed by, and used in conjunction with, the APNO (All Purpose Nipple Ointment). Apply diluted solution directly on the nipples. It does not need to be refrigerated. It may be covered and used until solution is finished.

Using GSE:

- Mix very well 5- 10 drops in 30 ml (1 ounce) of water.
- Use cotton swab to apply on both nipples and areolas after the feeding.
- Let dry a few seconds, and then apply "all purpose nipple ointment".
- If also using Gentian Violet, do not use GSE on that particular feed but use after all other feeds.
- Use until pain is gone and then wean down slowly over the period of at least a week.
- If pain is not significantly improving after two to three days, increase the concentration by 5 drops per 30 ml (ounce) of water. Can continue increasing concentration until 25 drops/ 30 ml of water
- If you start to get flaking, drying, or whiteness appears on the skin, substitute pure olive oil for APNO 1-3x/day after each feeding and decrease the concentration of the GSE drops. If the flaking does not get better, stop the GSE drops.
- Laundry can be treated as well: add 15-20 drops in the rinse cycle of all wash loads
- GSE may be used in conjunction with oral GSE and Probiotics

If you are not getting better and/or you have pain in the breast as well that is not responding to treatment of the nipples alone:

Add

- Oral GSE: Grapefruit seed extract (not grape seed extract). The active ingredient must be "citricidal". Use tablets or capsules, 250 mg (usually 2 tablets of 125 mg each) three or four times a day orally (taken by the mother). If preferred the liquid extract can be taken orally, 10 drops in water three times per day (though this is not as effective as the pills and the taste is quite bitter). Oral GSE can be used before trying fluconazole, instead of fluconazole, or in addition to fluconazole in resistant cases.

And/or

- Probiotics: Acidophilus with bifidus (with FOS (fructo-oligosaccharides) is okay). The mother should take 1-2 capsules (strength of 10 billion cells) 2-3x/day. The probiotics should be taken at least 1 hour apart from oral

GSE. Baby should be treated with Probiotics 2x/day for approximately 7 days (Mother may wet her finger and roll it in probiotic powder (break open a capsule), and let baby suck on mother's finger right before a feeding).

If Still Not Getting Better at All...

Add:

- Fluconazole: (see the information sheet Fluconazole) If pain continues and it is likely the problem is Candida, or at least reasonably likely, add fluconazole 400 mg loading, then 100 mg twice daily for at least two weeks, until the mother is pain free for a week. The course of treatment with fluconazole is not two weeks. The nipple ointment should be continued and the gentian violet can be repeated. Fluconazole should not be used as a first line treatment, especially if you have sore nipples. If used, fluconazole should be added to above topical and oral treatments, not used alone. Fluconazole takes three or four days to start working, though occasionally, in some situations, it has taken 10 days to even start working. If you have had no relief at all with 10 days of fluconazole, it is very unlikely it will work, and you should stop taking it. Other Medications: For deep breast pain, ibuprofen 400 mg every four hours may be used until definitive treatment is working (maximum daily dose is 2400 mg/day).

Breastfeeding Supports in Guelph

Breastmilk is the natural food for babies. It contains everything your baby needs. Health Canada recommends feeding your baby only breastmilk for the first six months. At six months, begin to introduce solid foods and continue breastfeeding for up to two years and beyond. These breastfeeding supports can help you breastfeed as long as you and your baby want.



IMPORTANT

Contact your healthcare provider or Telehealth at 1-866-797-0000 today if:

- Your baby is very sleepy and hard to wake for feedings.
- Your baby is crying and will not settle after feedings.
- Your baby does not have enough wet and dirty diapers.
- You have a concern or feel that something is not right with your baby.
- Your nipples are sore and are not getting better.
- You have a fever, chills, flu-like symptoms, or a red and painful area on your breast.
- You feel overwhelmed or not able to cope.

	Free Breastfeeding Support	How To Participate
Public Health	Breastfeeding Clinics: Public health nurses are available to answer your breastfeeding questions, help get you started, support you through challenges, and encourage you to continue to breastfeed your baby.	Shelldale Centre Clinic (drop-in): Mondays & Fridays 1 – 3:30 p.m. Public Health, 20 Shelldale Crescent For more information visit wdgpublichealth.ca .
	Let's Talk Parenting Line: Public health nurses are available to answer your questions by phone.	Call 1-800-265-7293 ext. 3616 Monday – Friday 9 a.m. – 4 p.m. wdgpublichealth.ca/LTP
GCHC	WE Breastfeed Phone Support: Trained volunteers who have breastfed offer telephone support in different languages.	Call 519-821-6638, Ext. 250 to be matched with a volunteer. Monday-Friday, 9 a.m. – 5 p.m. Guelph Community Health Centre f @WeBreastfeed
	WE Breastfeed Drop-in Breastfeeding Cafe: Trained volunteers who have breastfed are available for support.	Guelph Community Health Centre, Children's Room, Main Floor (drop-in): Wednesdays 1 – 2:30 p.m. 176 Wyndham Street N., Guelph Visit guelphchc.ca for other times and locations. f @WeBreastfeed
La Leche League	Accredited La Leche League leaders: Mother-to-mother breastfeeding information, encouragement and support. Phone support/meetings and home visits available.	Guelph Community Health Centre, Community Room, Lower Level (drop-in): Second Thursday of each month 10 a.m. – 12 p.m. 176 Wyndham Street N., Guelph Ontario Early Years Centre, 2nd Floor, Stone Road Mall, 435 Stone Rd. West Last Wednesday of each month 7 - 9 p.m. Visit www.LLCC.ca or f @LLCCGuelph or email guelphllc@yahoo.ca

Additional Free Breastfeeding Supports & Information

Speciality Pediatric and Lactation Clinic:

For a referral to Pediatrician Dr. Mantynen and Nurse Practitioner and Lactation Consultant Tara Boyes contact your doctor or midwife. Located in the Zehrs Superstore at 200 Franklin Blvd., Cambridge, 519-620-3600.

Motherisk: Information about breastfeeding and medications, drugs, and alcohol. Visit www.motherisk.org or call 416-813-6780 Monday – Friday from 9 a.m. – 5 p.m. for information and support.

Telehealth Ontario 1-866-797-0000: A free, confidential telephone service you can call for breastfeeding help from a Registered Nurse. Available 24 hours a day, 7 days a week.

Bilingual Online Ontario Breastfeeding Services:

Search for breastfeeding services across Ontario: ontariobreastfeeds.ca

Best Start Resource Centre

Visit beststart.org. Click “For Parents” then “Do you have a baby?”

Fee-for-Service Breastfeeding Services

- International Breastfeeding Centre/Newman Breastfeeding Clinic (Toronto) Call 416-498-0002 or visit www.nbci.ca to book an appointment (breastfeeding videos and information sheets also available on website).
- International Board Certified Lactation Consultant Visit www.ilca.org to find a lactation consultant in your area.
- Association of Ontario Doulas. Find a doula at ontariodoulas.org or contact regional rep. Dawn Humphrey 519-993-7103 or info@douladawn.ca.

Breast Pump Rentals

- Ontario Home Health 519-821-9519 - 66 Delhi St
- Norfolk Pharmacy 519-837-1820 - 85 Norfolk St
- Prime Care Pharmacy 519-837-4594 - Arbor Medical Centre, 1-281 Stone Rd E
- Shoppers Drug Mart 519-822-2480 - 375 Eramosa Rd
- University Square Pharmacy 519-763-3301 - 987 Gordon St (at Kortright)
- Well.ca Baby 519-763-3199 - 35 Harvard Rd

“Our goal is to increase rates of breastfeeding initiation, exclusivity, and duration in Guelph”

– Community Breastfeeding Collaborative of Guelph



This resource was created by the Community Breastfeeding Collaborative of Guelph to increase awareness of breastfeeding supports and services in our community. The Collaborative, including the agencies with logos above, do not endorse any specific brand of products, services or businesses contained in this resource. If you would like to join the Community Breastfeeding Collaborative of Guelph contact info@wdgpublichealth.ca.

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Public Health	Breastfeeding Clinics: Public health nurses are available to answer your breastfeeding questions, help get you started, support you through challenges, and encourage you to continue to breastfeed your baby. For more information visit wdgpublichealth.ca .	Mt. Forest Clinic (drop-in): Tuesdays 1 – 3 p.m. Public Health, 311 Foster Street
		Palmerston Clinic (by appointment): Thursdays 3:30 – 4:30 p.m. Palmerston and District Hospital 500 Whites Road Call 519-343-2030 ext. 4230 to book an appointment.
		Fergus Clinic (by appointment): Wednesdays 1 – 2:30 p.m. Public Health Office 474 Wellington Road 18, Suite 100 Call 1-800-265-7293 ext. 3616 to book an appointment.
	Let's Talk Parenting Line: Public health nurses are available to answer your questions by phone.	Call 1-800-265-7293 ext. 3616 Monday – Friday 9 a.m. – 4 p.m. wdgpublichealth.ca/LTP
Upper Grand FHT	Breastfeeding Café: Peer-to-peer breastfeeding support, and encouragement for pregnant and breastfeeding women. A trained facilitator is available to provide information and assistance with breastfeeding.	Drop-in Program: Fridays 1:30 – 3:30 p.m. Upper Grand Family Health Team 753 Tower St. S., Fergus Call 519-843-3947 f Breastfeeding Cafe - Upper Grand Family Health Team
GCHC	WE Breastfeed: Trained volunteers who have breastfed offer telephone support in different languages.	Call 519-821-6638, Ext. 250 to be matched with a volunteer. Monday-Friday, 9 a.m. – 5 p.m. Guelph Community Health Centre f @WeBreastfeed

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La Leche League Guelph: Visit www.LLLC.ca for more information or join them on  [@LLLCGuelph](https://www.facebook.com/LLLCGuelph)

Fee-for-Service Breastfeeding Services

- International Breastfeeding Centre/Newman Breastfeeding Clinic (Toronto) Call 416-498-0002 or visit www.nbci.ca to book an appointment (breastfeeding videos and information sheets also available on website).
- Cecily Heslett, IBCLC, Private Lactation Consultant in Fergus and Elora. Call 519-993-7517 or email cecily@cecilyheslett.ca. www.cecilyheslett.ca
- Robin Berger RN, IBCLC, Private Lactation Consultant. Call 519-928-5416 or find on  [Robin Berger - Breastfeeding & Parenting Support](#)
- Visit www.ilca.org to find a lactation consultant in your area.
- Donna Legge-Nevett, Pediatric Occupational Therapist. Call 519-787-4100 or email donna@ontariohealth.org.
- Association of Ontario Doulas. Find a doula at ontariodoulas.org. or contact regional rep. Dawn Humphrey 519-993-7103 or info@douladawn.ca.

Breast Pump Rentals – Medela:

- Suelaine Poot 519-343-3745, 9455 Road 146 RR #2 Palmerston. Available weekends and holidays.
- The Elora Apothecary www.eloraapothecary.ca Pharmasave 226-369-0312, 115 Geddes St., Unit B, Elora
- Robin Berger 519-928-5416 – Grand Valley
- Guelph Norfolk Pharmacy 519-837-9141

Breast Pump Rentals – Ameda:

- Centre Wellington Remedy's Rx www.remedys.ca/store/centrewellington 226-383-9461, 1-855 St. David Street N., Fergus

Minto-Mapleton
Family Health Team



La Leche League Canada



Countryside Midwifery Services

ASSOCIATION OF
Ontario  Doulas



Mount Forest
Family Health Team



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Section 3: Recovering from Birth

Recovering from Birth

Rest, fluids and good nutrition are essential. Listen and trust your body. Try to sleep when your baby sleeps. Accept practical advice, but keep visitors to a minimum in the first two weeks. Remember to best take care of your baby you need to take good care of yourself!

	What is normal	When to page
Breast/Nipples	<ul style="list-style-type: none"> A good latch is the best remedy for sore nipples Air dry your nipples after each feed, consider leaving expressed breast milk or using lanolin cream if they are sore or cracked. Avoid tight fitting clothing or bra as it increases the chances of blocked ducts Your breasts may feel larger, tender and full as your milk comes in. Try warming your breasts before feed, cooling afterwards (ice) and cold green cabbage leaves (see handout) to help with the discomfort. 	<ul style="list-style-type: none"> Red, hot, tender and painful area on breast.
Bleeding from your vagina	<ul style="list-style-type: none"> The heaviest bleeding is in the first 24 hours. Small blood clots are normal The bleeding may smell like your period Keep the area clean and change your pad often. We suggest using an all-cotton pad 	<ul style="list-style-type: none"> Soaking a maxi-pad front-to-back, side-to-side in ½ hour or less. Passing clots the size of your fist or bigger.
Uterus	<ul style="list-style-type: none"> Feels firm like a grapefruit in the lower part of your belly May have 'afterpains' (contractions) for a few days, especially if this is not your first baby. They may be very strong and painful. Peeing often, heat and/or pressure to ease the discomfort. 	
Perineum care	<ul style="list-style-type: none"> Soak your bottom 1-2 times per day in Epsom salts or herbal bath. Mild soap can also be used a few times per day. Kegel's (pelvic floor exercises) can start as early as day 1 – see the handout in the binder. One way to remember is to do 5 Kegels every time you feed your baby. 	
Peeing/Bowel Movements	<ul style="list-style-type: none"> Pee often, especially before nursing and sleeping Use the peri-bottle with warm water while peeing to decrease the stinging Pat with toilet paper from front to back It may take a couple days to have a bowel movement – be sure to drink lots of water and eat plenty of fibre (fruits, vegetables, whole grains) 	
Temperature	<ul style="list-style-type: none"> Normal temperature is less than 38°C (100.4°F) As your milk comes in, your temperature may be higher. You may feel sweaty or have chills. 	<ul style="list-style-type: none"> Temperature above 38°C (100.4°F)

	What is normal	When to page
Cesarean incision care	<ul style="list-style-type: none"> • It is important to rest, but also to move around multiple times per day to help with gas. • Keep the incision clean, dry and allow it to get some air time every day. As it heals it may itch, feel numb or have occasional sharp pains. • Use a pillow to brace your abdomen if you need cough or laugh 	<ul style="list-style-type: none"> • Hot, red, smelly, oozing pus or blood
Mood	<ul style="list-style-type: none"> • It is normal for this to be an emotional time. Life with a new baby is a time of great change and learning. There are also hormonal changes happening, your body is recovering, and you are likely sleep deprived. We will ask you how you are adjusting and coping every time we see you. • Try to sleep when you baby sleeps. Everything is more difficult when you are tired 	<ul style="list-style-type: none"> • Worsening mood • Any thoughts of harming yourself or your baby.

To page your midwife call 1-866-860-3712

A NOTE TO POSTPARTUM VISITORS FROM THE MIDWIVES

The first few precious days at home with a newborn are busy ones for the new parents. We provide these few “do’s” and “don’ts” to help guide visitors through this special recovery time. Although we present them with a smile... please take them seriously!

DO

- DO** Call before you come and plan a visit at a convenient time for the parents. Respect the parents if they tell you it is not a great time for a visit. Evenings may be the worst time.
- DO** Keep your visit SHORT. 15-20 minutes is good.
- DO** Wash your hands before offering to hold the baby.
- DO** Praise the new parents about their growing parenting skills.
- DO** Offer to look after older children.
- DO** Bring food! Suppers and healthy snack foods come in handy. Ask the parents for some of their favourites if you are not sure what to bring.
- DO** Offer an opinion if the parents ask for it.
- DO** Offer to wash dishes, take home a load of laundry, run the vacuum or clean something... anything.
- DO** Respect the parents’ need to do things their own way in their own time.
- DO** Listen to the story of the baby’s birth!

DON’T

- DON’T** Expect the mother to leave the room to nurse the baby.
- DON’T** Bring the whole family and settle in for the whole afternoon.
- DON’T** Accept an offer for tea or food unless you make it yourself and clean up afterwards.
- DON’T** Visit if you are feeling even a tiny bit sick.
- DON’T** Say anything negative about the baby’s name.
- DON’T** Smoke.
- DON’T** Give advice when the parents have not **directly** asked for it.
- DON’T** Insist on holding the baby... wait for an offer.

FOLIC ACID

FOR PRECONCEPTION AND PREGNANCY



THE SOCIETY OF
OBSTETRICIANS AND
GYNAECOLOGISTS
OF CANADA

www.sogc.org

education
education
education
education

You are having a baby or planning a pregnancy. Learn what you need to know about folic acid.

What is folic acid?

Folic acid (also known as folate or vitamin B9) is a vitamin which helps grow and protect cells in your body. It is found in some foods and in multivitamin supplements.

Why is folic acid important during preconception and pregnancy?

Your body needs folic acid when cells are growing and dividing very quickly. This happens during pregnancy as your uterus (womb) expands, the placenta develops, your body circulates more blood, and the fetus grows. Because of this, folic acid is important for a healthy pregnancy.

As your body grows, your baby is also growing very quickly. Maintaining healthy eating habits and proper levels of vitamins and minerals (such as folic acid) before conception and during pregnancy helps decrease the risk of some birth defects. Folic acid lowers the risk of birth defects such as neural tube defects (NTDs), heart and limb defects, urinary tract anomalies, narrowing of the lower stomach valve, and oral facial clefts (like cleft lip and cleft palate).

How can I get enough folic acid?

Folic acid is found in dark green, leafy vegetables, citrus fruit, whole grains, and other foods. In Canada, since 1998, enriched white flour, pasta, and cornmeal have been fortified with folic acid. Since then, there has been a decline in the rate of neural tube defects in Canada.

Here is a list of some foods that are recommended sources of folic acid:

fortified grains	broccoli
spinach	peas
lentils	brussels sprouts
chickpeas	corn
asparagus	oranges

Making sure you get enough folic acid every day from food is a challenge. That's why Canadian experts recommend you take a multivitamin with folic acid to ensure you get the amount you and your baby need.

When should I take folic acid supplements?

Since folic acid is so important in the early stages of pregnancy, start taking a multivitamin with folic acid if you are trying to conceive. It's important to get your daily dose of folic acid even before you become pregnant. Continue through pregnancy and for at least four to six weeks after birth and as long as you are breastfeeding.

How do I choose a multivitamin?

Talk it over with your health-care professional. If you are at a low risk for neural tube defects (NTDs), choose a multivitamin with 0.4-1.0 milligrams (mg) of folic acid. However, if you are at a higher risk for NTDs, your health-care professional may suggest a higher daily dose of folic acid. You might have a higher risk if:

- you had a previous pregnancy affected by NTDs
- you have a family history of NTDs
- you belong to an ethnic group that research shows is at a higher risk for NTDs (such as Sikh or Celtic)
- you have insulin-dependent diabetes
- you are obese
- you take certain medications to treat a seizure disorder
- you have a hard time remembering to take medications
- you have an addiction to alcohol or drugs*

If you are at increased risk, your health-care provider may recommend you take up to 5.0 milligrams of folic acid daily, for at least three months before conception. After 10-12 weeks of pregnancy, switch to the lower dose (0.4-1.0 mg) for the rest of the pregnancy and continue while breastfeeding.

**Use of drugs and alcohol during pregnancy can result in serious side effects for your baby, including low birth weight and birth defects.*

Neural tube defects (NTDs)

In the beginning of pregnancy, even before the time most women find out they are pregnant, folic acid plays an important role in the early development of the part of the fetus called the neural tube. The neural tube forms in weeks three and four of pregnancy and grows into the brain and spinal cord. When the tube doesn't close properly, this is called a neural tube defect (NTD). Some examples of NTDs are spina bifida (the spine or its covering stick out of the back), anencephaly (absence of part of the brain), and encephalocele (part of the brain grows outside the skull).

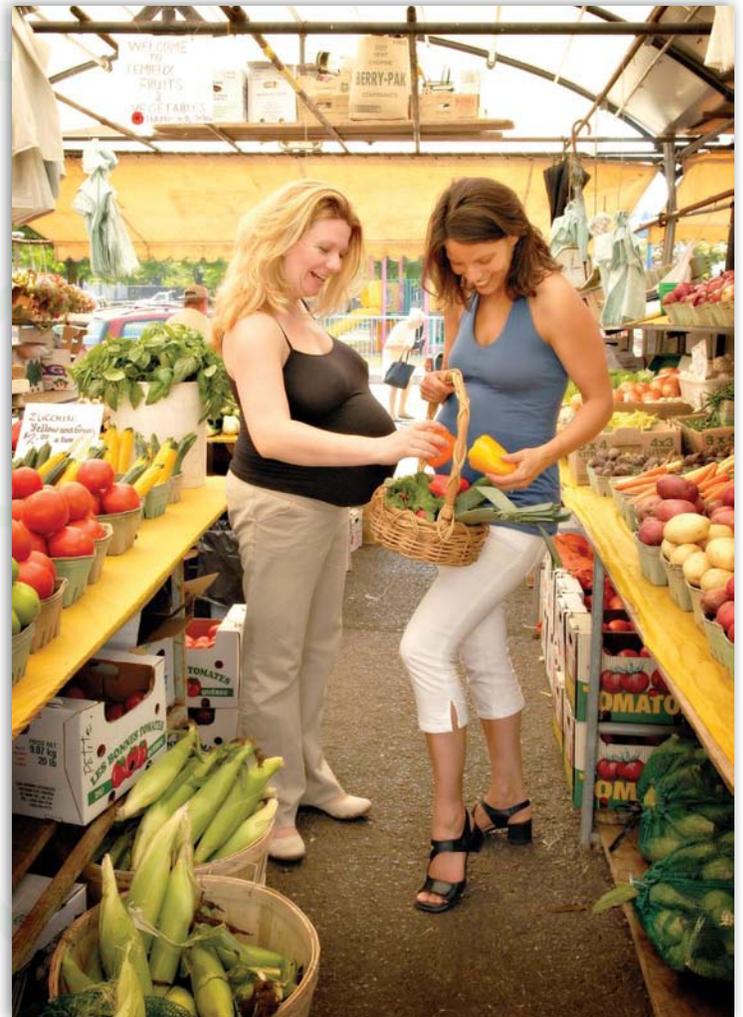
Can I have too much folic acid or vitamins?

If you take a multivitamin with folic acid and eat a balanced diet by following Canada's Food Guide, you won't have too much folic acid. If you do end up with any extra in your body, it will usually just pass in your urine. If you need a higher than normal amount of folic acid, talk to your health-care provider about taking an additional folic acid supplement with your multivitamin to get the correct amount.

Taking more than the recommended dose of vitamins can be harmful. Make sure you do not take more than the recommended dose of your multivitamin per day. Read the label on any vitamins when you buy outside the pharmacy. Choose a multivitamin with vitamin A as beta-carotene instead of as retinol since too much retinol may cause birth defects.

To learn more about folic acid and pregnancy

- "Healthy Beginnings: Giving your baby the best start from preconception to birth": www.sogc.org/healthybeginnings
- Eating Well with Canada's Food Guide: www.hc-sc.gc.ca/fn-an/food-guide-aliment
- The Society of Obstetricians and Gynaecologists of Canada (SOGC) and Motherisk's Joint Guideline on "Pre-conceptional Vitamin/Folic Acid Supplementation 2007": www.sogc.org/guidelines
- Public Health Agency of Canada: www.phac-aspc.gc.ca/fa-af



Section 3 – Sex & U: Contraception

Link to:

<https://www.sexandu.ca/contraception/>

for more information



Section 4: Postpartum Mood Disorders

Section 4 – Life with a new baby....

Is not always what you expect

Link to:

https://www.beststart.org/resources/ppmd/M03-E_PPMD_revision_15SEP23.pdf

for more information

Baby Blues & Postpartum Depression

BC Reproductive Mental Health Program



The first few weeks after the birth of a baby can be exciting. But this time can also be very stressful for a woman. Her body is going through changes in hormones, daily routines and sleeping patterns.

It's not surprising that many women feel sad, overwhelmed and tearful. Sometimes it is hard to know if the changes to your mood are due to normal "baby blues" or a more serious postpartum depression.

You can learn more by reading this fact sheet - but it is always a good idea to talk to your healthcare provider if you're concerned about your mood.

There is help available for postpartum depression. With treatment, most women improve a lot and are able to do much better in all areas of their lives.

Depression in Pregnancy

We usually hear about postpartum (after birth) depression, but depression can actually begin in pregnancy.

- 8-12% of pregnant women experience depression
- 10-16% of women experience depression in the first year after birth (postpartum)

If you are pregnant and worried about your mood, talk to your doctor. Treating depression in pregnancy can reduce the risk of depression after the baby is born.

Baby Blues

About 80% of mothers feel the "baby blues" or postpartum blues 3-5 days after giving birth. They may:

- feel happy one minute and sad the next – rapid mood swings
- feel helpless, worried, irritable or anxious
- cry for what seems like no reason
- have problems sleeping

These are normal feelings and responses when women have the postpartum blues. Usually these symptoms get better or go away within a week or two and do not require treatment. But, if your mood does not improve after 2 weeks of giving birth, you may be experiencing postpartum depression.

Postpartum Depression (PPD)

Depression affects a woman's mood, behaviour, thoughts and physical well-being. Some women might start feeling depressed within the first few days after the baby is born. Others might not feel depressed until weeks or months later. A woman who is experiencing PPD may:

- Feel depressed or extremely sad, most of the day and nearly every day
- Feel irritable or angry
- Feel guilty or worthless
- Feel hopeless and overwhelmed

- Lose interest in things she used to enjoy
- Sleep a lot more or a lot less than usual
- Eat more or less than usual
- Withdraw from family, friends and contact with other people
- Cry for no apparent reason
- Be restless, or have little energy
- Find it hard to concentrate or make decisions
- Have headaches or upset stomach or other physical symptoms
- Have thoughts that she is a terrible mother
- Have frightening thoughts that keep coming back about harming herself or her baby

Only a doctor can diagnose depression. A woman may be diagnosed with postpartum depression if the symptoms:

- last for more than two weeks
- are very upsetting to the woman
- make it difficult to carry out her daily activities and care for her baby

If I am depressed, why do I feel so anxious?

Many women who experience PPD will also experience anxiety. Some symptoms of anxiety are a racing heart, feeling on edge, too much or unrealistic worry, and upsetting thoughts or images of harm to the baby. Other times women will experience symptoms of anxiety without being depressed.

It's important to tell your healthcare provider *all* of the symptoms you are experiencing. That way you can both discuss all of the support and treatments that are available to you.

Postpartum Psychosis

In extremely rare cases, women will develop psychosis after the delivery of their baby. Some symptoms of psychosis are:

- feeling extremely confused and hopeless
- not able to sleep
- distrust of other people
- seeing things or hearing things that are not there
- thoughts of harming yourself, your baby or others

Women with a history of bipolar disorder or other mental illnesses, like schizophrenia, may be at higher risk of developing postpartum psychosis. If this happens, contact a health care professional immediately.

Why Me?

Some women have a higher risk of developing postpartum depression. The most common reasons are when a woman:

- has experienced depression or anxiety in the past
- has a family member(s) who has had depression or anxiety
- took medication for depression or anxiety and stopped before or during pregnancy
- has too little support from friends, family and community

Myths & Facts

Myth: You can just “snap out” of PPD.

Fact: PPD is a health issue. If you have moderate to severe PPD you need to receive health care.

Myth: PPD affects me, but not my baby.

Fact: When a mom is depressed, she can have a hard time interacting and bonding with her baby. This can affect the baby’s development. The best way to make sure your baby has a healthy start is to get help for yourself.

Myth: Only “weak”, “lazy” or “bad” moms get PPD.

Fact: All kinds of women from all walks of life can experience PPD. You may feel tired or withdrawn and not realize you are depressed because you are so *busy* caring for your newborn. PPD is an illness; it is not about the kind of person you are or your mothering skills.

Is there help?

Yes! Often the best way to treat PPD is to combine a number of different treatments like counseling, medication, support groups and self care. Counseling includes education about your illness, support and help with developing ways to cope.

If your depression is severe or counseling does not decrease the symptoms, a doctor may prescribe medication. The decision on whether to take medication should be based on a thoughtful discussion of risks and benefits with your healthcare provider.

You may find it helpful to fill out the Edinburgh Postnatal Depression Scale and show it to your doctor or midwife. This simple tool will help you figure out if you are struggling with depression. You may also want someone you trust to go with you to appointments for support.

Many women who are experiencing PPD know there is something wrong but don't go for help because they are embarrassed or afraid to talk about it. PPD is a medical condition – it's OK to ask about it!

Partner & Family Support

Families and partners can listen to your concerns, help you make decisions and comfort you. You may need to share the responsibilities of looking after other children and daily housework like cooking or cleaning.

Self Care

Self-care is a way to make some positive changes in your life that will help to lessen your depression. An easy way to remember the basic steps in self-care is to think of the word “NESTS”. Each letter stands for one area of self-care:

- **Nutrition** - Try to eat nutritious foods throughout the day.
- **Exercise** – Get regular exercise to reduce stress and feel better. Even a little physical activity can help!
- **Sleep & Rest** - Sleep is very important for both your physical and mental health. It is worth the effort to work on getting a good night’s sleep.
- **Time for Yourself** – Take some time to care for yourself each day, even if it is just for a few minutes.
- **Support** – All new moms need support from others. Don’t be afraid to ask for help and information! This includes practical support like childcare, emotional support like someone who can remind you of your strengths and informational support such as finding out about resources in your community.

Who should I talk to?

- If you notice the above symptoms in yourself, your partner or a family member, please contact your:
- family doctor, obstetrician or psychiatrist
- midwife
- public health nurse
- a registered psychologist 1-800-730-0522
- a registered clinical counselor 1-800-909-6303
- Pacific Postpartum Support Society (provides telephone support) 604-255-7999 or www.postpartum.org

Resources

- **BC Reproductive Mental Health Program.** Visit www.bcmhas.ca (Programs & Services → Reproductive Mental Health). This site has a range of information on women’s mental health during pregnancy and the postpartum period. You will find fact sheets, worksheets, the Edinburgh Postnatal Depression Scale, and other resources.
- **BC Partners for Mental Health & Addictions Information.** Visit www.heretohelp.bc.ca
- **Your Local Crisis Line.** These phone lines aren’t only for people in crisis. You can call for information on or if you just need someone to talk to. If you are in distress, call 310-6789—24 hours a day. Do not add 604, 778 or 250 before the number.
- **1-800-SUICIDE.** If you're thinking about suicide, call 1-800-SUICIDE (1-800-784-2433) to get help right away, any time of day or night. It’s a free call.
- **HealthLink BC.** Call **811** or visit www.healthlinkbc.ca for free, non-emergency health information for anyone in your family, including mental health information. Through 811, you can speak with a nurse, a pharmacist or a dietitian. Translation services are available in over 130 languages. For deaf & hearing-impaired assistance (TTY), call 711.



Pregnancy and life with a new baby are not always what you expect.

1 in 5 mothers will have depression or anxiety during pregnancy or postpartum.

Depression and anxiety during pregnancy and postpartum are often referred to as perinatal mood disorders (PMD). In this leaflet we will use the short form PMD when talking about these conditions.

If you have PMD you may:

- Have little or no interest or enjoyment in things you used to enjoy.
- Feel sad most of the time.
- Feel nervous, anxious or on edge.
- Feel like you can't stop or control worrying.

You may also feel:

- Really tired.
- Irritable and/or angry.
- Restless.
- Slowed down.
- Worthless.
- Guilty.
- Ashamed.
- Numb or empty.
- Alone.
- Frustrated.
- Hopeless.
- Panicky.

You may also:

- Have no energy.
- Have no appetite.
- Eat too much.
- Sleep too much.
- Not be able to sleep.
- Not be able to concentrate.
- Have aches and pains.
- Have chest pain or shortness of breath.
- Have a "lump" in your throat.
- Have numbness or tingling.
- Not want to spend time with your baby, partner, or family.
- Cry for no apparent reason.
- Keep checking things, e.g., baby's breathing.
- Have negative or disturbing thoughts or images that keep coming back.
- Think bad things may happen to you or your baby.
- Think you are not a good mother.
- Think your family would be better off without you.
- Think about death or suicide.
- Think about hurting yourself or your baby.

If you have had any of these symptoms for more than two weeks, talk to a health care provider. Together make a plan to help you get better. This could include therapy and/or medication.

If you feel like hurting yourself or your baby, or are thinking about suicide, get help right away.

- Call 911.
- Go to the nearest hospital emergency room.
- Contact the mental health crisis line in your area.

You can get help from:

Your health care provider (family physician, midwife, nurse, nurse practitioner, obstetrician, psychiatrist, or psychologist).

Your public health unit: Call 1-800-268-1154 or visit www.serviceontario.ca to know the location and services of your local public health unit.

The Mental Health Helpline: Call 1-866-531-2600 (24 hours a day 7 days a week) or visit www.mentalhealthhelpline.ca for information about mental health services in Ontario.

Ontario Telehealth: Call 1-866-797-0000 TTY: 1-866-797-0007 (24 hours a day 7 days a week) to get health information from a Registered Nurse.

To order more tear-off pads, call 1-800-397-9567 ext. 2260.

2017 | This document has been prepared with funds provided by the Government of Ontario.



What you can do:

- ✓ Share your feelings with someone you trust.
- ✓ Ask for help.
- ✓ Take care of yourself.
- ✓ Take time for yourself.
- ✓ Get counselling or join a support group.
- ✓ Talk with your health care provider about taking medications.

What you can do, if you are a partner, family member, or friend:

- ✓ Listen and support her feelings.
- ✓ Be helpful and don't judge her.
- ✓ Encourage her to seek help.
- ✓ Develop your relationship with the baby.
- ✓ Educate yourself about PMD.
- ✓ Take time for yourself.
- ✓ Find someone you can talk to.

1 in 10 fathers may also have PMD. As a new father you may be at risk of PMD. Get information and support as well.



by/par health **nexus** santé

For more resources check www.en.beststart.org/for_parents



Durant la grossesse et avec un nouveau bébé, la vie n'est pas toujours rose.

Une mère sur cinq souffrira de dépression ou d'anxiété durant la grossesse ou en période post-partum.

On qualifie souvent la dépression et l'anxiété pendant et après la grossesse comme étant des troubles de l'humeur périnataux.

Si vous souffrez de troubles de l'humeur périnataux, vous pouvez montrer les signes suivants :

- Avoir peu ou pas d'intérêt pour les activités que vous aimiez faire par le passé.
- Vous sentir triste presque tout le temps.
- Vous sentir nerveuse ou anxieuse ou avoir les nerfs à fleur de peau.
- Avoir l'impression de ne pas pouvoir arrêter de vous inquiéter ou de maîtriser vos inquiétudes.

Vous pouvez aussi :

- Vous sentir très fatiguée.
- Être en colère et irritable.
- Être agitée.
- Avoir l'impression de tourner au ralenti.
- Vous sentir inutile.
- Vous sentir coupable.
- Avoir honte.
- Vous sentir paralysée ou ressentir un grand vide.
- Vous sentir seule.
- Être frustrée.
- Être désespérée.
- Être prise de panique.

Vous pouvez aussi :

- N'avoir aucune énergie.
- Avoir aucun appétit.
- Manger trop.
- Dormir trop.
- Ne pas pouvoir dormir.
- Ne pas pouvoir vous concentrer.
- Avoir des maux de toutes sortes.
- Avoir des douleurs à la poitrine ou vous sentir essoufflée.
- Avoir une boule dans la gorge.
- Ressentir des engourdissements ou des picotements.
- Ne pas vouloir passer du temps avec votre bébé, votre partenaire ou votre famille.
- Pleurer sans raison apparente.
- Toujours sentir le besoin de vérifier quelque chose, par exemple si votre bébé respire.
- Avoir des images ou des pensées négatives et troublantes récurrentes.
- Penser qu'un malheur peut vous arriver à vous ou arriver à votre bébé.
- Avoir l'impression de ne pas être une bonne mère.
- Penser que votre famille serait mieux sans vous.
- Penser à la mort ou au suicide.
- Avoir l'idée de vous faire mal ou de faire mal à votre bébé.

Si vous ressentez un de ces symptômes depuis plus de deux semaines, parlez à un professionnel de la santé. Vous pourrez ensemble établir un plan pour vous aider à vous sentir mieux. Ce plan peut comprendre des séances de thérapie ou des médicaments.

Si vous avez envie de vous faire mal ou de faire mal à votre bébé, ou si vous pensez au suicide, n'attendez pas, demandez de l'aide immédiatement.

- Appelez le 911.
- Rendez-vous aux urgences de l'hôpital le plus proche de chez vous.
- Entrez en contact avec la ligne d'aide sur la santé mentale de votre localité.

Vous pouvez obtenir de l'aide en ayant recours à :

Votre prestataire de soins de santé (médecin de famille, sage-femme, infirmière, infirmière praticienne, obstétricien, psychiatre ou psychologue).

Votre bureau de santé publique local : Composez le 1-800-268-1154 ou visitez le site Web <https://www.ontario.ca/welcome-serviceontario> pour obtenir de l'information sur l'endroit où se situe le bureau de santé publique local et sur les services offerts.

La ligne d'aide sur la santé mentale : Composez le 1-866-531-2600 (24 heures sur 24, 7 jours par semaine) ou visitez le site Web www.mentalhealthhelpline.ca/Accueil pour obtenir de l'information sur les services en santé mentale offerts en Ontario.

Télé Santé Ontario : Composez le 1-866-797-0000 ou ATS : 1-866-797-0007 (24 heures sur 24, 7 jours par semaine) pour parler à une infirmière autorisée.

Ontario 211 : Visitez <https://211ontario.ca/fr/> ou appelez le 211.

Pour commander d'autres blocs de feuilles détachables, téléphonez au 1-800-397-9567, poste 2260.

2017 | Ce document a été préparé avec le soutien financier du gouvernement de l'Ontario.

Ne l'oubliez pas... ce n'est pas de votre faute. Il y a de l'aide pour vous et votre famille.

Ce que vous pouvez faire :

- ✓ Confiez-vous à une personne de confiance.
- ✓ Demandez de l'aide.
- ✓ Prenez bien soin de vous.
- ✓ Réservez-vous du temps pour vous-même.
- ✓ Obtenez de l'aide d'un service de counseling ou joignez-vous à un groupe de soutien.
- ✓ Demandez à votre prestataire de soins de santé ses recommandations concernant la prise de médicaments.

Ce que vous pouvez faire comme partenaire, membre de la famille ou ami :

- ✓ Écoutez et soutenez la nouvelle maman.
- ✓ Aidez-la et ne la jugez pas.
- ✓ Encouragez-la à demander de l'aide d'un professionnel.
- ✓ Tissez des liens avec le bébé.
- ✓ Renseignez-vous sur les troubles de l'humeur périnataux.
- ✓ Réservez-vous du temps pour vous-même.
- ✓ Confiez-vous à quelqu'un.

Un père sur dix peut également souffrir de troubles de l'humeur périnataux. Si vous êtes un nouveau papa, vous êtes peut-être à risque d'en souffrir. Renseignez-vous et n'hésitez pas non plus à demander du soutien.

best start
meilleur départ

Resource Centre/Centre de ressources

by/par health **nexus** santé

Pour obtenir d'autres ressources pour les parents, rendez-vous à l'adresse www.fr.meilleurdpart.org.

Section 4 – Postpartum Mood Disorder Support Services

Guelph Community Health Centre

Link to:

<http://guelphchc.ca/postpartum-depression-support-services/>

for more information

Edinburgh Postnatal Depression Scale1

As you have recently had a baby, we would like to know how you are feeling. Please check the answer that comes closest to how you have felt *in the past seven days*, not just how you feel today.

When you have answered all ten questions, add up the number beside each answer you have chosen to reach a total score. A score of 14 or more suggests you may be depressed. Speak to your midwife or family doctor if your score is 14 or more or if you know you are depressed and in need of more detailed assessment and support

SCORE 1. I have been able to laugh and see the funny side of things:

- 0 As much as I always could
- 1 Not quite so much now
- 2 Definitely not so much now
- 3 Not at all

2. I have looked forward with enjoyment to things:

- 0 As much as I ever did
- 1 Rather less than I used to
- 2 Definitely less than I used to
- 3 No, never

3. I have blamed myself unnecessarily when things went wrong:

- 3 Yes, most of the time
- 2 Yes, some of the time
- 1 Not very often
- 0 No, never

4. I have been anxious or worried for no good reason:

- 0 No, not at all
- 1 Hardly ever
- 2 Yes, sometimes
- 3 Yes, very often

5. I have been scared or panicky for no good reason:

- 3 Yes, quite a lot
- 2 Yes, sometimes
- 1 No, not much
- 0 No, not at all

6. Things have been getting on top of me:

- 3 Yes, most of the time I haven't been able to cope at all
- 2 Yes, sometimes I haven't been coping as well as usual
- 1 No, most of the time I have coped quite well
- 0 No, I have been coping as well as ever

SCORE **7. I have been so unhappy that I have had difficulty sleeping:**

- 3 Yes, most of the time
- 2 Yes, quite often
- 1 Not very often
- 0 No, not at all

8. I have felt sad or miserable:

- 3 Yes, most of the time
- 2 Yes, quite often
- 1 Not very often
- 0 No, not at all

9. I have been so unhappy that I have been crying:

- 3 Yes, most of the time
- 2 Yes, quite often
- 1 Only occasionally
- 0 No, never

10. The thought of harming myself has occurred to me:

- 3 Yes, quite often
- 2 Sometimes
- 1 Hardly ever
- 0 Never

TOTAL SCORE: _____

1 Reprinted, with permission, from Cox, JL, Holden JM, Sagovsky R, 1987 Detection of Postnatal Depression: Development of the 10-item Edinburgh Postnatal Depression Scale. *British Journal of Psychiatry* 1

Booklet 5

Birth After Previous C-Section

Thinking about VBAC: Deciding what's right for me

If you have had a caesarean section (c-section) before, your midwife will talk to you about your options for this pregnancy. This handout aims to help you think and talk about your decision with your midwife, your partner and family and friends.

What are my options when giving birth after a previous c-section?

Most women will have the choice of planning either:

vaginal birth after caesarean section (VBAC)	repeat caesarean section (c-section)
VBAC is a safe choice for most women who have had a c-section. Many women who have had a c-section in the past will still be able to give birth vaginally. Some women who plan VBAC will end up having a c-section again.	Some women may prefer to have another c-section. For some women a planned c-section may be a safer option.

What are my chances of having a VBAC?

Most VBACs happen as planned.

It's hard to guess any woman's chance of having a VBAC. Some things about your own health history and previous birth experience(s) may make it more or less likely that you will give birth vaginally.

Your chances of having a VBAC are **INCREASED** if:

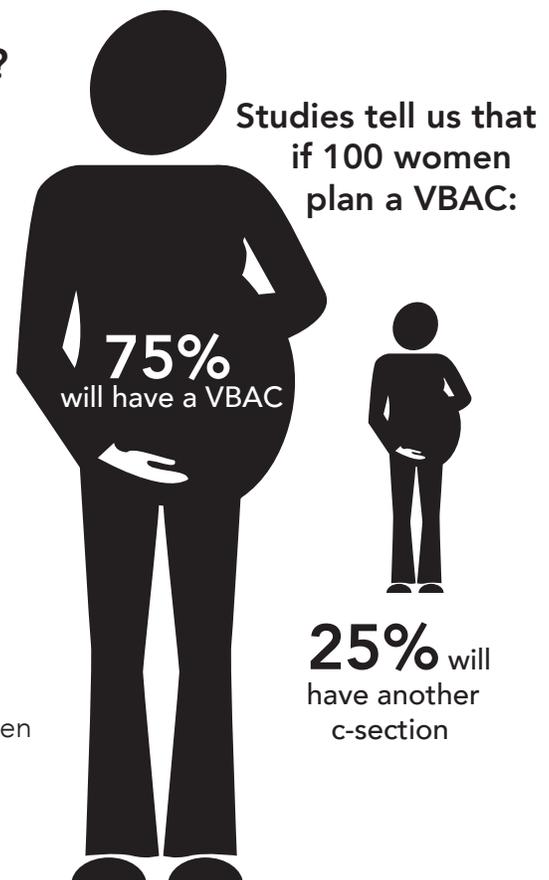
- You have had a vaginal birth before.
- The reason for your last c-section is not a factor this time (for example, your last c-section happened because your baby was in a feet-first (breech) position, and your baby's head is down this time).

Your chances of having a VBAC are **DECREASED** if:

- You are given drugs to induce (start) or augment (strengthen or speed up) your labour.
- Your BMI is over 25 – 30.
- You are 35 years of age or older.

You may have a higher or lower chance of having a VBAC if one or more of these factors apply to you. But there is no way to know for certain whether or not you will have a VBAC. Research shows that even if your chances of having a VBAC are decreased, you still have a greater than 50% chance of having a vaginal birth.

This document provides client-friendly information based on the Association of Ontario Midwives' Clinical Practice Guideline No. 14: Vaginal Birth after Previous Low-Segment Caesarean Section. It is designed to help you better understand some of the considerations and choices you may face while receiving care from your midwife. It is not intended to replace the informed choice discussions that you and your midwife will have. If you have any questions, concerns or ideas after reading over this document, please share them with your midwife.



What are some of the differences between VBAC and c-section?

Studies tell us that both VBAC and planned c-section are very safe. However, having a baby always involves some risk of complications, no matter what kind of birth you have.

Some risks of VBAC

Uterine rupture:

- Uterine rupture occurs when the wall of the uterus splits during pregnancy or labour. This usually happens along the scar of a previous c-section.
- Uterine rupture requires emergency surgery.

Uterine rupture happens in about 0.5% of ALL VBAC labours. This means that one uterine rupture would be expected to occur for every 200 women who plan to have a VBAC.

Most mothers and babies will recover completely after uterine rupture. On rare occasions, uterine rupture can have serious effects:

- mother: excessive bleeding or removal of the uterus (hysterectomy)
- baby: brain damage or death

These sorts of results occur in fewer than 5% of cases of rupture. Because rupture occurs so rarely, the chances that a VBAC will lead to problems for the mother or baby are very low.

There is no way to know for certain who will have a uterine rupture. Your chances may be higher if:

- you had your last c-section less than two years ago, or
- you are given drugs to induce (start) or augment (strengthen or speed up) your labour this time.

Having one of these factors doesn't mean it is unsafe to plan a VBAC – it just means that the likelihood of having a uterine rupture is slightly higher, but still low.

Having an emergency c-section:

Some women who plan VBAC will need to have a c-section. This happens to about 1 in 4 women who plan VBAC. Having a c-section after labour has begun is associated with more risks (such as uterine infection) than a c-section before labour.

Some risks of repeat c-section

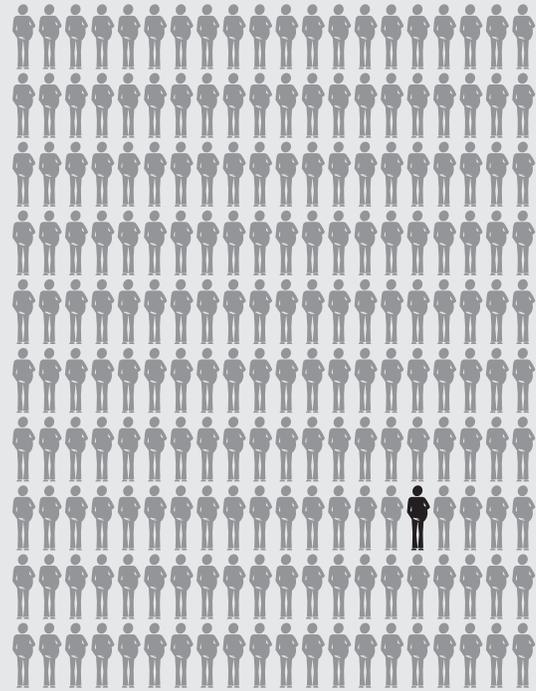
Problems related to surgery:

- Like any major surgery, repeat c-section can result in surgery-related problems: fever, infection, injuries to the bowel or bladder, or blood clots.

Neonatal breathing difficulties:

- Vaginal birth helps squeeze fluid from your baby's lungs. That's why babies born by c-section are more likely to have trouble breathing compared to babies who are born vaginally.
- Midwives and hospitals are well prepared to deal with babies' breathing problems. Most of the time these problems are mild and babies quickly recover.
- Breathing problems may mean your baby requires admission to a special nursery or newborn intensive care unit (NICU) for observation or treatment. This may mean that you are separated from your baby.

1 in 200 women who plan a VBAC will experience uterine rupture:



Problems with the placenta in future pregnancies:

- Scars from c-sections can cause problems with how the placenta attaches itself to the uterus in future pregnancies (placenta previa and placenta accreta). These problems can cause serious bleeding and in rare occasions may cause death.
- The risk of placenta problems increases with each additional c-section.

How can I decide what’s best for me?

You may find it helpful to think about some of the common reasons women might choose each option. Like any aspect of childbirth, VBAC and repeat c-section each have risks. They also have their own benefits. Thinking about what benefits and risks matter most to YOU can help you decide whether to plan a VBAC or a repeat c-section.

You can add checkmarks to the table below to identify the reasons that matter most to you. Please feel free to add additional reasons that are important to you. Look to see where you have put the most checkmarks – you might want to give those reasons extra thought.

How much does this reason matter to you? only a little
 matters somewhat
 matters a lot

Some reasons you might choose to plan a VBAC:	
You are more likely to have a shorter hospital stay and a faster recovery • This can mean you’re able to return to your usual activities sooner.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
You are less likely to have problems related to surgery	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
You are more likely to hold and breastfeed your baby sooner • This is partly because babies born by c-section are more likely to be admitted to a nursery or NICU for breathing difficulties.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
You want to have more children after your current pregnancy • If you are planning to have more than two children, planning a VBAC is likely the safest option for you. The more c-sections you have, the more likely you will have placenta problems in the future.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
You are more likely to have a positive birth experience • In one large Canadian study, women who had a VBAC rated their birth experiences more positively than women who had a repeat c-section.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<i>Other reasons</i>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

Some reasons you might choose to plan a repeat c-section:	
You are less likely to experience uterine rupture.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
You avoid the risk of an emergency c-section • Some women who plan VBAC will still have a c-section. This happens to about 1 in 4 women. Having a c-section after labour has begun is associated with more risks (such as uterine infection) than a c-section before labour.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
You can know when your baby will be born.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
You will know what to expect from surgery.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<i>Other reasons</i>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

If I plan for a VBAC, can I still have a home birth?

Having had a c-section in the past may impact your choice of birthplace. There are many different factors to consider and your midwife is well-suited to help you explore your options and make a decision.

One challenge of decision-making is that there is little research to help us know whether attempting a VBAC at home is less safe than attempting a VBAC in hospital. In one study of Ontario women cared for by midwives from 2003-2008, babies born by VBAC at home weren't any less healthy than babies born by VBAC in hospital.

Who is helping you make this decision?

Are there other people in your life whose support or advice is important to you? Your partner? Family? Friends?

You may find it helpful to share this information with them as it may help them understand the options available to you, and get them thinking about what benefits and risks that THEY think are most important. This can also be helpful if you have already made a decision and you need them to understand why you have chosen one option over another.

Other resources

Two teams in British Columbia have published very useful resources for women who are thinking about VBAC:

- Optimal Birth BC: optimalbirthbc.ca
- The Power to Push campaign, based at BC Women's Hospital: powertopush.ca

There are also some American resources that women might find helpful:

- Childbirth Connection: A not-for-profit organization in the United States that has worked to improve the quality of care for mothers, babies and families since 1918: childbirthconnection.org
- A Woman's Guide to VBAC: an online guide developed by Lamaze International to address issues and questions about VBAC: givingbirthwithconfidence.org

Organization:

International Cesarean Awareness Network: icancanada.ca

I still need more information to help me with my decision.

Your midwife can provide you with additional resources to help you with your decision. If you have specific questions please write them down below and bring this sheet to your next appointment.

Considering Your Options For Women with History of Caesarean Section

What are the Risks of a TOL?

The most serious risk is uterine rupture which happens in 0.1% to 1.5% of TOL. A uterine rupture means that the first caesarean scar opens during labour. Uterine rupture can result in death or serious brain injury to the baby and serious haemorrhage for mothers. Although this complication is very rare, a uterine rupture is a serious emergency and an immediate caesarean is needed if it occurs. For this reason, we recommend that women planning TOL or VBAC plan a hospital birth.

Some women have a higher risk of uterine rupture. Women whose due date is within 2 years of their caesarean have an increased chance of rupture.

Women who have a trial of labour which ends in a caesarean section after labouring have a higher rate of complications than women who planned a caesarean from the start. These complications can include fever, need for blood transfusion, and infection.

What are the Risks of ERCS?

Most women who have an ERCS will have an uncomplicated surgery. Women still have a higher risk of some problems compared to a vaginal birth. These include:

- More infections
- Haemorrhage
- Blood clots
- Placental problems in future pregnancies
- Longer hospital stays

Babies born by caesarean section have more chance of having breathing problems at birth because of increased fluid in their lungs.

Midwifery Care for Women who have had a Caesarean?

The College of Midwives requires us to discuss amongst the care team every woman who has had a caesarean section. The community standard in Guelph is for us to also offer and arrange a consultation with an obstetrician towards the end of pregnancy. We are required by our College to arrange an obstetrical consult for any woman with a history of more than one caesarean surgery or if the incision was a classical or T type in addition to other reasons. Midwives will make every effort to get a copy of the surgery record to aid in decision making around TOL.

What would Midwives do differently during a labour after Caesarean?

Fetal Heart Rate Monitoring

The first sign of a uterine rupture is usually an abnormal fetal heart rate pattern. The SOGC recommends continuous electronic fetal monitoring for women planning TOL and VBAC.

The AOM recommends using an intermittent auscultation protocol for high risk pregnancies or continuous electronic fetal monitoring. The AOM recommends using continuous monitoring if there are abnormalities in the labour. Electronic Fetal monitors are only available in the hospital.

Progress of Labour

Research tells us that an abnormally slow labour may be related to uterine rupture. Midwives monitor closely for signs of a prolonged labour, and would consult an obstetrician as outlined in our College of Midwives guidelines.

Pain Relief in Labour

Some would argue that women planning VBAC should not have epidural because it may mask the pain that can accompany a uterine rupture and delay diagnosis of the problem. It is also worth considering that an epidural may slow labour progress and slow progress is a specific concern for women planning VBAC. Others would say that an epidural means that an emergency caesarean could happen more quickly if it is needed. There is no research evidence that shows that women should not choose the pain relief options that are right for them.

Induction of Labour

The best situation for women wanting VBAC is for labour to start naturally. Women who need induction of labour for any reason, and who are planning VBAC would have a consultation with an obstetrician to review the options available to them. Depending on the specific details of your history, an obstetrician may not recommend the medications usually used for induction because of the increased risks of uterine rupture. Women who need or want induction should discuss their options during an obstetrical consultation.

Homebirth and VBAC

As a group we recognize the benefits of homebirth for low risk pregnancies. Although many VBAC labours are uncomplicated, they are not low risk. As a group we also recognize that being at home can increase the time required to access emergency care. Weather, distance from hospital and closest hospital all affect the availability of an emergency caesarean section. The SOGC recommends hospital birth for women planning VBAC. The CMO guidelines clearly indicate that midwives offer choice of birthplace to our clients. As a practice, based on our experience and training, we strongly recommend planning for hospital birth.

IV in Labour

Neither the AOM nor the SOGC recommends an IV in a normal spontaneous labour after caesarean. Starting an IV is one of the first steps that would be taken in an abnormal labour, and is available to you at any time if you request it.

Some Final Thoughts

As midwives we strive to protect and support normal birth. Deciding about a TOL or ERCS can be difficult for families. It is important for you to know that we will support your informed choices. Additional information is available to you at any time. Please talk to your midwives about any questions or concerns you have.

Once you have considered these factors, talk with your midwives about your choices for your birth. We will review and have you sign our plan of care for women with a history of caesarean section.

Information for this handout taken from AOM and SOGC guidelines. Ask your midwife for copies of these to see complete references.

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EXPERTS IN NORMAL PREGNANCY, BIRTH & NEWBORN CARE



› **Clinical Practice Guideline No.14**

VAGINAL BIRTH AFTER PREVIOUS LOW-SEGMENT
CAESAREAN SECTION



Association of Ontario Midwives

> Clinical Practice Guideline No.14

VAGINAL BIRTH AFTER PREVIOUS LOW-SEGMENT CAESAREAN SECTION

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AOM CLINICAL PRACTICE GUIDELINE

VAGINAL BIRTH AFTER PREVIOUS LOW-SEGMENT CAESAREAN SECTION

This document replaces AOM Clinical Practice Guideline No. 5 - Vaginal Birth After One Previous Low-Segment Caesarean Section. The original guideline was published in 2004.

This guideline was approved by the AOM Board of Directors: September 21, 2011

Statement of Purpose:

The goal is to provide an evidence-based clinical practice guideline (CPG) that is consistent with the midwifery philosophy and model of care. Midwives are encouraged to use this CPG as a tool in clinical decision-making. This CPG is independent of and not intended to replace the standards of the College of Midwives of Ontario.

Objective:

The objective of this CPG is to provide a critical review of the research literature on the management of uncomplicated pregnancy in women who have had a previous low-segment caesarean section (LSCS).

Outcomes of Interest:

1. uterine rupture
2. maternal morbidity and mortality
3. hypoxic-ischemic encephalopathy (HIE)
4. other neonatal morbidity and mortality

Methods:

A search of the Medline, CINAHL databases and Cochrane library from 1994-2010 was conducted using the key words: vaginal birth after caesarean, VBAC, uterine rupture, and prior caesarean section. Additional search terms were used to provide more detail on individual topics as they related to VBAC. Older studies were accessed in cases of commonly cited statistics, or significant impact on clinical practice.

Review:

This CPG was reviewed using a modified version of the AGREE instrument (1), the AOM Values-based Approach to CPG Development (2), as well as consensus of the VBAC Working Group, CPG Subcommittee, the Insurance and Risk Management Program and the Board of Directors.

This guideline reflects information consistent with the best evidence available as of the date issued and is subject to change. The information in this guideline is not intended to dictate a course of action, but inform clinical decision-making. Local standards may cause practices to diverge from the suggestions within this guideline. If practice groups develop practice group protocols that depart from a guideline, it is advisable to document the rationale for the departure.

Midwives recognize that client expectations, preferences and interests are an essential component in clinical decision-making. Clients may choose a course of action that may differ from the recommendations in this guideline, within the context of informed choice. When clients choose a course of action that diverges from a clinical practice guideline and/or practice group protocol this should be well documented in their charts.

ABBREVIATIONS:

BMI	Body Mass Index (kg/m ²)	LSCS	Low-segment caesarean section
CI	Confidence interval	LUS	Lower uterine segment
CS	Caesarean section	NICU	Newborn intensive care unit
EDB	Estimated date of birth	OR	Odds ratio
EFM	Electronic fetal monitoring	PPH	Post-partum hemorrhage
ERCS	Elective repeat caesarean section	RR	Relative risk
HIE	Hypoxic-ischemic encephalopathy	VBAC	Vaginal birth after caesarean section
IA	Intermittent auscultation		

Key to evidence statements and grading of recommendations, from the Canadian Task Force on Preventive Health Care

Evaluation of evidence criteria		Classification of recommendations criteria	
I	Evidence obtained from at least one properly randomized controlled trial	A	There is good evidence to recommend the clinical preventive action
II-1	Evidence from well-designed controlled trials without randomization	B	There is fair evidence to recommend the clinical preventive action
II-2	Evidence from well-designed cohort (prospective or retrospective) or case-control studies, preferably from more than one centre or research group	C	The existing evidence is conflicting and does not allow to make a recommendation for or against use of the clinical preventive action; however, other factors may influence decision-making
II-3	Evidence obtained from comparisons between times or places with or without the intervention. Dramatic results in uncontrolled experiments (such as the results of treatment with penicillin in the 1940s) could also be included in this category	D	There is fair evidence to recommend against the clinical preventive action
III	Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees	E	There is good evidence to recommend against the clinical preventive action
		L	There is insufficient evidence (in quantity or quality) to make a recommendation; however, other factors may influence decision-making
Reference: (3)			

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INTRODUCTION

From the late 1980s to mid-1990s vaginal birth after caesarean (VBAC) rates increased in North America. This was a response to public and professional concerns about rising caesarean section rates and increasing evidence indicating that in the absence of contraindications, VBAC is a safe choice. (4) However, since the mid-1990's, the rate of VBAC has declined dramatically in Canada, with the repeat caesarean section (CS) rate having increased from 64.7% in 1995 to 82.4% in 2008. (5,6) This increase has occurred despite a consensus, reflected in professional guidelines, that VBAC is a safe and appropriate option for most women who have had a previous CS. (7-10)

Overall rates of CS have also increased in Canada since the mid-1990s. Both the decrease in VBAC and the increase in repeat CS reflects an increase in the rate of primary CS in Canada, from 12.6% in 1995-06 to 18.6% in 2004-05, a trend that is likely

multifactorial. (5) Concerns about safety, place of birth and medico-legal pressures have shaped past and current discussions and practices regarding VBAC. The risks and benefits of both elective repeat caesarean section (ERCS) and VBAC and options for labour management are important components of informed choice discussions for women with a history of CS. This CPG supports VBAC as a safe choice for the majority of women with prior CS and acknowledges the growing body of evidence that multiple CS have the potential to cause long-term harm.

Incidence

Ontario women are slightly more likely to have a CS than Canadian women in general. The primary CS rate in Ontario was 19.6% in 2008-09 and the repeat CS rate was 85.3% (see Table 1). Women over age 35 had an increased rate of primary CS (23.7% in Canada and 24.0% in Ontario) compared to (17.5% and 18.5%, respectively) women younger than 35 years of age. (6)

	Overall CS Rate % (95% CI)	Primary CS Rate % (95% CI)	Repeat CS Rate % (95% CI)
Canada	25.6 (25.4-25.7)+	18.5 (18.4-18.7) ±	82.4 (82.1-82.8) ±
Ontario	26.7 (26.5-26.9)+	19.6 (19.4-19.8) ±	85.3 (84.8-85.8) ±
Ontario midwifery care	15.2* (14.9-15.5)**		46.1* (44.4-47.8)**

+ 2004-2005; source: (5)

± 2008-2009; source: (6)

* 2003-2008; source: (11)

** 2003-2008; source: (12)

Implementation Tip

Practice groups may wish to create a written protocol specific to the practice group that documents which of the recommendations within the clinical practice guideline they are adopting and how they are putting those recommendations into practice, including what would be part of an informed choice discussion with each client. Midwives are advised to document clearly that an informed choice discussion has taken place. If the practice group has a written protocol about what should be discussed with each client, that discussion should be followed. Any deviation from or addition to that discussion should also be documented in the woman's chart. If there is no protocol about what information is provided then documentation in the woman's chart should give details of that discussion. If, based on the client's health or risk status, the midwife makes recommendations for monitoring or intervention that the client declines, the midwife should document that her recommendation was declined.

An analysis of outcomes specific to Ontario midwifery clients suggests a lower rate of both primary and repeat CS among women receiving care from midwives. From 2003-2008 the rate of CS for all women under midwifery care in Ontario was 15.2%. During this period Ontario midwives attended 3262 births to women with a history of CS. The rate of repeat caesarean section among this group was 46.1%. From 2006-08, VBAC was planned by 1095/1536 (71.3%) of women in midwifery care who had a history of CS, and 779/1095 (71.2%) of these labours resulted in a vaginal delivery. (11)

VBAC: Review of Recent Research

The highest quality and most current research supports VBAC as a safe choice for the majority of women with a prior LSCS, and overall rates of maternal and perinatal complications are low for both VBAC and ERCS. (13)

This CPG provides a summary of the research on the risks and benefits of VBAC and ERCS, to aid midwives in facilitating informed choice discussions with clients who have a history of one or more previous LSCS. The midwife will typically discuss the benefits and risks of VBAC and ERCS in light of a client's specific clinical circumstances. This information, along with the woman's values and risk tolerance, will factor into the decision-making about method and place of birth in the current pregnancy. This CPG also reviews some of the important considerations in the management of labour after a previous CS.

The midwife's role in promoting informed choice regarding VBAC and ERCS is influenced by the midwifery profession's strong belief in the promotion of "normal birth" (14) and the Canadian obstetrical community's commitment of support for birth as a natural process. (15) The midwife's professional responsibility to advocate for the option of VBAC takes place within the broader context of escalating rates of CS, which works to normalize technological intervention and undermine confidence in vaginal birth.

Helping clients make informed choices within this context, and discussing risk without instilling fear, requires a high degree of skill and time on the part of midwives. Quantifying, weighing and communicating risk is especially difficult in the perinatal period, given dominant cultural norms of risk aversion and conceptualizations of pregnancy and birth as inherently problematic undertakings that warrant preemptive medical intervention. (16)

The Canadian Association of Midwives provides an apt description of how midwives may be able to best support their clients, by "trusting women and supporting their ability to trust themselves, their bodies and the birth process." (17)¹

Notwithstanding the midwife's fundamental commitment to keeping birth normal is an acknowledgement that there are situations when VBAC is contraindicated and ERCS should be recommended.

Contraindications to VBAC

The contraindications to a woman planning a VBAC are generally accepted by other guidelines and professional organizations to be:

- Previous classical or inverted T uterine scar.
- Previous hysterotomy or myomectomy entering the uterine cavity.
- Previous uterine rupture.
- Presence of a contraindication to labour such as placenta previa or transverse lie.
- A woman declining VBAC and requesting a caesarean section. (7,18)

Limitations of Available Research

Past research has focused on the risks and benefits of VBAC compared with ERCS. However, a significant portion of VBAC research remains beset by a lack of rigorous methodology, limited comparability of groups assessed, and imprecise and non-standard definitions of important outcomes. (8,19,20)² Observational studies provide the bulk

¹For further practical guidance on presenting balanced and understandable information on risk, see Risk assessment and risk distortion: finding the balance, RG Jordan and PA Murphy (2009). (16)

Table 2: Risk of Complications by Method of Delivery (13)

Outcome	Absolute Risk		Direction of Effect	Relative Risk VBAC vs ERCS (95% CI)
	Planned VBAC	ERCS		
Maternal death	0.004/1000	0.013/1000	Risk decreased by VBAC	0.33 (0.13-0.88)
Uterine rupture	4.7/1000	0.26/1000	Risk increased by VBAC	20.74 (9.77-44.02)
Hysterectomy	1.7/1000	2.8/1000	No significant difference between VBAC and ERCS	0.65 (0.40-1.06)
Blood transfusion	9/1000	12/1000	No significant difference between VBAC and ERCS	0.81 (0.57-1.15)
Perinatal death*	1.3/1000	0.5/1000	Risk increased by VBAC	1.82 (1.24-2.67)
Neonatal death**	1.14/1000	0.55/1000	Risk increased by VBAC	2.06 (1.35-3.13)

*term deliveries, 20 weeks gestation to first 7 days of life

** term deliveries, first 28 days of life

of current evidence on the risks and benefits of VBAC and ERCS. While a non-randomized study design introduces a significant potential for bias, consequently limiting the reliability and validity of findings, a randomized study comparing mode of delivery has not been conducted and may not be feasible. Observational research may not be generalizable to all practice environments, nor Ontario midwifery care specifically.

While flawed, the growing body of evidence comparing outcomes associated with VBAC and ERCS offers increasingly precise estimates of effect. A systematic review published in 2010 by Guise et al offers a particularly valuable contribution to the VBAC evidence base, with pooled sample sizes of greater than 400 000 women for select outcomes. Large studies are particularly important when looking at rare events such as maternal death and uterine rupture. In the case of maternal death, Guise et al included 12 studies with 402 883 women; while maternal deaths were rare in both

groups, the large sample size provides improved power to detect the reduction in maternal death ($p=.027$) experienced by women attempting VBAC, compared to women undergoing ERCS. (13) While many findings of Guise et al 's meta-analysis were consistent with previous research, their increased precision permits midwives to have greater confidence in the evidence they share with women in their care.

The factors contributing to the decline in VBAC and subsequent rise in CS are not well understood and may be affecting decision-making at the level of the client, health care provider, hospital, and policy. (13) Researchers have also had difficulty predicting which women will experience the rare adverse outcomes associated with VBAC or ERCS (see Table 2). (21) Given the low absolute risk of serious complication and the low relative risks associated with each predictive factor, it is unlikely midwives will be able to accurately predict outcomes such as uterine rupture in any particular woman.

² For instance, the manner in which uterine rupture is defined in a given study (whether or not dehiscence is included and how uterine dehiscence is defined) can greatly affect reported rates of uterine rupture and associated morbidity. Also, many studies compare actual route of delivery, rather than intended route, meaning that women who intended to labour but have a caesarean, or women who go into labour before a planned caesarean, could be misclassified and their outcomes counted in the wrong research study arm. Such misclassification masks potential adverse effects of desiring one route of delivery but having another.

BENEFITS AND COMPLICATIONS OF VBAC COMPARED WITH ERCS

Maternal Outcomes

Maternal Mortality

Death is a very rare outcome of pregnancy among women with prior CS, corresponding to an incidence of approximately 10/100 000 when all studies were combined in meta-analysis. The largest meta-analysis to date estimated an absolute risk of maternal mortality of 4/100 000 for planned VBAC vs. 13/100 000 for ERCS. (13) However, other individual studies have found no significant difference in maternal mortality rates between groups of women planning VBAC and planning ERCS. (22,23)

Uterine Rupture

Though rare, uterine rupture is a significant risk associated with having had a previous CS. Evidence continues to suggest that women who plan a VBAC experience a greater risk of uterine rupture than women planning ERCS.

Incidence of Uterine Rupture

The large meta-analysis by Guise and colleagues (2010) identified 4 studies reporting uterine rupture outcomes based on mode of delivery. It suggests the absolute risk of uterine rupture for all women

with a prior CS regardless of route of delivery is 3/1000 (95% Confidence Interval 2.3-4.1/1000). Risk of uterine rupture for women choosing VBAC was 4.7/1000 (95% CI 2.8-7.7/1000) compared to 0.26/1000 (95% CI 0.09-0.82/1000) for ERCS.(13) It is important to note that the absolute risk for either choice remains < 0.5%.

Secondary analysis of data from a large case-control study published in 2005 by Macones et al assessed the incidence of uterine rupture and associated risk factors. Investigators found 134 cases of uterine rupture among women choosing VBAC, equivalent to an absolute risk of 9.8/1000 (95% CI 8.1-11.4/1000). (24) See Table 3 for a comparison of studies examining risk of uterine rupture by mode of delivery.

Outcomes of Uterine Rupture

Rupture of the uterus can be a catastrophic event for both mother and baby and requires emergency medical and surgical intervention. Despite this, maternal and perinatal outcomes are largely favourable. In the studies analysed by Guise et al, 6% of uterine ruptures were associated with neonatal death. (13) Among the 17 898 planned VBACs included in Landon et al's prospective study, rupture-associated perinatal death occurred in only 2 of 124 ruptures (1.6%). (23) In a retrospective study from Norway of 18 794 births after a prior CS,

Table 3: Risk of Uterine Rupture by Method of Delivery

Type of Study	Absolute Risk		Direction of Effect	Relative Risk VBAC vs ERCS (95% CI)	Source
	Planned VBAC	ERCS			
Guise et al Meta-analysis of 4 studies N=47 202	4.7/1000	0.26/1000	Risk increased by VBAC*	20.74 (9.77-44.02)	(13)
Macones et al Retrospective cohort study N = 25 005	9.8/1000	0.4/1000	Risk increased by VBAC*	21.1 (8.6-51.5)	(24)

* P < .001

perinatal death occurred in 3.7% of cases of uterine rupture. Hysterectomy associated with uterine rupture occurred in 3.8% of cases of rupture. (25) Given the low likelihood of uterine rupture, and the low likelihood that uterine rupture will lead to adverse maternal or perinatal outcomes, the ultimate risk of serious or lasting complications occurring as a result of attempted VBAC is low.

Predictive Factors for Uterine Rupture

Researchers have attempted to identify the presence or absence of factors that could be used to accurately predict the relatively small proportion of women who will experience a uterine rupture during VBAC in an effort to improve selection of candidates for VBAC and potentially decrease risks. (21) In the study published by Macones et al the only variable that remained significantly associated with uterine rupture after adjustment for other factors was prior vaginal delivery, which had a protective effect (Odds Ratio 0.38, 95% CI 0.23-0.62). (24) Guise's much larger systematic review also demonstrated decreased risk of uterine rupture with interdelivery intervals > 24 months. Researchers have not yet developed any scoring models able to accurately predict which women are more likely to experience uterine rupture. (13) Specific predictive factors are discussed in greater detail below.

Other Considerations

Many of the potential complications of ERCS are risks associated with all CS deliveries, and have been documented in other guidelines. (10) Meta-analysis suggests rates of hysterectomy, hemorrhage, and transfusion do not differ significantly between women planning a VBAC and those planning ERCS. (13) Women choosing VBAC may experience fewer postpartum fevers (RR 0.73, CI 0.68-0.78) (13,24) and shorter hospital stays. (26)

Women's Experiences

Recent studies have examined women's experience of CS compared to vaginal delivery. The Maternity Experiences Survey sampled 6421 women in Canada to learn more about their experiences surrounding labour, birth, mother-infant contact,

and breastfeeding. Women who had CS reported "less optimal" mother-infant contact, such as skin-to-skin contact and were more likely to experience practices that do not support breastfeeding, though there is little reason for these practices to differ by mode of delivery, unless a baby is admitted to the NICU. (26)

An earlier study suggested that one benefit of a planned VBAC may include the woman's feeling of a sense of control in the decision-making process. (27) In another study, women who underwent VBAC experienced less postpartum discomfort and described a feeling of wellness sooner than women recovering from CS. (28)

Choosing a VBAC gives women the opportunity to experience normal physiologic labour and birth and minimize intervention. The role of midwifery is "to understand, promote, and facilitate physiologic processes, and to intervene only when necessary." (17) Supporting women who plan a VBAC is consistent with this role.

Long-Term Considerations

Pelvic Floor Health

Existing evidence does not allow estimations of the risks or benefits of VBAC vs ERCS with respect to pelvic floor morbidities, including pelvic organ prolapse and urinary and anal incontinence, due to the absence of research evaluating these outcomes among VBAC populations. The most relevant evidence compares pelvic floor morbidities among women who have had CS only, women who have only delivered vaginally, and women who have had both caesarean and vaginal deliveries.

While imaging studies have demonstrated nerve and tissue damage associated with vaginal delivery and parity, the clinical importance of these findings is unclear, as there is no apparent cause-effect relationship between radiologic signs of pelvic floor damage and manifestations of symptoms, nor does CS provide a clear and consistent protective effect. (29-31) Research suggests that women who deliver exclusively by CS are less likely to experience urinary incontinence than women who have had exclusively vaginal deliveries (32-34) or both vaginal and caesarean deliveries. (35)

Press et al conducted a systematic review comparing prevalence of postpartum urinary incontinence after CS and vaginal deliveries. For cohort studies with follow-up more than one year postpartum, women who had a CS were slightly less than half as likely to experience symptoms of stress incontinence compared with women who had vaginal deliveries (98/1000 compared to 230/1000), (OR 0.44, 95% CI 0.33-0.60); risk of developing either severe stress incontinence or urge incontinence was equivalent regardless of mode of delivery. (32)

Despite the reduction of risk among women who delivered exclusively by CS, many still experienced symptoms – in one study conducted at 12 years post-delivery, prevalence of urinary incontinence among women who had only CS was 40%. The rate of urinary incontinence experienced by women who had both vaginal deliveries and CS (59.4%) was similar to that experienced by women who had all deliveries vaginally (54.7%) (p = .308). (35)

Studies assessing postpartum anal incontinence in women who have had both CS and vaginal deliveries suggest that mode of delivery is not clearly associated with risk of long-term anal or fecal incontinence. (29,34-36)

A limited body of research suggests a strong and statistically significant association between pelvic organ prolapse and vaginal delivery. (37-39) Using data from Swedish health registries, researchers found that women who had delivered exclusively by CS experienced a significantly lower absolute risk of in-patient diagnosis of pelvic organ prolapse (2.2/1000) than women who had undergone both caesarean and vaginal deliveries (7.3/1000) (p < .001). (37)

Neonatal/Perinatal Outcomes

The absolute risk of adverse neonatal or perinatal outcomes is estimated to be very small for women who have had a previous CS, whether or not they plan VBAC or ERCS. Neonatal benefits of VBAC include early skin-to-skin contact and earlier initiation of breastfeeding; some evidence also suggests that vaginal birth is associated with higher rates of exclusive breastfeeding at 3 and 6 months compared to CS. (26) For all caesarean deliveries,

there is a small risk to the baby of laceration (0.5% - 1.5%). (40,41)

Neonatal/Perinatal Mortality

Though evidence is conflicting, most meta-analyses point to a higher rate of perinatal or neonatal mortality among women planning VBAC compared to women who choose ERCS. A meta-analysis of high and medium quality studies found a perinatal death rate (20 weeks' gestation to first 7 days of life) of 1.3/1000 for planned VBAC, compared with 0.5/1000 for ERCS (p = .002) and a neonatal death rate (first 28 days of life) of 1.1/1000 for planned VBAC vs 0.6/1000 for ERCS (p = .001). (13) An earlier meta-analysis found fetal or neonatal death to be more frequent with planned VBAC (5.8/1000), compared to ERCS (3.4/1000, p = 0.001). (22)

Conversely, Landon's prospective study found that rates of neonatal death were not significantly different between planned VBAC and ERCS groups (0.08% vs. 0.05%, p = 0.19). (23) Since a small proportion of uterine ruptures are associated with neonatal or perinatal death, the increased risk of perinatal or neonatal mortality associated with VBAC might be attributable to the greater likelihood of uterine rupture experienced by women who choose VBAC over ERCS. (13) In the data collected by Al Zirqi et al perinatal death occurred in 3.7% of planned VBACs that resulted in uterine rupture and 0.1% of planned VBACs that were rupture-free (p < .001). (25)

Hypoxic-Ischemic Encephalopathy

Although a handful of studies have consistently indicated a higher incidence of neonatal hypoxic-ischemic encephalopathy (HIE) among women choosing VBAC, there is little consistency in the measurements used throughout this research. Therefore, the associations between labouring after a prior CS and HIE and related outcomes are not clear. Landon et al found a higher incidence of HIE in the VBAC group (12/15 338 vs. 0/15 014 in the ERCS group), with 7 of these cases occurring in conjunction with uterine rupture. (23) In the data collected by Al Zirqi et al HIE was significantly more prevalent among women who laboured and experienced uterine rupture (3.7%) than those who laboured without rupture (0.1%) (p < .001). (25)

Respiratory Morbidity

Compared to VBAC, ERCS has been associated with neonatal respiratory morbidity at term, though overall estimates of effect relative to mode of delivery are hindered by inconsistent definition and classification of respiratory conditions. Studies included in the meta-analysis performed by Guise presented conflicting information on whether VBAC or ERCS resulted in more transient tachypnea of the newborn (TTN). (13) In one recent cohort study, infants of mothers choosing ERCS were significantly more likely to require oxygen in the delivery room and newborn intensive care unit (NICU) than infants born by VBAC, and less likely to require bag-mask ventilation and endotracheal intubation.

After controlling for confounding variables, infants born to women undergoing ERCS were also more likely to be admitted to the NICU than infants born by VBAC (adjusted OR 2.93, 95% CI 1.28-6.72). (42) A prior retrospective study of 989 women undergoing VBAC or ERCS found an increased risk of respiratory problems (adjusted OR 2.3, 95% CI 1.4-3.8) and TTN (adjusted OR 2.6, 95% CI 1.5-4.5) in the ERCS group. (43)

Long-Term Considerations

There is little research on the relationship between VBAC and ERCS and health and development in childhood. However, observational studies comparing women having elective CS, compared to vaginal deliveries, particularly those that include women with previous CS, provide some limited data pertinent to the long-term paediatric implications of VBAC and ERCS.

A meta-analysis of 21 studies of the relationship between CS and asthma suggests a weak association (OR 1.18, 95% CI 1.05-1.32). The generalizability of these findings is limited, given marked heterogeneity of study populations and methodological differences among the studies included. A meta-analysis of 6 studies of the

relationship between CS and allergic disorders other than asthma found an OR of 1.32 (95% CI 1.12-1.55) for food allergy/food atopy and 1.23 (95% CI 1.12-1.35) for allergic rhinitis. No significant association between CS and eczema or atopic dermatitis was found.

The biological mechanisms linking mode of delivery to long-term asthma or allergy are not currently known; one hypothesis is that delivery method influences immune system development, either by the direct effect of labour on immune regulatory cells or through the exposure to vaginal microbes. Associations between mode of delivery and asthma or allergy may also be confounded by breastfeeding; in some of the studies included in the above meta-analyses, CS was also associated with decreased rates of initiation and duration of breastfeeding. (44)

Multiple Caesarean Sections

While evidence regarding the outcome of multiple CS is limited, meta-analysis has identified a number of complications associated with multiple deliveries by CS:

- Hemorrhage/transfusion: overall rates of hemorrhage and transfusion with multiple CS were less than 5%, but risk appears to increase with the number of CS. (13)
- Adhesions: incidence of adhesions increased with the number of CS. This could increase the risk of a more difficult repeat CS, postoperative complications, or complications with future gynaecological surgeries. (45,46)
- Surgical injury: bladder, bowel, and ureter injury are rare outcomes that appear to increase with multiple CS. (13)
- Abnormal placentation: incidence of placental abruption and placenta previa and concomitant risk of morbidity for mother and fetus increases with number of prior CS. (45)

- Hysterectomy: likelihood of hysterectomy increases with number of prior CS (see Table 4). (13)

Research suggests the risk of placenta accreta increases with each CS (see Table 5). (47) In one large observational study, incidence of placenta accreta was 0.24% in women having their first CS, and 2.13%, 2.33%, and 6.74% for fourth, fifth, and

sixth or more CS, respectively. (48) The maternal and perinatal morbidity attributable to placenta accreta is substantial: antepartum hemorrhage and associated preterm birth; postpartum hemorrhage and associated complications, including disseminated intravascular coagulation, shock, and death. Placenta accreta is the most common indication for CS-associated hysterectomy in one large, US-based prospective study. (49)

Table 4: Likelihood of Hysterectomy Based on Number of Prior Cesarean Sections (13)	
Number of prior CS	Range of odds ratios in studies included in meta-analysis
1	0.7 to 2.14
≥ 1	1.4 to 7.9
≥ 2	3.8 to 18.6

Table 5: Likelihood of Placenta Accreta Based on Number of Prior Cesarean Sections (47)	
Number of prior CS	Odds ratio (95% CI)
1	-
2	1.3 (0.7-2.3)
3	2.4 (1.3-4.3)
4	9.0 (4.8-16.7)
5	9.8 (3.8-25.5)
≥ 6	29.8 (11.3-78.7)

Table 6: Incidence of Placenta Accreta among Women with Placenta Previa (47)

Number of prior CS	%
1	3.3
2	11
3	40
4	61
5	67
≥ 6	67

In women with previous CS, the likelihood of placenta accreta is particularly high when placenta previa is present (see Table 6), though the linear relationship between risk of placenta accreta and number of CS persists regardless. (47) The association between placenta previa and placenta accreta is attributed to the poorer decidualization of the lower segment of the uterus. (50)

Decision models have been used to create probability estimates of the downstream consequences of either VBAC or ERCS for women with a prior CS. When women were planning at least two subsequent pregnancies, the cumulative risk of hysterectomy was lower with a strategy of VBAC (907/100 000) than ERCS (1465 /100 000). If other outcome variables were included, such as transfusion and endometritis, the model is even more supportive of VBAC. (51)

Women who are planning to have more than one child after a prior CS may especially benefit from choosing VBAC over ERCS. Risk of maternal morbidity increases with number of prior CS, especially for women with more than three prior CS, while there are few risks associated with cumulative VBACs. (52) The long-term reproductive choices of women should be incorporated into counselling on the risks and benefits of VBAC vs ERCS and the conversation should include a

discussion of risks of major morbidity associated with caesareans in future pregnancies. (51,53) Due to the increased risks associated with multiple CS, VBAC should be recommended to women with history of LSCS who are planning to have 2 or more additional children.

Recommendations

Recommendations 1-3 presuppose an absence of contraindications to vaginal birth/VBAC (see list of contraindications on page 4).

- 1. The risks and benefits of VBAC compared with ERCS should be discussed with women who have a history of CS. This discussion, including the woman's decision, should be appropriately documented in the woman's chart. II-2B**
- 2. Recommend planned VBAC as a means to achieve the benefits of normal childbirth, while being sensitive to each woman's concerns and values and respecting her informed decision. III-C**
- 3. Recommend planned VBAC for women intending to have more than one child after the previous CS. Increased maternal and perinatal morbidity associated with ERCS and multiple CS has long-term health implications. II-2B**

Summary Statement: Benefits and Complications of VBAC & ERCS

VBAC

The best available evidence suggests VBAC is a safe choice for the majority of women with a prior CS. II-2B

VBAC provides the opportunity for women to experience woman and family-centred maternity care, promotes normal physiologic labour and birth, and minimizes unnecessary interventions. III-C

Short-term neonatal benefits include: early skin-to-skin contact, early initiation of breastfeeding, and shorter hospital stays. Long-term benefits include an increase in exclusive breastfeeding at 3 and 6 months. II-2C

Maternal benefits include a lower risk of hysterectomy, transfusion and endometritis. II-2B

VBAC is associated with a higher risk of uterine rupture than ERCS, although the most up-to-date estimates suggest the absolute risk remains below 0.5%. While rupture of the uterus can be a catastrophic event requiring emergency medical and surgical intervention, it infrequently results in long-term damage to mother or infant. No models have been able to accurately predict which women are more likely to experience uterine rupture. II-2B

Neonatal and perinatal complications associated with VBAC may include an increased risk of perinatal mortality, with an absolute risk of 1.3/1000 for VBAC compared to 0.5/1000 for ERCS according to a recent meta-analysis; other studies have found no significant difference. The absolute risk for fetal or neonatal mortality is estimated to be very small for women who have had a previous CS, whether or not they plan VBAC for their subsequent pregnancy or have ERCS. II-2B

ERCS

Compared to VBAC, ERCS is associated with a lower risk of uterine rupture and decreased rates of neonatal mortality. II-2B

ERCS is associated with the same increased risks of maternal morbidity as CS in general. It is also associated with an increased risk of minor neonatal respiratory morbidity. II-2B

Women who deliver exclusively by CS are less likely to experience urinary incontinence and pelvic organ prolapse than women who have had both vaginal and caesarean deliveries. II-2B

Multiple CS increases the risk of hemorrhage, adhesions, surgical injury, hysterectomy, infection, placenta previa, and placenta accreta. Increased maternal morbidity associated with ERCS and multiple CS have long-term health implications for women, especially those who plan to have more than one child after the current CS. II-2B

CAN VBAC OUTCOMES BE PREDICTED?

The overall likelihood that an attempted VBAC will occur as planned is 60% to 80%. (13,54). Among women receiving care from Ontario midwives in 2006-08, 71% of women with a history of CS who opted for VBAC ultimately delivered vaginally. (11) Many attempts have been made to accurately categorize women based on the likelihood that a planned vaginal birth will occur, using algorithms or scoring systems that assess predictive factors. (55) However, there is no compelling evidence that any one algorithm is valid in a wide range of settings or populations.

It is similarly difficult to predict which women will experience rare adverse outcomes associated with VBAC and ERCS. With the exception of previous obstetrical history, the presence or absence of factors detectable at the time of or prior to labour have not proven useful in identifying the relatively small proportion of women at term who will experience a uterine rupture during VBAC. (21) Given the low absolute risk of complication, including uterine rupture, and the low relative risks associated with each predictive factor, it is unlikely midwives will be able to accurately predict which women face a greater likelihood of adverse outcomes.

The low risk of complication must also be considered when interpreting the available evidence on the prediction of adverse outcomes, as much of the research discussed below uses odd ratios to express effect size, with estimates of absolute risk

available in only a handful of cases. Both relative risks and odd ratios are used to indicate how many times higher or lower the risk of an outcome is in one group (e.g. women planning VBAC) compared to another group (women planning ERCS).

Though odds ratios tend to approximate true relative risks when outcomes are rare (i.e. they occur in < 10% of cases), their utility in clinical practice may nevertheless be limited. (56) In many instances where mode of delivery may be associated with an increase in likelihood of certain events, absolute risk of harm remains low. In the large meta-analysis by Guise and colleagues, the absolute risk of uterine rupture among women choosing VBAC was 4.7/1000 (95% CI 2.8-7.7/1000) and 0.26/1000 (95% CI 0.09-0.82/1000) among women choosing ERCS. The relative risk of uterine rupture in the Guise meta-analysis (20.74, 95% CI 9.77-44.02) suggests that women choosing VBAC experience a risk of uterine rupture 20 times higher than the risk of uterine rupture experienced by women choosing ERCS; nevertheless, absolute risk of uterine rupture is < 0.5% regardless of mode of delivery. (13) Using a relative measure of comparison (such as a relative risk or an odds ratio) without also discussing absolute risk in informed choice discussions may hinder understanding of the magnitude of the complication being discussed.

Known Predictive Factors

There is strong evidence to suggest the following factors are associated with likelihood of VBAC and/or maternal complications.

Table 7: Predictive Factors

KNOWN PREDICTORS			
There is strong evidence to suggest the following factors are associated with likelihood of VBAC and/or uterine rupture.			
<i>Predictive factor</i>	<i>Likelihood of vaginal birth</i>	<i>Likelihood of uterine rupture</i>	<i>Source(s)</i>
Prior vaginal birth	Higher	Lower	(13,21,24,52,57-62)
Delivery interval < 24 months	Not known	Higher	(13,62)
POSSIBLE PREDICTORS			
There is some evidence to suggest the following factors are associated with likelihood of VBAC and/or uterine rupture. There is insufficient evidence to make definitive conclusions with respect to the role of these factors.			
<i>Predictive factor</i>	<i>Likelihood of vaginal birth</i>	<i>Likelihood of uterine rupture</i>	<i>Source(s)</i>
Induction of labour	May be lower	May be higher	(13,23,24,63,64)
Augmentation of Labour	May be lower	May be higher	(13,23,24)
Maternal BMI \geq 25-30	May be lower	No difference noted	(13,65-67)
Maternal age \geq 35	May be lower	Conflicting evidence, may be slightly higher	(13,68)
FACTORS OF UNKNOWN SIGNIFICANCE			
It is not currently known whether or not the presence of these factors influence the likelihood of either VBAC or maternal or fetal/neonatal complications.			
			<i>Source(s)</i>
Thickness of lower uterine segment			(69,70)
CS closure technique			(13,71,72)
Multiple CS			(61,73-75)
Unknown uterine scar			(23,76)
Twin gestation			(77,78)
Pregnancy beyond 40+0 weeks' gestation			(57,79,80)
Macrosomia			(13,81,82)

Prior Vaginal Birth

Likelihood of Vaginal Birth: Higher

Having had a prior vaginal birth is a consistent positive predictor of VBAC success in the current pregnancy, especially if past VBAC has occurred. In one study, rate of VBAC among women with no prior vaginal delivery was 65%, 83% for women who had a vaginal delivery before their past CS, and 94% for women with a past VBAC. (81) In the meta-analysis performed by Guise et al women with prior VBAC were three to seven times more likely to have a VBAC for their current delivery, compared to women choosing VBAC who had not had a prior vaginal delivery. (13) If labour is induced, limited evidence suggests a higher likelihood of VBAC among women who have had at least one prior vaginal delivery (OR 6.8, 95% CI 3.04-13.9). (13)

Likelihood of Uterine Rupture: Lower

A history of prior vaginal birth either before or following a previous caesarean has also been associated with a decreased rate of maternal morbidity associated with VBAC. (57-59) Overall, studies have found adjusted ORs ranging from 0.26-0.62 for uterine rupture during VBAC among women with prior CS and prior vaginal deliveries, compared with women with prior CS and no prior vaginal deliveries. (21,24,60-62) Prior VBAC is also associated with a decreased risk of uterine rupture. (52)

Interdelivery Interval Less than 24 Months

Likelihood of Uterine Rupture: Higher

In the largest meta-analysis available, a delivery interval of less than 24 months increased the risk of uterine rupture, with ORs ranging from 2.05 to 2.65 noted by Guise and colleagues. (13) A Canadian cohort study of 1527 women found an adjusted OR for uterine rupture in women with an interdelivery interval of \leq 24 months of 2.65 (95% CI 1.08-6.46). Uterine rupture occurred at a rate of 4.8% among women with an interdelivery interval of \leq 12 months, 2.7% with an interval of 13-24 months, 0.9% with an interval of 25-36 months, and 0.9% with an interval of $>$ 36 months ($p = .04$). Women with a prior vaginal delivery were excluded from the study. (62)

Possible Predictors

While there is some evidence to suggest the following factors are associated with likelihood of VBAC and/or maternal complications, there is insufficient evidence to make definitive conclusions with respect to the role of these factors.

Induction of Labour

Research on the effects of induction of labour in women choosing VBAC is conflicting. Studies conducted in the 1980s found no difference in likelihood of CS or uterine rupture when women with previous CS who were induced were compared to women with previous CS who began labour spontaneously. (83-85) Later research suggested lower rates of VBAC among women with previous CS undergoing induction, and a higher likelihood of uterine rupture. (23,86-88) Due to variations in timing and methods of induction, the overall risk of uterine rupture attributable to induction is difficult to assess. Researchers have also looked to study design to explain inconsistencies in outcomes, noting methodological differences that could impact the association between induction and likelihood of VBAC and/or uterine rupture, including whether women were stratified by history of vaginal birth or cervical status at the time of induction. (63,89)

Likelihood of Vaginal Birth: May Be Lower

Meta-analysis by Guise et al of 27 fair quality studies estimated a pooled VBAC rate of 63% (95% CI 58-67%) after induction of labour by any mechanical or pharmacological method, ranging from 54% with Foley catheter to 62% with oxytocin induction and 63% with prostaglandin induction (with or without oxytocin augmentation). (13)

A recent prospective study comparing outcomes among 11 778 women with one prior CS who experienced either induction of labour or spontaneous labour found an association among obstetric history, cervical status and likelihood of vaginal birth. Women with no prior vaginal delivery who were induced (with oxytocin, or by artificial rupture of membranes) had a VBAC rate of 51% vs. 64.7% for those with spontaneous labours. For women who had a prior vaginal delivery, the

Table 8: VBAC Outcome by Induction Status (63)

Obstetric History	Likelihood of Vaginal Birth		Odds ratio (95% CI)	P-value
	Induced Labour*	Spontaneous Labour		
Prior vaginal delivery	83.3%	88.3%	0.66 (0.56-0.78)	< 0.001
No prior vaginal delivery	51.0%	64.7%	0.57 (0.51-0.63)	< 0.001

* Induction by artificial rupture of membranes, prostaglandin only, or oxytocin with or without prostaglandin

rates were 83.3% and 88.3% respectively (see Table 8). Women with unfavourable cervixes were less likely to experience VBAC than women entering spontaneous labour (adjusted OR 0.46 95% CI 0.39-0.53) and women with favourable cervixes who underwent induction had similar rates of VBAC as women in spontaneous labour (adjusted OR 1.19 95% CI 0.93-1.53). (63)

There is little available research assessing the effectiveness of Foley catheter use for labour induction. One study, conducted among women in Israel in their second pregnancies who had undergone CS in their first pregnancy, found no difference in likelihood of vaginal birth with use of transcervical Foley catheter and prostaglandin for cervical ripening. Women undergoing cervical ripening by Foley catheter were more likely to undergo CS than women who entered labour spontaneously (49.1% vs. 35.2%, $p < 0.01$). (90) Another study compared VBAC rates for induction

by Foley catheter compared to spontaneous labour, finding lower rates of vaginal delivery in the Foley catheter group (51% compared to 65%). In this study, the researchers did not adequately control for baseline or confounding variables. (91)

Likelihood of Uterine Rupture: May Be Higher

Guise et al estimated pooled rates of uterine rupture of 1.1% for oxytocin, 2% for prostaglandins, and 6% for misoprostol. (13) The larger studies included in this meta-analysis are described in greater detail later. While the overall direction of this data suggests that risk of uterine rupture may be higher when oxytocin and/or prostaglandins are used to induce labour, the magnitude of this risk is difficult to quantify.

Among the 17 898 women who attempted VBAC in the four year prospective cohort study conducted by Landon et al of the Maternal-Fetal Medicine Units Network, induction of labour was associated with a significantly greater risk of uterine rupture,

regardless of induction method (Tables 9 and 10). Women undergoing induction with prostaglandins, with or without oxytocin, experienced the highest likelihood of uterine rupture (OR 3.95, 95% CI 2.01-7.79). (23) A prospective study of 11 778 women with one prior CS found induction of labour by artificial rupture of membranes, prostaglandin only, or oxytocin with or without prostaglandin increased risk of uterine rupture only among women with no prior history of vaginal delivery (Table 9). (63) Macones et al noted a similar association in

a large case-control study, with increased risk of uterine rupture observed when prostaglandin and oxytocin were used sequentially (adjusted OR 4.54, 95% CI 1.66-12.42), but not when prostaglandin or oxytocin alone were used for induction. (24) Guise et al suggest these findings may be evidence of a broader trend towards increased risk of uterine rupture among women whose labours are augmented with oxytocin following induction with prostaglandin. (13) A secondary analysis of the Macones study provides some evidence of an

Study design	Absolute Risk of Uterine Rupture		P-value	Source
	Induced Labour	Spontaneous Labour		
Meta-analysis of 7 studies N = 5276	15/1000	7/1000	Not known	(13)
Retrospective cohort study N = 20 095	9/1000	5/1000	0.052	(88)
Prospective cohort study N = 17 898	10/1000	4/1000	< 0.001	(23)
Prospective cohort study N = 11 778	11/1000	6/1000	0.015	(63)
Stratified by obstetric history				
No prior vaginal delivery	15/1000	8/1000	0.02	(63)
Prior vaginal delivery	6/1000	4/1000	0.42	(63)

Type of labour	Rate of uterine rupture (%)	Odds ratio	P-value
Spontaneous	0.4	1.00	n/a
Induced	1.0	2.86 (1.75 – 4.67)	< 0.001
Mechanical dilation, with or without oxytocin	0.9	2.48 (1.30 – 4.75)	0.004
With oxytocin alone	1.1	3.01 (1.66 – 5.46)	< 0.001
With prostaglandins, with or without oxytocin	1.4	3.95 (2.01 – 7.79)	< 0.001

increased risk of uterine rupture with higher doses of oxytocin, and a dose-dependent response, with risk increasing with dose. (64)

The data collected in the observational studies described above reflect a reality of clinical practice: there are numerous potential combinations of method, dosage and timing of induction. Given that uterine rupture is a rare outcome, researchers have struggled to assess the risks attributable to specific factors. (89) It is especially difficult to make assertive conclusions about the risks of prostaglandin use, as few women in the studies noted above were induced with prostaglandins alone. Further research is needed to quantify the relative risks of various means of induction with confidence and precision.

Other Considerations

Some women choosing VBAC may be interested in alternatives to induction, such as sweeping of membranes. One small study of 213 women found that sweeping membranes at term in women planning VBAC did not shorten pregnancy duration, or affect induction or repeat CS rates. (92) However, other larger studies not specific to VBAC have found sweeping membranes to be effective in reducing the duration of pregnancy and reducing the need for induction among nulliparous women (93) or those with an unfavourable cervix. (94)

There is little evidence regarding the safety and effectiveness of commonly used herbs, homeopathics, acupuncture and castor oil for induction and/or augmentation of labour for women planning VBAC. This lack of evidence should be discussed with clients before considering their use.

Augmentation of Labour

Likelihood of Vaginal Birth: May Be Lower

Guise et al identified six studies reporting rates of VBAC with oxytocin used only for augmentation of labour, with a pooled rate of VBAC of 68% (95% CI 64% - 72%); the strength of this evidence is low. (13) Dystocia, which creates the need for augmentation, may be the causal factor influencing the likelihood of vaginal birth, rather than augmentation itself.

It is possible that the augmentation may actually increase the likelihood of vaginal birth when dystocia is identified, though it would be difficult to clearly differentiate this relationship in research settings. Further discussion of labour progress may be found in intrapartum management considerations.

Likelihood of Uterine Rupture: Conflicting Evidence – No Difference or Higher

Guise et al's meta-analysis did not find an increased risk of uterine rupture with oxytocin augmentation of spontaneous labour for women with a history of prior CS. (13) Macones et al also found no significant association between augmentation of labour and uterine rupture, when women whose labours were augmented were compared to women who laboured spontaneously. (24) However, a large prospective study of risk factors for uterine rupture among 17 898 women attempting VBAC found oxytocin augmentation of labour associated with a significantly greater risk of uterine rupture when women whose labours were augmented were compared to women who labour spontaneously (OR 2.42, 95% CI 1.49-3.93). (23)

Dystocia may be the true causal factor influencing risk of uterine rupture in augmented labours, and the relationship between oxytocin augmentation and increased risk of uterine rupture may simply reflect the position of augmentation on the causal pathway. Among a subset of women who had undergone multiple previous CS, augmentation with oxytocin was associated with only a slight increase in uterine rupture, compared to women whose labours were not augmented (OR 1.46, 95% CI 1.02-2.10). (61)

Maternal Body Mass Index \geq 25-30

Likelihood of Vaginal Birth: May Be Lower

Research suggests that women who are considered overweight (body mass index [BMI] \geq 25) or obese (BMI \geq 30) may experience a lower likelihood of vaginal birth than women with BMI $<$ 25. Research studies have used different BMI levels to assess outcomes.

Women with BMI \geq 30 are at a greater risk of undergoing CS as well as having an increased risk of

complications from CS regardless of past obstetric history. (95) Research also suggests that maternal pre-pregnancy BMI is an independent factor associated with likelihood of VBAC. In one study of 510 women with a single CS, women with pre-pregnancy BMI ≥ 30 were less likely to experience VBAC compared to women with a BMI of 20-25 (546/1000 vs. 705/1000). Women with BMI < 19.8 were most likely to experience a planned VBAC (850/1000). After controlling for other factors, including recurring indications for CS, increasing BMI was significantly associated with a lower rate of vaginal birth. (65) In a retrospective study of 6718 German women with one prior CS who chose to labour, women with a BMI ≥ 25 were significantly less likely to have a planned VBAC than women with BMI < 25 ; the rate of VBAC success declined with increasing body mass (see Table 11). When the analysis was adjusted for maternal age, birth weight, induction of labour, and pre-eclampsia, BMI ≥ 25 remained associated with a lower rate of VBAC. (66)

Similar findings were reported in a secondary analysis of data from a large prospective study: Likelihood of VBAC decreased with increasing BMI, with women with BMI ≥ 40 twice as likely to experience repeat CS than women with BMI ≤ 25 (39.3% vs. 15.2%). (67) Midwives should note that research on intervention rates for women with BMI ≥ 25 is potentially confounded by a “labelling effect”. Researchers have noted a tendency to intervene sooner and more often in women with BMI ≥ 25 , observing higher rates of use of oxytocin, epidural analgesia, forceps and vacuum extraction,

and earlier decisions to perform CS persisting after adjusting for the higher prevalence of gestational diabetes, pre-eclampsia and macrosomia in this group of women. (96)

Likelihood of Uterine Rupture: No Difference Noted

A secondary analysis detected a non-statistically significant difference in risk of uterine rupture among women with BMI ≥ 40 , compared to women with BMIs of 18.5 - 24.9 (1.2% vs. 0.6%). (67) In the German study noted above, no association between maternal BMI and uterine rupture was found. The rate of uterine rupture was low (0.1%) across the study population, which the authors attribute to a low rate of prostaglandin use for induction ($< 1\%$) and CS closure techniques. (66)

Risks of other complication may be increased with BMI regardless of the intended route of delivery. Maternal BMI ≥ 25 is associated with increased risk of infection overall, with no difference between labour after a previous caesarean and ERCS. (13)

For more information on management of pregnancy in women with a high BMI, see AOM Clinical Practice Guideline No. 12: The Management of Women with a High or Low Body Mass Index. (97)

Maternal Age ≥ 35

Likelihood of Vaginal Birth: May Be Lower

Risk of CS is increased with advancing maternal age regardless of past obstetric history. (98) Research assessing the relationship between maternal age ≥ 35 years and the likelihood of a successful VBAC suggests a similar increased risk of repeat CS. A

Table 11: Likelihood of VBAC Success Relative to BMI (66)	
BMI (kg/m²)	Odds Ratio
< 25	1
25-29.9	0.81
30-34.9	0.66
35-39.9	0.38
≥ 40	0.39

secondary analysis of a retrospective cohort study of 25 005 women found that women ≥ 35 years who planned a VBAC were slightly more likely to have a repeat CS (OR 1.14, 95% CI 1.03-1.25). Compared to women aged 21–34, women aged 35–39 were 10% less likely and > 39 years were 18% less likely to deliver by planned VBAC ($p = 0.08$). (68)

Guise et al's systematic review found a less consistent association between maternal age and likelihood of VBAC. In 5 of 8 studies included, women under the age of 40 were more likely than women 40 and older to have a planned VBAC; in the remaining studies, there was no statistically significant relationship between maternal age and likelihood of vaginal birth. (13) As with BMI, research assessing obstetric birth outcomes relative to age may be confounded by a "labelling effect". (99)

Likelihood of Uterine Rupture: Conflicting Evidence – May Be Higher

The secondary analysis of the retrospective cohort study described above noted a similar incidence of VBAC-related maternal complications across age groups, with uterine rupture, bladder, ureter or bowel injury, and/or uterine artery laceration occurring in approximately 2-3% of women choosing VBAC. After controlling for other factors related to these complications (prior vaginal delivery, augmentation or induction of labour, and gestational age at delivery), maternal age ≥ 35 was associated with a slightly greater risk of VBAC-related maternal complications (adjusted OR 1.39, 95% CI 1.02-1.89, $p = .039$). (68)

Factors of Unknown Significance

It is not currently known whether the presence of the following factors influences the likelihood of either VBAC or maternal or fetal/neonatal complications.

Thickness of Lower Uterine Segment

In general, women with a history of caesarean section have a thinner lower uterine segment (LUS) at term. Ultrasonographic measurement of the LUS is an emerging approach to predicting a woman's risk of uterine rupture during VBAC. Measurement techniques include either measuring the thinnest

portion or the full thickness of the LUS. (69) Inter- and intra-observer accuracy of measurements have been shown to be reliable when technicians are well trained, though training specifications have yet to be developed. (70)

Measurement of the Thinnest Portion of the LUS

Studies have not yet identified a standard measurement at which the risk of uterine rupture is significantly increased. A Canadian study of 102 women with one or more previous CS suggested that women between 36 and 38 weeks' gestation who have a LUS thickness of > 1 mm at the thinnest portion are at low risk of uterine rupture. This study assessed LUS thickness at the shortest distance between the urinary bladder wall-myometrium interface and the myometrium/chorioamniotic membrane-amniotic fluid interface. (69)

Measurement of the Full Thickness of the LUS

In comparison, other Canadian research measuring the full thickness of the LUS in 236 women between 35 and 38 weeks' gestation suggested that a full LUS thickness of < 2.3 mm was associated with a significant increase in uterine rupture (9.1% vs. 0%; $p < .02$). In this study the LUS was examined longitudinally and transversely and measured at 3 different points, with the lowest value selected. (70)

The measurement of LUS thickness to determine increased risk of uterine rupture shows some promise as a screening tool. However, the research available at present has failed to identify a consistent association between LUS thickness and risk of rupture. Future research and standardization of technique may change this. This approach to predicting risk increases the use of technology and interventions during pregnancy, without substantiating data that this use of intervention will improve outcomes.

CS Closure Technique

Variation in surgical technique for caesarean section has been suggested as a factor influencing risk of uterine rupture. However, research comparing uterine rupture in women who had a prior CS with single-layer closure of the uterus and those who had a prior CS with two-layer closure

presents unclear findings. A recent Canadian case-control study found that prior single-layer closure was associated with an increased risk of uterine rupture compared to prior two-layer closure (OR 2.69, 95% CI 1.21-3.38), though birth weight and prior vaginal birth may have been confounding variables. (71)

Other studies have found no difference in risk of uterine rupture for single-layer vs. two-layer closure. (72) Guise et al's review of the available literature did not find compelling evidence to recommend against VBAC for women with single-layer closure, despite some evidence of increased risk. (13)

Multiple CS

The available research provides inconclusive information on the likelihood of VBAC among women with more than one prior CS. One study found no association between VBAC success and number of prior CS (73), while another study suggested that women with more than one prior CS experienced a rate of vaginal delivery decreased by as much as 8% ($p < 0.001$). (61) As noted previously, prior vaginal delivery consistently increases the rate of success regardless of the number of prior CS.

When compared to women with one previous CS, one large retrospective study found an increased rate of uterine rupture in women who have had two or more caesareans, corresponding to an incidence of 1.8% vs 0.9% (OR 2.30 CI 1.37-3.85). (73) However, the largest prospective study available found no significant difference in rates of uterine rupture based on number of prior CS, with rupture occurring in 0.9% of women with multiple prior CS and 0.7% of women with a single prior CS (OR 1.36 95% CI 0.69-2.69). (61)

A systematic review of the literature on women with two prior CS found a uterine rupture rate of 1.59% and a VBAC success rate of 71.7% vs a uterine rupture rate of 0.72% and a VBAC success rate of 76.5% for women with only one prior CS. Maternal morbidity was not significantly different between women with two prior CS who underwent VBAC and ERCS. There was not enough data to draw

conclusions on infant morbidity. (74)

There is very little research available on adverse outcomes associated with three or more prior CS. A 2010 study compared maternal morbidity among women with 3 or more prior CS and women with only one or two prior CS. Study participants who chose VBAC (89/860) experienced rates of vaginal delivery that were not significantly different from women with only one or two prior CS. There were no uterine ruptures. This study, although small, begins to address a significant research gap in knowledge of maternal outcomes for women who have had three or more prior CS. (75)

Unknown Uterine Scar

There is little information available on the impact of having an unknown uterine scar on adverse outcomes during VBAC. The evidence that is available does not suggest a significant increased risk of uterine rupture or decreased likelihood of VBAC. Two retrospective studies have found an approximately 0.5% rate of uterine rupture among women with an unknown scar, comparable to the risk experienced by women with a known incision. (23,76) It is important to note that a Category 2 Consult is required according to the College of Midwives of Ontario for any CS other than one documented previous LSCS. (100)

Twin Gestation

In a prospective study of 412 cases of twin gestation among women with prior CS, 64.5% of women planning VBAC delivered both twins vaginally, and 16% of women planning VBAC delivered one twin vaginally, and one twin by CS. Prior vaginal birth was not associated with a greater likelihood of vaginal delivery among women in the planned VBAC group. There was no increased risk of uterine rupture among women with twin gestation who chose to labour, compared to women who chose ERCS, but the study did not have sufficient power to adequately examine uterine rupture as an outcome. The study found comparable rates of neonatal morbidity and mortality at ≥ 34 weeks gestation between VBAC and ERCS groups. (77)

In a large retrospective cohort study that included 535 twin pregnancies, similar rates of vaginal

delivery (adjusted OR 1.1, 95% CI 0.8-1.6), uterine rupture (adjusted OR 1.2, 95% CI 0.3-4.6), and major maternal morbidity (adjusted OR 1.6, 95% CI 0.7-3.7) were found when women in twin pregnancy and singleton pregnancy groups were compared. This study did not collect data on neonatal outcomes. (78)

Pregnancy Beyond 40+0 Weeks Gestation

A retrospective cohort study (N = 11 587) compared outcomes among women with at least one prior CS who laboured at any time before their estimated date of birth (EDB) to women who laboured past 40+0 weeks' gestation. Approximately 78% of women who laboured prior to their EDB had a vaginal birth, compared to 70% of women who laboured past their EDB, corresponding to an OR of 1.36 (95% CI 1.24-1.50) after adjustment for confounders, including induction and/or augmentation of labour. There were no significant differences in uterine rupture or overall maternal morbidity between the two groups. (79)

Another study demonstrated that women with a prior CS who laboured after 41+0 weeks had a vaginal delivery rate of 65% compared to 75% for women with a prior CS who laboured prior to 41+0 weeks' gestation. (57) In an earlier small study of women with pregnancies beyond 40+0 weeks' gestation, prior vaginal birth and higher parity were positive predictors of vaginal birth. (80) The relationship between VBAC outcomes and gestational age may be influenced by the presence of other factors independently associated with decreased likelihood of VBAC, such as macrosomia (see below). To help put research into context, it is necessary to take individual women's circumstances into consideration when discussing implications of gestational age and VBAC outcomes.

Macrosomia

Macrosomia is associated with a higher likelihood of primary CS irrespective of obstetric history. (101) Research also shows a decreased likelihood of VBAC in babies weighing $\geq 4000\text{g}$; babies weighing ≥ 4500 grams are even less likely to be delivered

via VBAC compared with infants weighing 4000-4499g. (13) Though macrosomia is associated with lower likelihood of VBAC, it is very difficult to predict which babies will be more than 4000g before they are born, as neither ultrasound nor physical exam can accurately predict macrosomia. (102) As with BMI and maternal age, research assessing obstetric birth outcomes relative to birth weight may be confounded by a "labelling effect". (16)

In one study of 9960 women with a singleton gestation and a history of one previous CS, birth weight was significantly associated with likelihood of vaginal birth only in women with no prior vaginal deliveries. VBAC occurred as planned in 68% of deliveries with birth weights of $< 4000\text{g}$, and 52%, 45%, and 38% of deliveries with birth weights of 4000-4249g, 4250-4500g, and $> 4500\text{g}$ respectively. Among women who had a history of both vaginal delivery and CS, likelihood that VBAC would occur as planned was not influenced by birth weight, nor was risk of uterine rupture associated with birth weight. In comparison, women with no previous vaginal deliveries and birth weights of $\geq 4000\text{g}$ were significantly more likely to experience uterine rupture than women with no previous vaginal deliveries and birth weights of $< 4000\text{g}$ (RR 2.3, $P = .001$). (81)

A retrospective study of 2586 women assessed the association between neonatal birth weight and adverse obstetric outcomes in women planning VBAC. Women were categorized according to the birth weight of their infants ($< 3500\text{g}$, 3500-3999g, and $\geq 4000\text{g}$) and prior vaginal delivery. Birth weight was directly correlated to the rate of unplanned ERCS (19%, 28%, and 38% respectively; $p < .01$) and uterine rupture (0.9%, 1.8%, and 2.6%; $p < .05$). After adjustment for confounding variables, birth weight of $\geq 4000\text{g}$ remained associated with uterine rupture (OR 2.62, 95% CI 1.001-6.85), unplanned ERCS (OR 2.47, 95% CI 1.82-3.34), and third- and fourth-degree perineal laceration (OR 2.64, 95% CI 1.66-4.19) in women who birthed vaginally. (82)

Summary Statement: Predictive Factors

Prior vaginal birth

Prior vaginal birth including prior VBAC reduces maternal and perinatal morbidity and increases the likelihood that VBAC will occur as planned in the current pregnancy. II-2B

Delivery interval < 24 months

Women with a delivery interval of < 24 months experience an increased risk (ORs 2.05-2.65) of uterine rupture during VBAC labour. As the absolute risk remains low, shorter interdelivery intervals should not be a reason to recommend against VBAC. II-2B

Induction of labour

There is a small decreased likelihood of VBAC (54%-69% compared with 73.4%) and increased risk of uterine rupture with induction of labour (15/1000 vs 8/1000 in one meta-analysis). The absolute risk of uterine rupture is unclear due to conflicting research and variation in induction protocols used. As there is insufficient evidence to quantify the absolute risk of uterine rupture, decisions about whether or not to induce labour must be made on a case-by-case basis and will depend on the preference of the woman and the comfort and experience of the consultant physician. II-2C

No recommendation on the use of alternatives to medical labour induction such as herbs, homeopathics, acupuncture or castor oil in women with a prior CS can be made due to the absence of good quality research and lack of evidence regarding efficacy and safety. II-3C

Augmentation of labour

Limited evidence suggests a lower likelihood of vaginal birth with oxytocin augmentation of labour. However, the lower likelihood of vaginal birth may be due to the indication for the augmentation, rather than augmentation itself. In clinical circumstances in which augmentation is warranted, it is possible that augmentation may actually increase the likelihood of vaginal birth, but this distinction is not made in the research on VBAC outcomes to date. The absolute risk of uterine rupture when labour is augmented is unclear due to conflicting research and variation in augmentation protocols used (high dose, low dose). As there is insufficient evidence to quantify the absolute risk of uterine rupture, decisions about whether or not to augment labour must be made on a case-by-case basis and will depend on the preference of the woman and the comfort and experience of the consultant physician. II-2C

Maternal BMI ≥ 25-30

Women with pre-pregnancy BMI ≥ 25 - 30 are at greater risk of undergoing primary CS and repeat CS, with risk increasing with BMI class. No consistent associations between maternal BMI and uterine rupture have been found. Risks of other complications (such as infection) may be increased with BMI, independent of the intended route of delivery. II-2C

Maternal age ≥ 35

Maternal age ≥ 35 years is associated with increased rates of CS and has been associated with a slightly greater risk of VBAC-related maternal complications and increased rates of uterine rupture. II-2C

LUS thickness

Assessment of LUS thickness by ultrasound has not been shown to consistently predict whether or not uterine rupture will occur during planned VBAC. There is currently insufficient evidence to recommend the use of LUS measurement as a screening tool. II-2C

CS closure technique

Evidence is conflicting on whether a single-layer closure for prior caesarean section increases risk of uterine rupture during VBAC. Having a history of single layer closure alone is not sufficient reason to recommend against labouring after a prior caesarean. II-2C

Multiple CS

The most recent evidence suggests that women with multiple CS should not be discouraged from planned VBAC because of this factor alone. II-2B For women requesting VBAC with more than one previous CS, midwives are advised to counsel clients that some studies show increased rates of morbidity and uterine rupture, though study results are conflicting. III-C

Unknown uterine scar

There is limited evidence on the significance of unknown uterine scar from previous CS. Available evidence does not show an increased risk of uterine rupture during VBAC for women with an unknown scar. II-2C
NOTE: CMO Indications for Mandatory Discussion, Consultation and Transfer require a category 2 consult for “any CS other than one documented previous LSCS.” (100)

Twin gestation

Women with twin gestation and a history of prior CS experience similar rates of maternal morbidity with VBAC and ERCS, and only slightly decreased rates of vaginal delivery, compared to women with a singleton pregnancy and prior CS. II-2C

Pregnancy beyond 40+0 weeks’ gestation

Limited research suggests a higher likelihood of vaginal delivery for women planning VBAC who laboured prior to 40+0 weeks’ gestation, compared to women who laboured after their EDB, independent of induction status. Limited evidence suggests no significant differences in uterine rupture or overall maternal morbidity by mode of delivery. The absolute decrease in likelihood of vaginal birth after 40+0 weeks’ gestation is not sufficient reason to recommend against planned VBAC after 40+0 weeks. There is no evidence to suggest benefit from inducing women so that they deliver before 40+0 weeks’ gestation, nor reason to induce labour if spontaneous labour has not occurred by 40+0 weeks’ gestation. II-2C

Macrosomia

Because it is difficult to predict future birth weight using ultrasound or physical examination, suspicion of macrosomia is not sufficient reason to rule out VBAC. Women may be informed of the limitations of predicting fetal size, as well as findings of research assessing VBAC success and rates of uterine rupture for infants who are macrosomic. While evidence is limited due to retrospective study design and small sample sizes, studies note decreasing rates of VBAC success and increasing rates of uterine rupture with increasing fetal weight at and above 4000g. Suspected macrosomia is not a contraindication to planning VBAC. III-C

Recommendations

- 4. Midwives should discuss the relevant factors which may influence the likelihood of success or risk of VBAC with their clients. Inform clients that such factors are not contraindications to VBAC but may be considerations in their care during labour. III-C**
- 5. In developing the plan for care of a woman planning a VBAC, request and review a copy of the operative record from the previous caesarean section(s). Inability to obtain the previous record should be documented in the woman's chart. III-C**
- 6. For women planning VBAC, induction of labour should be avoided unless the benefits outweigh the risks. When necessary, midwives should consult obstetrics and review the risks and benefits of methods of induction with the woman and the consultant. As with any clinical situation in which midwives manage care, a clear plan for ongoing communication with the consultant about progress in labour and maternal and fetal well being is recommended when midwives are primary care providers for induction of VBAC labour. III-C.**
- 7. When augmentation or induction of labour is required during a VBAC labour and the midwife is the primary care provider, the midwife should take into account how quickly the obstetrical and paediatric team will be available in the event that emergency**

assistance is required. This may include ongoing communication with the team about progress in labour and maternal and fetal well being. III-C

MANAGEMENT OF LABOUR FOR WOMEN PLANNING VBAC

The care of a woman with a history of one previous LSCS falls within the midwife's scope of practice; one previous CS is itself not an indication for consultation or transfer of care to a physician in either the antenatal or intrapartum periods. In the absence of complications, the midwife would be expected to remain the primary caregiver for women in her care with a history of one previous LSCS for the duration of pregnancy and first 6 weeks postpartum.

Antenatal Considerations

The midwife will typically discuss the intrapartum management of VBAC labour in light of a client's specific clinical circumstances. This information, along with the client's values and risk tolerance, will factor into decision-making surrounding labour and birth. While the highest quality and most current research supports VBAC as a safe choice for the majority of women with a prior LSCS, hospital and community standards may not be reflective of evidence-based practice. Nevertheless, community standards regarding VBAC, hospital and practice group protocols, as well as relevant midwifery and obstetrical clinical guidelines should be addressed in discussion with a woman

planning VBAC in the antenatal period, as these considerations may influence the course of care. Informed choice discussions should include: fetal monitoring practices; pain management options; use of intravenous access; and choice of birth place.

Written Information for Clients

There is some evidence to suggest that decision aids and other written and electronic forms of client-directed information may be helpful for decisions regarding mode of birth following a previous CS. (103,104) A Cochrane review of decision aids directed at people facing health care decisions suggests that they increase relevant knowledge and improve the accuracy of perceptions of benefits and harms associated with treatment or screening options. (105) Written information should be used in conjunction with dynamic informed choice discussions with clients.

Fetal and Maternal Monitoring

Systematic review suggests that the signs and symptoms of impending uterine rupture are inconsistent and prone to bias. The only consistent finding is an association between fetal bradycardia and poor perinatal outcomes, which would suggest that prompt delivery in this scenario is warranted. (13,106)

Fetal bradycardia is also the most reliable sign of uterine rupture once it has occurred. A case-control study compared fetal heart rate characteristics of women who experienced uterine rupture during VBAC (N = 36) compared with rupture-free VBACs (N = 100). The only findings that differentiated cases of uterine rupture from successful VBACs were increased rates of fetal bradycardia identified by electronic fetal monitoring (EFM) in the first stage ($p < .01$) and second stage of labour ($p < .01$). No significant differences were found in rates of mild or severe variable decelerations, late decelerations, prolonged decelerations, fetal tachycardia, or loss of uterine tone. (107)

Other classical signs of uterine rupture include maternal hypotension, maternal tachycardia, hematuria and excessive vaginal bleeding. Other possible signs may be maternal restlessness or loss

of fetal station. (108) Pain over the previous uterine incision has been found to be an unreliable sign, since abdominal pain is hard to evaluate during active labour. However, a woman may experience abnormal pain, a sudden change in pain, or an abnormal level of concern. Although these last symptoms may be difficult to objectively evaluate, the midwife should be alert to the woman's verbal and non-verbal cues. There is a need for more research on women's experience of uterine rupture during midwifery care.

There is, as yet, incomplete evidence regarding the comparative risks and benefits of fetal monitoring methods. Nevertheless, routine continuous electronic fetal monitoring (EFM) for women planning VBAC has become standard in many communities, and is recommended by the SOGC. (7) The ability of routine EFM to predict uterine rupture in labouring women with a previous CS has not been definitively established. Furthermore, the benefit of EFM in the prevention of poor long-term outcomes in normal pregnancies and births is not clear. (109) EFM is also associated with a higher rate of caesarean section, which may be an important consideration for women attempting a VBAC. (110)

As the majority of research on the safety and outcomes of VBAC has been conducted using EFM, there is little evidence on the relative and absolute risks of severe adverse events in its absence. (111) In particular, there is scarce research on the safety and outcomes of VBAC using intermittent auscultation (IA). There is also no high quality evidence to identify the optimal frequency of IA during labour. The preponderance of EFM in clinical research may contribute to perceptions that EFM is a "safer" option despite little evidence of its effectiveness in preventing adverse outcomes.

Few studies have directly compared IA to EFM in VBAC labours. In one small trial from India, 100 women with one prior CS and no contraindication to vaginal birth were randomized into two groups, one with IA (standard practice) and one with EFM during labour. The IA group had a vaginal delivery rate of 70% vs. 64% for EFM, and there were more CS performed for non-reassuring fetal heart rate in

the EFM group (47% vs. 18% respectively), however, these differences were not significant statistically due to small sample size. There were no significant differences in maternal or neonatal outcomes between the two groups. The study was also too small to determine effect on rare outcomes such as severe neonatal morbidity. (112)

In the absence of clear evidence, the American College of Nurse-Midwives suggests the following IA protocol: every 15-30 minutes during the active phase; every 15 minutes during the second stage prior to expulsive efforts; and every 5 minutes after initiation of pushing may be reasonable. (111) Using IA to monitor VBAC labour may cause some delay in diagnosis of uterine rupture compared with EFM in the event that uterine rupture occurs in the absence of other signs and symptoms. It is possible that a delay of up to 15 minutes may be experienced if the uterine rupture occurs directly after the midwife has monitored the fetal heart and no other signs or symptoms of uterine rupture are present.

If labour is prolonged, if any fetal heart rate abnormalities are heard, or if there are any other signs or symptoms associated with uterine rupture, the AOM recommends the use of continuous EFM. The one-to-one nature of IA care-giving, and offering women informed choice on type of fetal monitoring may improve satisfaction with labour and birth. (113)

Recommendations

8. Fetal heart monitoring may occur by:

- **intermittent auscultation q 15 minutes in**

active labour and q 5 minutes in the second stage; or

- **using continuous EFM per current protocols**

The relative and absolute risks of severe adverse events in the absence of continuous electronic fetal monitoring are unknown. III-C

- 9. Continuous EFM should be used if labour is prolonged or if any fetal heart rate abnormalities are noted with intermittent auscultation. II-2A**

Labour Progress

Research suggests that dystocia may be a factor that increases risk of uterine rupture, but the quality of the research on this topic is low. A very small study of women who experienced uterine rupture (N = 42) found an OR of 13.7 (95% CI 6.4-29.3) for dystocia during the second stage of labour. (114) It is important for midwives attending a VBAC labour to diagnose the onset of active labour accurately and to be vigilant for prolonged labour. While a standard labour graph or partogram may be helpful in identifying dystocia, new evidence suggests that partograms currently in use have limited applicability among certain ethnic groups and nulliparous parturients. (115)

If progress in active labour is deemed to be abnormally slow, consultation should be initiated. If dystocia is identified, obstetric consultation should be requested and continuous fetal monitoring, intravenous access and ensuring appropriate blood work needed in preparation for CS or epidural should be initiated if not already in place while awaiting consultation.

Signs and Symptoms of Uterine Rupture

- *Fetal bradycardia in the first and second stage. II-2A*
- *Maternal hypotension, maternal tachycardia, haematuria and excessive vaginal bleeding. II-2B*
- *Maternal restlessness or loss of fetal station. III-C*

Recommendations

10. For women with a prior history of CS it is important for midwives to diagnose and document the onset of active labour accurately and to be vigilant for prolonged labour. II-2A
11. For women with a prior history of CS in whom prolonged labour has been identified, obstetric consultation should be requested and IV access and continuous EFM monitoring should be initiated, if not already in place, while awaiting obstetric consultation. III-A

Pain Management Options

There is no evidence to demonstrate that women having a VBAC should be restricted in their choice of analgesia or anaesthesia for pain relief. The effect of epidural use on the likelihood of VBAC is not certain. Some evidence suggests that epidurals may reduce the likelihood of VBAC (55, 116) but one large study showed an increased likelihood of VBAC among women who received epidurals compared to similar women who did not. (57) While epidural may streamline preparation for surgery, should it be required, this potential benefit should be balanced with the associated risks of epidural, which include lower plasma levels of oxytocin post-epidural insertion (117) and the increased use of oxytocin augmentation with epidural. (118) As with all medical forms of pain relief, the risks and benefits of epidural analgesia should be discussed with the client in assisting her to make an informed decision.

One recent case-control study sought to estimate the association between epidural dosing and the risk of uterine rupture in women who attempt VBAC. The dose timing, frequency, and quantity were compared. Among 804 women, 504 (62.7%) had epidural anaesthesia. A dose-response relationship was identified between the number of epidural doses and uterine rupture risk. After controlling for overall length of labour, four or more doses of epidural in the last 90 minutes of labour corresponded to an 8-fold increase in risk of rupture. (95% CI, 5.4-18.2). (119)

Recommendations

12. Prompt consultation should be initiated if the woman labouring after a previous CS experiences any unusual pain or if epidural anaesthesia is being used and is not effective. III-C

Choice of Birth Place: Considerations for Women Choosing VBAC

Overall, there is limited evidence on safety and outcomes of planned out-of-hospital VBAC. The literature search for this guideline identified published data on 2293 women who began a VBAC labour intending to birth at home or in a birth centre. All studies included women with prior vaginal births or prior VBAC. The only study with sufficient power to determine the incidence of uterine rupture was a prospective study of births in free-standing birth centres in the United States from 1990-2000. (120) In this study, 87% of women who entered labour planning to give birth at one of the 41 birth centres delivered vaginally; the transfer rate before birth was 24%. Of the 6 uterine ruptures which occurred (a rate of uterine rupture of 0.4%), two resulted in fetal/neonatal death, equivalent to a perinatal mortality rate of 5/1000. When women with multiple prior CS and gestational age \geq 42 weeks were excluded (10% of total births), perinatal mortality was 2/1000. Overall adverse outcomes were 1.4%. (120)

In a retrospective study of German women who began labour intending to deliver at a birth centre, 22% ultimately delivered by CS. No uterine ruptures or neonatal deaths were noted. Compared to women who had a history of a single vaginal birth, VBAC candidates were more likely to be transferred to hospital and/or undergo CS. (121)

A secondary analysis of a prospective study examined VBAC home births attended by nurse-midwives in 29 practice groups in the USA in 1994-95. Of this group, 73% of practices accepted women with a prior CS, in many cases requiring a previous vaginal birth as well. A total of 57 women planning a VBAC started labour with the intention of giving birth at home. More than half (56%) had a history of successful VBAC. Ultimately, 50 (87.7%)

of women gave birth at home and 54 (94.8%) of all women had a vaginal birth. Three (5.3%) had a repeat CS. There were no uterine ruptures, but there was one stillbirth, attributed to postdates with meconium. The very small and highly selective sample in this study make the results less externally valid, particularly for a rare event such as uterine rupture. (122)

In a study of all planned home births in BC from 2000-2004, 88 of 2889 women included were planning a VBAC. However, the comparison group of women having hospital births did not include women who had previous CS, limiting the researchers' ability to compare VBAC outcomes based on place of birth. In a subgroup analysis, researchers restricted the home birth group to women who had not had previous CS. Removing the 88 women planning home VBAC from the analysis did not significantly change the relative risks of interventions or outcomes associated with home birth. No uterine ruptures were reported in the home birth group. (123)

A retrospective cohort study of all women in Ontario cared for by midwives from 2003-2008 showed that 3262/47 923 births (6.8%) occurred in women with a prior CS. While 25.3% of all women in this study planned a home birth, only 10% of women with a prior CS planned to give birth at home. The overall transfer rate during labour was higher among women with prior CS (36.5%), compared to 24.6% for women with no history of CS (RR=0.84, 95% CI 0.78-0.91). During the five

years of the study, this rate of planned home birth by VBAC candidates decreased from 11.8% to 8.7%. (11) VBAC candidates who planned a home birth were more likely to deliver vaginally, regardless of where the birth ultimately took place. For women planning a home birth at the onset of labour, the rate of vaginal birth was 81.2%, higher than the overall VBAC rate of 71.2% in this study population. The proportion of women with previous vaginal births was higher in the home birth group than the VBAC group as a whole (60% vs. 45%), which may have accounted for some of the difference. Women may also have been more likely to plan home birth in the absence of risk factors associated with decreased likelihood of VBAC success. Incidence of uterine rupture cannot be accurately calculated from this data set. There were no stillbirths or neonatal deaths associated with uterine rupture, and the neonatal morbidity/mortality composite measure did not differ between women with a history of CS and those without. Further research is needed to directly compare outcomes among low-risk women choosing home birth and hospital birth for VBAC. (11)

A 2003 survey of Ontario midwifery practices found that 65% of respondents reported that they attended VBACs at home, though only 54% of practices offered this option to women at the time. The most common reasons for not attending VBAC births at home were lack of obstetrical support (86%) and hospital policies (64%). Distance from hospital and increased risk were explanations cited less frequently. (124)

Summary Statement: Choice of Birth Place

There is little high-quality research available on VBAC and home or out-of-hospital birth. Larger studies are needed to report on rates of VBAC at home compared to VBAC in hospital as well as outcomes of rare events such as uterine rupture.

Risk and Benefits of Choice of Birthplace

Risks and benefits of choice of birthplace for women planning VBAC should be thoroughly reviewed during informed choice discussions. Midwives should consider including the following points as part of the informed choice discussion relating to choice of birthplace for women planning VBAC:

- The major limitation in providing evidence to women wishing VBAC regarding choice of place of birth is that virtually all of the research about VBAC has utilized data from physician-attended hospital births, largely in tertiary centres.
- Women should understand that access to surgery differs by hospital level in Ontario. Hospitals also vary in their requirements as to whether a physician must be “on site” during VBAC labour or able to provide emergent care within a specified time period (e.g. 30 minutes). At a level III hospital, there is continuous in-house presence of obstetric, anaesthetic and paediatric personnel.
- For clients choosing a level I hospital or out-of-hospital birth, it is important to clearly review the small but significant risk of uterine rupture and implications of potential increased delays in accessing hospital resources. Any delay

in surgical intervention may have a serious impact on the outcome for both the woman and her baby, either short or long term.

- Out-of-hospital settings increase the time required to access emergency care, and this time span can be additionally affected by distance from hospital, response times of emergency services and weather conditions. Clients should be made aware of the midwifery practice group protocol for managing VBAC in the home setting, and any mechanisms in place to ensure coordination with emergency medical services and hospital should assistance be required.
- Planned home birth may reduce the chance of a repeat CS and its attendant risks.
- Anxiety can inhibit the progress of labour; one of the benefits of supporting women to give birth in the location of their choice is a reduction of the anxiety that can stem from previous birth experiences and place of birth.

Recommendations

- 13. An informed choice discussion regarding the risks and benefits of VBAC and choice of birth place should be comprehensive and well-documented. Documentation of this discussion should include: an outline of risks**

Hospital Policies and VBAC

Midwives have a responsibility to ensure that evidence-based VBAC protocols exist in hospitals. By advocating for women planning VBAC, midwives can help keep clients from feeling as if the only option for avoiding unnecessary intervention is out-of-hospital birth.

Midwives should familiarize themselves with any existing hospital procedures for clients who choose not to follow hospital protocols. For instance, many hospitals have a ‘refusal of treatment’ form that may be signed in the event that a client declines intervention. Such documents may be helpful in preventing or alleviating friction or conflict with other health care professionals.

In the event that ongoing conflict regarding a client’s choice is not resolved by discussion among the parties involved, midwives may consider requesting a consultation with the hospital ethics service, if available.

and benefits discussed, the woman's values and preferences, and any recommendations made by the midwife, if applicable. III-C

14. Women should be informed that there is little published evidence on outcomes, including safety of VBAC, in the out-of-hospital setting. While the quality of these studies varies, they do not demonstrate increased risk. III-C
15. For clients planning VBAC, describe the VBAC policies in place at the hospital(s) where the attending midwives have hospital privileges. A woman's informed choices to accept or decline recommended interventions in hospital should be respected. III-C

POSTPARTUM CARE

Immediate Postpartum

In some situations, postpartum hemorrhage may be evidence of uterine rupture in the immediate postpartum period. (125) Midwives should consider uterine rupture in the differential diagnosis if a client has postpartum hemorrhage following VBAC or ERCS.

Prior to Discharge from Midwifery Care

Counselling women after their VBAC or ERCS on future options related to mode of delivery can help in decision-making for future pregnancies. Midwives have an opportunity to share information on pregnancy spacing, and the future likelihood of additional VBACs. If a planned VBAC results in an unplanned repeat caesarean section, the midwife should review considerations for future pregnancies including:

- Pregnancy spacing.
- Emerging evidence on the safety and success rate of VBAC after more than one caesarean section.
- An opportunity for the woman to discuss her experience if an unplanned CS took place.

Recommendation

16. For women who have undergone a CS, discuss the association between delivery interval and

risk of uterine rupture and considerations for family planning prior to discharge from midwifery care. II-2B

Conclusion

Pregnant women who have had a CS in one or more previous pregnancies face complex choices. While overall rates of maternal and neonatal complications are low for women planning a VBAC as well as those choosing a repeat ERCS, there are risks and benefits associated with each option. (13) A woman's values and risk tolerance will factor into decision-making about method and place of birth in the current pregnancy.

The midwife's role is to ensure that women are well informed of the risks and benefits of the choices they face in the course of their pregnancy, labour, and postpartum care. The evidence summarized in this CPG suggests VBAC should be recommended to women who have had previous low-segment CS and have no contraindications to vaginal birth in the current pregnancy.

As with all clients, a midwife providing care to a woman with a previous CS utilizes her assessment skills, her commitment to appropriate use of technology, and one-to-one support to minimize risks and provide optimal care. According to the Canadian Association of Midwives, the role of midwifery is to "understand, promote and facilitate physiologic processes and to intervene only when necessary." (17) VBAC is the best option for women who wish to avoid unnecessary intervention and who value birth as a physiologic process. In providing care to a woman with a previous caesarean section, the highest-quality and most current research supports VBAC as a valid and safe choice for the majority of women with a prior LSCS. (13)

Midwives will need to spend sufficient time ensuring a thorough informed choice discussion takes place regarding the choice of VBAC or ERCS. Options for care during labour also warrant thorough discussion, particularly when women choose care different from that of the local community's standard of care. It is recommended that care in labour include regular assessment of progress,

regular assessment of fetal well-being and prompt consultation for any concerns regarding slow progress in labour and/or abnormal fetal heart rate patterns or unusual pain or bleeding.

Finally, given the additional risks associated with any birth subsequent to CS, midwives have an important role to play in using evidence-based and best practices to reduce the incidence of primary CS.

Recommendations

1. The risks and benefits of VBAC compared with ERCS should be discussed with women who have a history of CS. This discussion, including the woman's decision, should be appropriately documented in the woman's chart. II-2B
2. Recommend planned VBAC as a means to achieve the benefits of normal childbirth, while being sensitive to each woman's concerns and values and respecting her informed decision. III-C
3. Recommend planned VBAC for women intending to have more than one child after the previous CS. Increased maternal and perinatal morbidity associated with ERCS and multiple CS has long-term health implications. II-2B

Note: Recommendations 1-3 presuppose an absence of contraindications to vaginal birth/VBAC (see list of contraindications on page 4).

4. Midwives should discuss the relevant factors which may influence the likelihood of success or risk of VBAC with their clients. Inform clients that such factors are not contraindications to VBAC but may be considerations in their care during labour. III-C
5. In developing the plan for care of a woman planning a VBAC, request and review a copy of the operative record from the previous caesarean section(s). Inability to obtain the previous record should be documented in the woman's chart. III-C

6. For women planning VBAC, induction of labour should be avoided unless the benefits outweigh the risks. When necessary, midwives should consult obstetrics and review the risks and benefits of methods of induction with the woman and the consultant. As with any clinical situation in which midwives manage care, a clear plan for ongoing communication with the consultant about progress in labour and maternal and fetal well-being is recommended when midwives are primary care providers for induction of VBAC labour. III-C.
 7. When augmentation or induction of labour is required during a VBAC labour and the midwife is the primary care provider, the midwife should take into account how quickly the obstetrical and pediatric team will be available in the event that emergency assistance is required. This may include ongoing communication with the team about progress in labour and maternal and fetal well being. III-C.
 8. Fetal heart monitoring may occur by:
 - intermittent auscultation q 15 minutes in active labour and q 5 minutes in the second stage; or
 - using continuous EFM per current protocols.
- The relative and absolute risks of severe adverse events in the absence of continuous electronic fetal monitoring are unknown. III-C
9. Continuous EFM should be used if labour is prolonged or if any fetal heart rate abnormalities are noted with intermittent auscultation. II-2A
 10. For women with a prior history of CS it is important for midwives to diagnose and document the onset of active labour accurately and to be vigilant for prolonged labour. II-2A
 11. For women with a prior history of CS in whom prolonged labour has been identified, obstetric consultation should be requested and IV access and continuous EFM monitoring

should be initiated, if not already in place, while awaiting obstetric consultation. III-A

12. Prompt consultation should be initiated if the woman labouring after a previous CS experiences any unusual pain or if epidural anaesthesia is being used and is not effective. III-C
13. An informed choice discussion regarding the risks and benefits of VBAC and choice of birth place should be comprehensive and well documented. Documentation of this discussion should include: an outline of risks and benefits discussed, the woman's values and preferences, and any recommendations made by the midwife, if applicable. III-C
14. Women should be informed that there is little published evidence on the outcomes, including safety, of VBAC in the out-of-hospital setting. While the quality of these studies varies, they do not demonstrate increased risk. III-C
15. For clients planning VBAC, describe the VBAC policies in place at the hospital(s) where the attending midwives have hospital privileges. Women's informed choices to accept or decline recommended interventions in hospital should be respected. III-C
16. For women who have undergone a CS, discuss the association between delivery interval and risk of uterine rupture and considerations for family planning prior to discharge from midwifery care. II-2B

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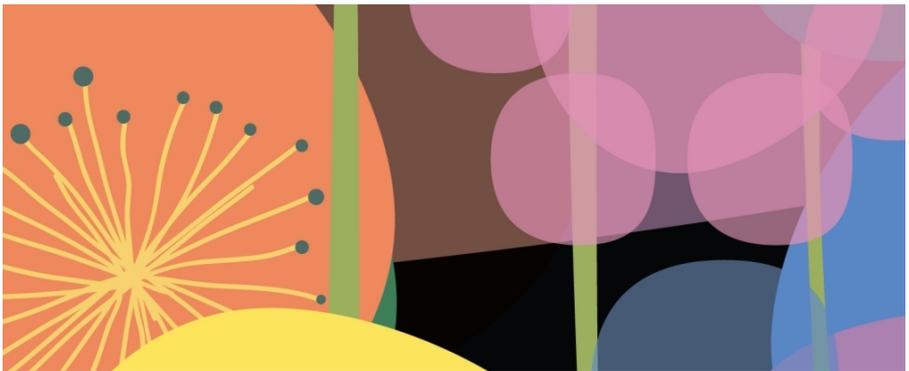
Know your options, take control.

Vaginal Birth After Cesarean and Planned Repeat Cesarean Birth

This information pamphlet is for women who are currently pregnant and have had a cesarean birth before.

Women who have had a baby by cesarean usually have a choice about how they will give birth to their next baby. They can plan to have another cesarean birth (called an elective or planned repeat cesarean birth), or they can plan to have the baby vaginally (called a vaginal birth after cesarean, or VBAC).

You can read this booklet, discuss it with your doctor or midwife, and ask any questions to help you decide whether planning a VBAC or a repeat cesarean birth is best for you.



As you go through the information in this booklet, be sure to write down any questions you might have so you can ask your doctor or midwife. There is a place for you to write your questions on the previous page.

The VBAC option

After a cesarean birth, some women choose to plan a vaginal birth after cesarean, or VBAC. Some common reasons include:

- To have a shorter hospital stay, and generally a quicker recovery.
- Some women want to experience giving birth normally.
- To avoid major abdominal surgery and the risks associated with repeat cesarean birth.

The repeat cesarean option

After a cesarean birth, some women choose to plan another repeat cesarean birth. Some common reasons include:

- Being able to plan in advance for the date and time of the birth.
- Some women feel more comfortable because they know what to expect from the surgery.
- To avoid labour and the risks associated with vaginal birth after cesarean.

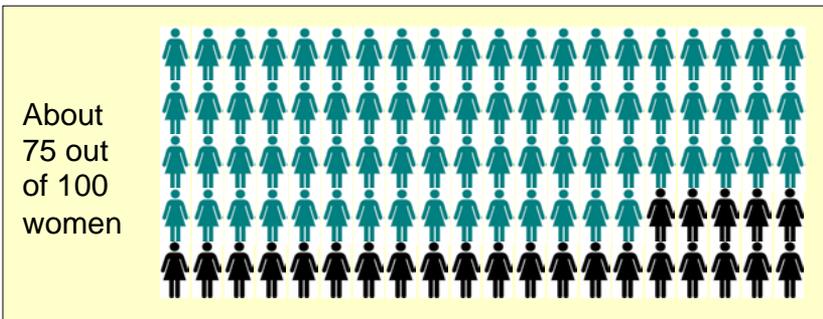


Who should plan a VBAC?

For many women, VBAC is a safe option. If the reason you had a cesarean last time is not present in this pregnancy or labour (such as a breech baby or problems with your placenta), your chance of having a successful vaginal birth is about the same as a woman having her first baby.

If the reason for the cesarean is present with this pregnancy or labour, your chances of having a successful vaginal birth may be lower.

Overall, about 75% of women who plan a VBAC are successful in having a vaginal birth.



Some things **increase** your chances of having a successful VBAC:

- If you have previously given birth vaginally, either before or after your cesarean birth;
- If the reason for your previous cesarean birth isn't a factor this time;
- If you are younger than 40 years old;
- If your labour begins on its own;
- If your labour progresses normally.

Some things **decrease** your chances of having a successful VBAC:

- If you have had more than one previous cesarean birth;
- If you go past your expected due date;
- If your labour doesn't start on its own and needs to be induced;
- If you are significantly overweight;
- If your baby is estimated to weigh more than 8 pounds and 13 ounces, or 4000 grams (*although estimates of the baby's weight are not always accurate*).



Which is safer, a VBAC or a repeat cesarean?

Having a baby always involves a small amount of risk of complications, no matter what kind of birth you have. The risks are normally small for both VBAC and for repeat cesarean.

In general:

- A successful VBAC carries the least amount of risk for the mother and baby.
- An unsuccessful planned VBAC (requiring an unplanned cesarean) carries a higher risk.
- A repeat cesarean is somewhere in the middle.

VBAC and repeat cesarean are each associated with different risks, which are listed on the next three pages. This information is based on the best research and evidence currently available.*

*The data are based on the current, comprehensive research in the 'Vaginal Birth After Cesarean: New Insights' report published by the AHRQ for the National Institute of Health 2010 VBAC Consensus conference. The full citation can be found in the Reference list at the end of this booklet.



Risks with repeat cesarean birth:

- A cesarean is major abdominal surgery and therefore has surgery-related risks which can include:
 - Infection;
 - The need for a blood transfusion;
 - Complications with the anesthetic given for cesarean birth (such as severe headache; serious complications are rare);
 - Rarely, blood clots in the leg (deep vein thrombosis) or lung (pulmonary embolism);
 - Very rarely, higher risk of death for the mother (the death rate from cesarean birth [1/10,000] is almost five times more than from vaginal birth [0.2/10,000]).

- For the baby, there is a higher risk of breathing difficulties and admission to the special care nursery for a short time after cesarean birth, which requires separation from the mother.

- In future pregnancies, there is a higher risk of problems with how the placenta attaches itself to the wall of the uterus. This includes
 - placenta previa (when the placenta covers the opening of the uterus, or cervix), and
 - placenta accreta (when the placenta grows too far into the wall of the uterus).

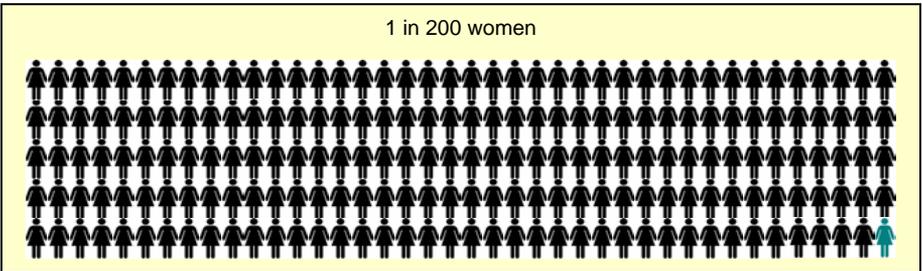
These complications of the placenta can cause severe bleeding and can be life-threatening. After one cesarean birth, there is a moderate increased risk of placenta complications; after two or more cesareans, there is a higher increased risk.



- It is important for women who may be planning more children after this birth to seriously consider VBAC, as their risk of complications increases with each repeat cesarean birth.

Risks with VBAC:

- An uncommon risk of VBAC is that the scar on the uterus from the previous cesarean birth could tear during labour. This is called “uterine rupture”. This complication happens in about 1 of every 200 VBACs (a 99.5% chance this will *not* happen).



Uterine rupture can also occur prior to labour, even when planning a repeat cesarean (about 1 of every 4000 repeat cesareans).

- The risk of uterine rupture goes up slightly if labour is induced with oxytocin. However, oxytocin to help contractions during your labour does not increase the risk.
- Uterine rupture requires emergency surgery to repair the uterus. Most babies and mothers make a full recovery after a uterine rupture.



- On rare occasions, uterine rupture can cause serious complications for the mother and/or the baby. There is a very small increased risk of brain damage or death for the baby, and a very small increased risk of hysterectomy (surgical removal of uterus) for the mother.

The risk of other possible problems that can occur with VBAC are similar to the risks during a normal first vaginal birth for a woman who has never had a cesarean.

During a planned VBAC, your nurse and doctor or midwife will closely monitor you and your baby's health and well-being. This is so any problems that occur during labour can be managed right away.

If you have planned for a VBAC but your labour does not progress normally, you may require an unplanned (or emergency) cesarean birth.

What if I go into labour before the scheduled cesarean?

About 30% of women who have planned a repeat cesarean go into labour before their scheduled surgery. While most women will still proceed to a cesarean birth as planned, a cesarean performed in labour carries a slightly increased risk of complications compared to a repeat cesarean. Many women who go into labour before their scheduled cesarean can choose to safely proceed with a vaginal birth if their labour is progressing normally. You can discuss this option with your doctor or midwife.



Considering your risks

It can be difficult to compare the risks of planned VBAC and repeat cesarean as the overall risks for both are very low.

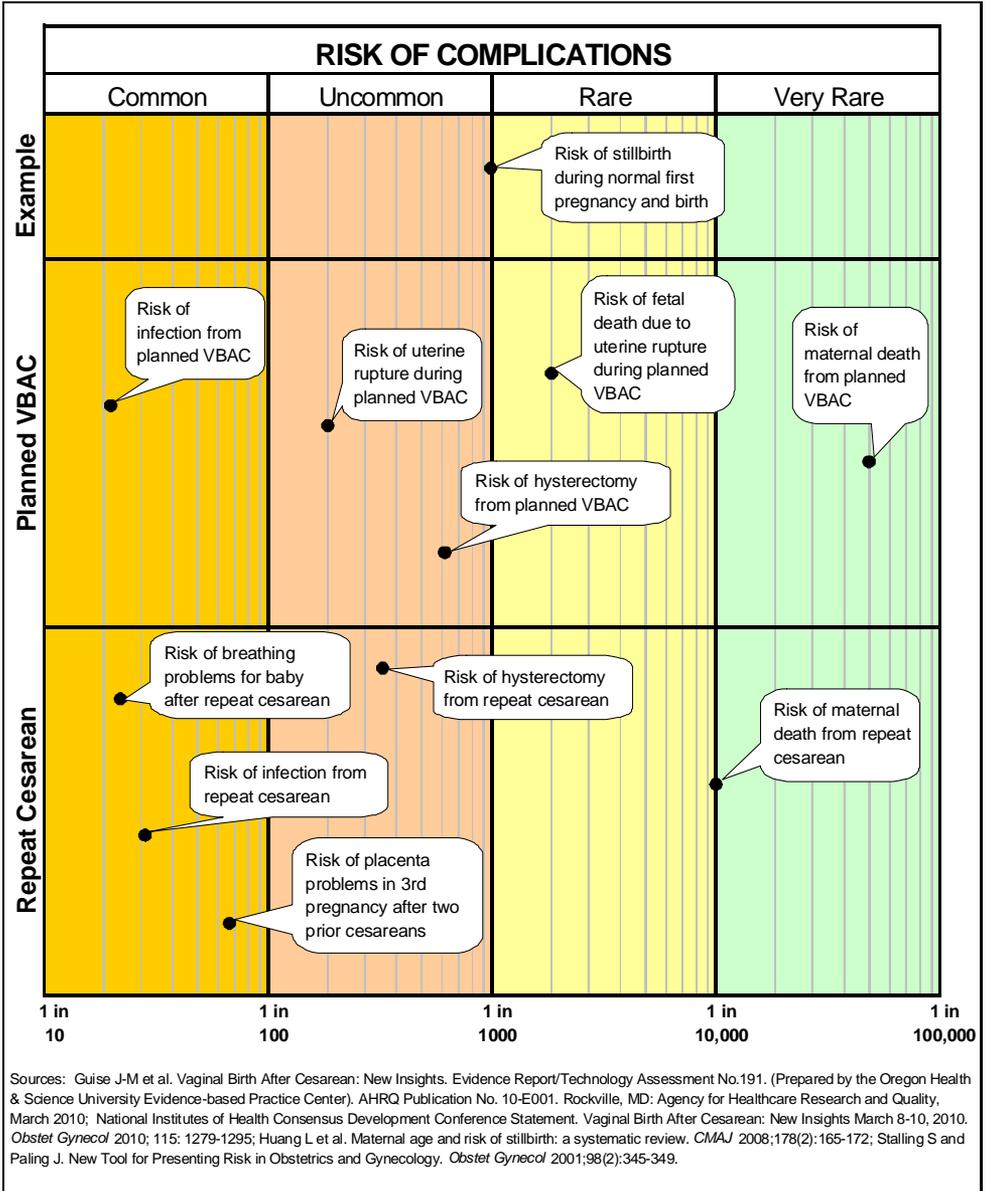
On the next page is a diagram which shows how some of these risks relate to each other.

We have used the examples below to give you some reference of the risks involved compared to everyday life.

Common	from	1 in 10	Annual risk of being injured in the workplace (1/25)
	to	1 in 100	
Uncommon	from	1 in 1000	Risk of giving birth to a baby with Down Syndrome (1/650)
	to	1 in 10000	
Rare	from	1 in 10,000	Annual risk of being diagnosed with breast cancer (1/1,500)
	to	1 in 100,000	
Very Rare	from	1 in 100,000	Annual risk of dying in a motor vehicle accident (1/11,000)
	to	1 in 1,000,000	

Data from Stats Canada, the Canadian Cancer Society and Health Canada





Adapted from the Paling Perspective Scale (John Paling, 1992)



Planning for VBAC or Repeat Cesarean in BC

When planning your baby's birth, it is impossible to know for sure what type of birth you will end up having.

For example, while you may have planned a VBAC during your pregnancy, complications during labour might lead to an unplanned cesarean.

Or, you may have planned a repeat cesarean but go into labour before your scheduled surgery, which could lead to a successful VBAC.

Because of this, it is important to know the risks associated with the *plan* you make for your birth, including the possible outcomes, such as an unplanned cesarean birth, as well as an unplanned but successful vaginal birth.



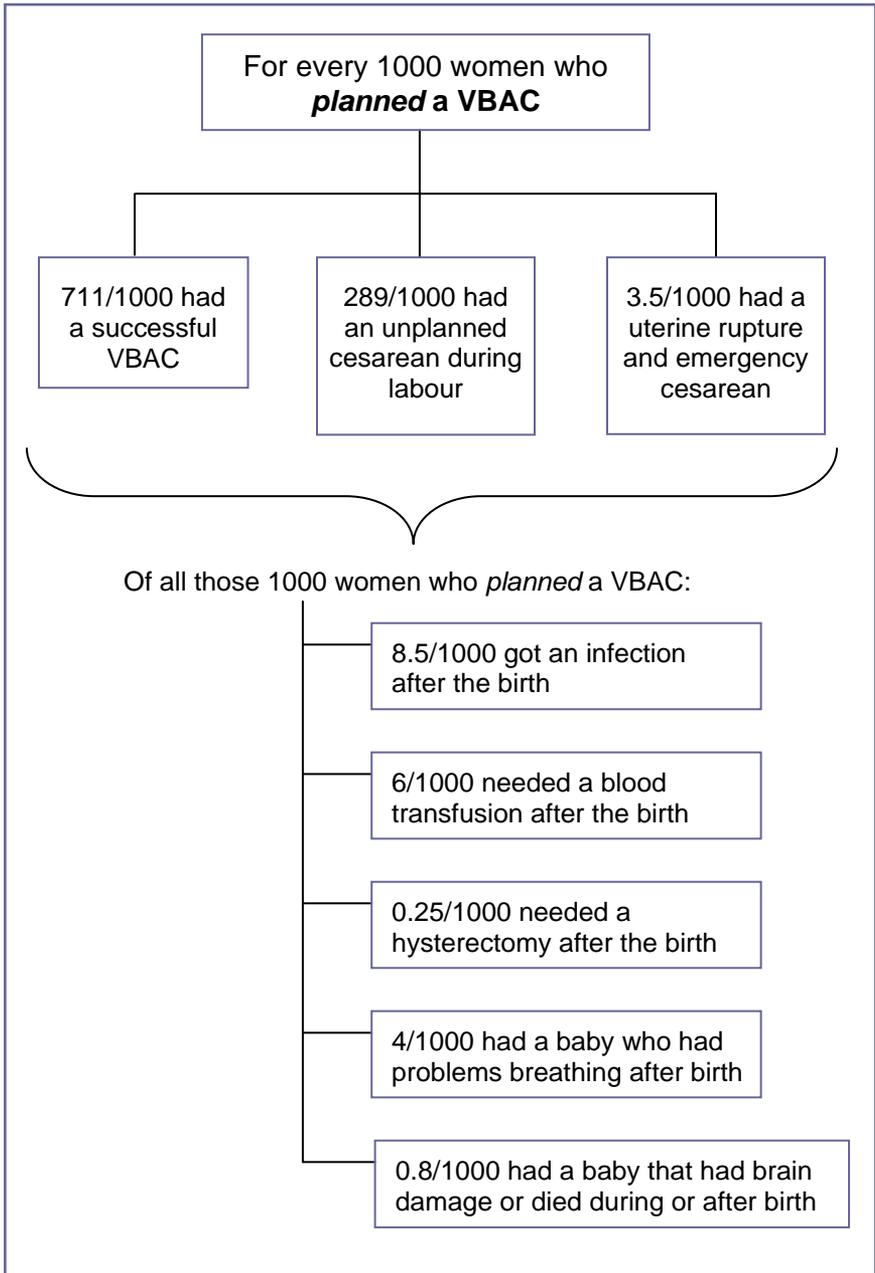
On the next two pages we show what has happened, on average, to women in BC who planned a VBAC or a repeat cesarean during the last ten years.**

The chart showing what happened to the women who *planned* a VBAC includes those women that ended up with an unplanned cesarean. Likewise, the chart showing what happened to the women who *planned* a repeat cesarean includes those women that ended up having an unplanned VBAC.

**These estimates are based on outcomes of 11,335 planned VBACs and 23,151 planned repeat cesareans in British Columbia during the years 2000 to 2009.

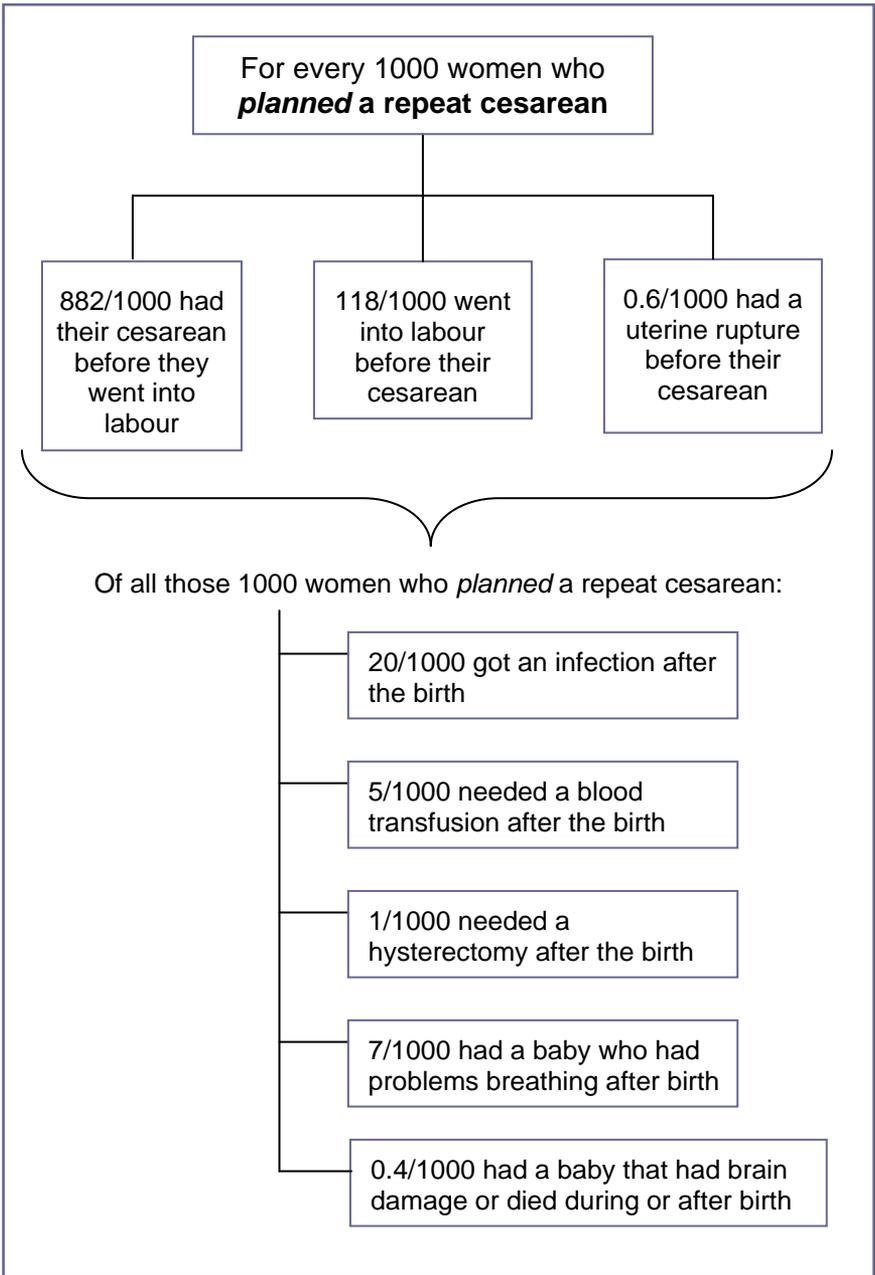
These outcomes are different than the data used in the lists and chart on previous pages, which are mostly from the USA. Although the total number of women giving birth in BC is much smaller, it is thought that one reason BC outcomes are better is partly due to the universal access to maternity care women in Canada receive.





Data from Perinatal Services BC





Data from Perinatal Services BC

What matters most to you?

Making a choice about how you want your baby to be born is very personal. It can take time to understand what your preferences and goals are, and the needs of your family.

You can use the tool on the next page to help you consider your birth options. There is a list of the most common reasons women have for planning either VBAC or repeat cesarean. You can add any other personal reasons of your own at the bottom of the list.

Indicate how important each reason is to you by circling the correct number of stars:

- no stars = not important
- **2 stars = somewhat important
- ***3 stars = important
- ****4 stars = very important
- *****5 stars = extremely important

Add up each column of stars and write the totals at the bottom. Use the totals to help you consider which option offers more benefits that are important to you.



Reasons to...			
Plan a repeat cesarean birth	How much does it matter to you?	Plan a vaginal birth (VBAC)	How much does it matter to you?
You can know the date your baby will be born	★ ★ ★ ★ ★	You have a greater chance of having a vaginal birth	★ ★ ★ ★ ★
You know what to expect from the surgery	★ ★ ★ ★ ★	You have a greater chance of having an easier recovery and a shorter stay in the hospital	★ ★ ★ ★ ★
You have a smaller chance of having a tear in the scar on your uterus	★ ★ ★ ★ ★	You have a smaller chance of problems after surgery, such as infection, blood clots, or hysterectomy	★ ★ ★ ★ ★
Your baby has a smaller chance of very rare but serious complications from uterine rupture	★ ★ ★ ★ ★	You have a greater chance of having uncomplicated pregnancies in the future (fewer placenta problems)	★ ★ ★ ★ ★
You have a greater chance of avoiding labour altogether	★ ★ ★ ★ ★	You have a greater chance of having your baby with you after the birth (less admission to the nursery)	★ ★ ★ ★ ★
	★ ★ ★ ★ ★		★ ★ ★ ★ ★
	★ ★ ★ ★ ★		★ ★ ★ ★ ★
TOTAL STARS:	Repeat Cesarean =		VBAC =



Making a decision

If you know what you would like to plan for the birth of your baby, tick VBAC or repeat cesarean birth.

If you are unsure about your plan, you can also tick the 'unsure' box, and then tick the items listed below that might help you to make your decision.

- I would like to plan for a **Vaginal Birth After Cesarean (VBAC)**

- I would like to plan for a **repeat cesarean birth**

- I am still **Unsure:**
 - I want more information about the benefits and risks
 - I want to think more about what matters to me
 - I want to talk to a doctor or midwife about my choices
 - I want to hear stories from others who made this decision
 - I need to find help to support my choice

Ask your doctor or midwife for more information, or you can go to the website below for information, links, and stories from other women:

www.powertopush.ca



Reference List

Below is a list of some of the sources that were used to provide the information in this booklet:

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More Information

The website of the Best Birth Clinic has links to more resources and information on VBAC and repeat cesarean:

www.powertopush.ca



This booklet was produced by the BC Women's Cesarean Task Force for the Best Birth Clinic at BC Women's Hospital & Health Centre, 2010.

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Guidelines for Vaginal Birth After Previous Caesarean Birth

This guideline has been prepared and reviewed by the Clinical Practice Obstetrics Committee and approved by the Executive and Council of the Society of Obstetricians and Gynaecologists of Canada.

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Recommendations:

1. Provided there are no contraindications, a woman with 1 previous transverse low-segment Caesarean section should be offered a trial of labour (TOL) with appropriate discussion of maternal and perinatal risks and benefits. The process of informed consent with appropriate documentation should be an important part of the birth plan in a woman with a previous Caesarean section (II-2B).
2. The intention of a woman undergoing a TOL after Caesarean section should be clearly stated, and documentation of the previous uterine scar should be clearly marked on the prenatal record (II-2B).
3. For a safe labour after Caesarean section, a woman should deliver in a hospital where a timely Caesarean section is available. The woman and her health care provider must be aware of the hospital resources and the availability of obstetric, anesthetic, pediatric, and operating-room staff (II-2A).
4. Each hospital should have a written policy in place regarding the notification and (or) consultation for the physicians responsible for a possible timely Caesarean section (III-B).
5. In the case of a TOL after Caesarean, an approximate time frame of 30 minutes should be considered adequate in the set-up of an urgent laparotomy (III-C).
6. Continuous electronic fetal monitoring of women attempting a TOL after Caesarean section is recommended (II-2A).
7. Suspected uterine rupture requires urgent attention and expedited laparotomy to attempt to decrease maternal and perinatal morbidity and mortality (II-2A).
8. Oxytocin augmentation is not contraindicated in women undergoing a TOL after Caesarean section (II-2A).
9. Medical induction of labour with oxytocin may be associated with an increased risk of uterine rupture and should be used carefully after appropriate counselling (II-2B).
10. Medical induction of labour with prostaglandin E2 (dinoprostone) is associated with an increased risk of uterine rupture and should not be used except in rare circumstances and after appropriate counselling (II-2B).
11. Prostaglandin E1 (misoprostol) is associated with a high risk of uterine rupture and should not be used as part of a TOL after Caesarean section (II-2A).
12. A foley catheter may be safely used to ripen the cervix in a woman planning a TOL after Caesarean section (II-2A).
13. The available data suggest that a trial of labour in women with more than 1 previous Caesarean section is likely to be successful but is associated with a higher risk of uterine rupture (II-2B).
14. Multiple gestation is not a contraindication to TOL after Caesarean section (II-2B).

Abstract

Objective: To provide evidence-based guidelines for the provision of a trial of labour (TOL) after Caesarean section.

Outcome: Fetal and maternal morbidity and mortality associated with vaginal birth after Caesarean (VBAC) and repeat Caesarean section.

Evidence: MEDLINE database was searched for articles published from January 1, 1995, to February 28, 2004, using the key words "vaginal birth after Caesarean (Caesarean) section." The quality of evidence is described using the Evaluation of Evidence criteria outlined in the Report of the Canadian Task Force on the Periodic Health Exam.

Key Words: Vaginal birth after Caesarean, trial of labour, uterine rupture, induced labour, oxytocin, prostaglandins, misoprostol

These guidelines reflect emerging clinical and scientific advances as of the date issued and are subject to change. The information should not be construed as dictating an exclusive course of treatment or procedure to be followed. Local institutions can dictate amendments to these opinions. They should be well documented if modified at the local level. None of these contents may be reproduced in any form without prior written permission of the SOGC.

15. Diabetes mellitus is not a contraindication to TOL after Caesarean section (II-2B).
16. Suspected fetal macrosomia is not a contraindication to TOL after Caesarean section (II-2B).
17. Women delivering within 18 to 24 months of a Caesarean section should be counselled about an increased risk of uterine rupture in labour (II-2B).
18. Postdatism is not a contraindication to a TOL after Caesarean section (II-2B).
19. Every effort should be made to obtain the previous Caesarean section operative report to determine the type of uterine incision used. In situations where the scar is unknown, information concerning the circumstances of the previous delivery is helpful in determining the likelihood of a low transverse incision. If the likelihood of a lower transverse incision is high, a TOL after Caesarean section can be offered (II-2B).

Validation: These guidelines were approved by the Clinical Practice Obstetrics and Executive Committees of the Society of Obstetricians and Gynaecologists of Canada.

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BACKGROUND

This document reviews the contraindications to and maternal and fetal risks of a trial of labour (TOL) after Caesarean birth and makes recommendations for achieving vaginal birth after Caesarean (VBAC) safely. Delivery by Caesarean section occurs in 15% to 25% of births.^{1–5} In 2000 and 2001, the Caesarean section rate in Canada was 21.2%.⁶ The most frequent indications for Caesarean delivery are previous Caesarean delivery, dystocia, malpresentation, and nonreassuring fetal status.^{7,8} In any given region, the rate of birth by Caesarean section and the rate of VBAC tend to be inversely related.⁴ Schell first reported VBAC in 1923, describing the successful vaginal delivery of 34 infants in 23 mothers with previous Caesarean deliveries.⁹

A trial of labour after Caesarean should be considered in women who present for prenatal care with a history of previous Caesarean birth.^{10–12} In certain situations, a TOL after Caesarean will be contraindicated³ and a repeat Caesarean section will be advised, but in most cases, successful vaginal birth can be safely achieved for both mother and infant.^{13–15} Women and their health care providers will need to discuss the risks and benefits of VBAC when planning the birth.

A Canadian consensus statement on VBAC was published in 1985, and Clinical Practice Guidelines were published by the Society of Obstetricians and Gynaecologists of Canada (SOGC) in 1997.³ This document updates the 1997 SOGC Guidelines with articles published from January 1, 1995, to February 28, 2004. Articles were obtained by searching the MEDLINE database, using the key words “vaginal birth after Caesarean (Cesarean) section.” The data are limited by 3 important factors: first, there are no randomized trials of TOL versus elective repeat Cesarean section (ERCS); second, adverse maternal or perinatal outcomes are rare, and large study populations are necessary to observe a

significant difference in maternal and perinatal outcomes; and finally, a woman’s choice to attempt TOL after Caesarean is heavily influenced by her health care provider and local resources, often leading to selection bias in published reports.^{12,16}

The level of evidence and quality of the recommendations in this guideline have been determined using the criteria described by the Canadian Task Force on the Periodic Health Examination (Table).¹⁷

TRIAL OF LABOUR VERSUS ELECTIVE REPEAT CAESAREAN SECTION

The success rate of a TOL after Caesarean ranges between 50% and 85%.^{3,4,14,18–21} In a study examining 1776 women undergoing TOL after Caesarean, the overall success rate was 74%.¹⁴ A Canadian study reported similar results, quoting a success rate of 76.6%.² Predictors of successful VBAC include nonrecurring indication for Caesarean birth, such as malpresentation (odds ratio [OR], 1.9; 95% confidence interval [CI], 1.0–3.7)²² or gestational hypertension (OR, 2.3; 95% CI, 1.0–5.8),²² and a previous vaginal delivery (OR, 1.8; 95% CI, 1.1–3.1),²² where success rates are as high as 82%.^{1,22,23} When the previous Caesarean birth was for dystocia, failure to progress, or cephalopelvic disproportion, some studies found the rates of successful VBAC comparable,^{24,25} while others reported lower-than-expected rates.^{14,18,22,26}

In 1996 McMahon *et al.* published a report of maternal morbidity in TOL compared with ERCS in Nova Scotia from 1986 to 1992.¹ In an examination of 3249 women undergoing a TOL and 2889 women who delivered by ERCS, the risk of major complications (for example, hysterectomy, uterine rupture, and operative injury) was almost doubled (1.6% vs. 0.8%) in the TOL group (OR, 1.8; 95% CI, 1.1–3.0).¹ Complications like puerperal fever, transfusion, and abdominal wound infection were comparable. When comparing women who had a successful TOL with those who required a repeat Caesarean section after failed TOL, the risks were greater of operative injury (3.0% vs. 0.1%; OR, 5.1; 95% CI, 2.5–10.7) and fever (8.0% vs. 3.5%; OR, 1.5; 95% CI, 1.3–1.8) in the failed TOL group.¹ Hibbard *et al.* also reported a greater rate of complication in women who attempted a TOL and failed.²⁷

In 1999 Rageth *et al.* reviewed 17 613 TOL and 11 433 ERCS deliveries.²⁰ The rates of hysterectomy (relative risk [RR], 0.36; 95% CI, 0.23–0.56), febrile morbidity (RR, 0.65; 95% CI, 0.55–0.77), and thromboembolic complications (RR, 0.52; 95% CI, 0.34–0.78) were less in the TOL group than in the ERCS group.²⁰ There is less blood loss with a successful VBAC (OR, 0.50; 95% CI, 0.3–0.9)²⁷ and a shorter hospital stay with a more rapid recovery and return to full activity.

Table Criteria for quality of evidence assessment and classification of recommendations

Level of results*	Classification of recommendations†
I: Evidence obtained from at least one properly randomized controlled trial.	A. There is good evidence to support the recommendation that the condition be specifically considered in a periodic health examination.
II-1: Evidence from well-designed controlled trials without randomization.	B. There is fair evidence to support the recommendation that the condition be specifically considered in a periodic health examination.
II-2: Evidence from well-designed cohort (prospective or retrospective) or case-control studies, preferably from more than one centre or research group.	C. There is poor evidence regarding the inclusion or exclusion of the condition in a periodic health examination, but recommendations may be made on other grounds.
II-3: Evidence obtained from comparisons between times or places with or without intervention. Dramatic results in uncontrolled experiments (such as the results of treatment with penicillin in the 1940s) could also be included in this category.	D. There is fair evidence to support the recommendation that the condition not be considered in a periodic health examination.
III: Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees.	E. There is good evidence to support the recommendation that the condition be excluded from consideration in a periodic health examination.

*The quality of evidence reported in these guidelines has been described using the Evaluation of Evidence criteria outlined in the Report of the Canadian Task Force on the Periodic Health Exam.

†Recommendations included in these guidelines have been adapted from the ranking method described in the Classification of Recommendations found in the Report of the Canadian Task Force on the Periodic Health Exam.

Rosen *et al.* also reported that the risk of febrile morbidity is lower in women who attempt a TOL after Caesarean (OR, 0.5; 95% CI, 0.5–0.6) and is lowest in those who succeed (OR, 0.2; 95% CI, 0.2–0.2), compared with ERCS, but is increased in those who attempt a TOL and ultimately deliver by Caesarean (OR, 2.0; 95% CI, 1.7–2.5).²⁸

An examination of 16 938 Finnish women who had undergone a Caesarean delivery found that previous Caesarean section is associated with an increased risk of ectopic pregnancy (RR, 1.28), placenta previa (RR, 3.89), and abruptio placenta (RR, 2.41).²⁹ A repeat Caesarean has been associated with an increase in the risk of placenta previa (OR, 1.59; 95% CI, 1.21–2.08)³⁰ and placenta accreta in subsequent pregnancies.³¹

A meta-analysis published in 2000 demonstrated that the overall risk of perinatal death is increased in women attempting a TOL (OR, 1.71; 95% CI, 1.28–2.28).³² The risks of perinatal mortality and severe morbidity are directly related to uterine rupture as a sentinel event. If uterine rupture occurs, the risks of perinatal mortality and severe morbidity are increased. The risk of suspected neonatal sepsis is greater in women attempting TOL but appears to be confined to those who fail TOL and require a repeat Caesarean section (OR, 4.8; 95% CI, 2.6–9.0).³³ In women who choose ERCS, the risk of respiratory problems in the newborn is increased (6% vs. 3%), compared with women who have a successful VBAC (OR, 2.3; 95% CI, 1.4–3.8).³³

CONTRAINDICATIONS TO VAGINAL BIRTH AFTER CAESAREAN SECTION

The following situations are contraindications to a TOL after Caesarean:

1. previous classical or inverted “T” uterine scar^{3,13};
2. previous hysterotomy or myomectomy entering the uterine cavity^{3,19};
3. previous uterine rupture^{3,19};
4. presence of a contraindication to labour, such as placenta previa or malpresentation³;
5. the woman declines a TOL after Caesarean and requests ERCS.^{3,19}

Recommendation

1. Provided there are no contraindications, a woman with 1 previous transverse low-segment Caesarean section should be offered a trial of labour after Caesarean with appropriate discussion of maternal and perinatal risks and benefits. The process of informed consent with appropriate documentation should be an important part of the birth plan in women with a previous Caesarean section (II-2B).

PLANNING A TRIAL OF LABOUR AFTER CAESAREAN SECTION

A woman and her health care provider must decide together whether an appropriate situation exists for considering TOL after Caesarean. The evaluation and discussion should address the issues outlined below and should be well documented in the prenatal record or chart.

Documentation of Previous Uterine Incision

Documentation of the location and type of uterine incision used during the previous Caesarean section is ideal.³ In most cases, this information can be obtained by reviewing the operative record from the previous surgery. Other information in this record, such as the indication for the Caesarean section and the opinion of the previous surgeon, may be helpful in counselling as well. The fact that the record has been reviewed and that no contraindications to a TOL after Caesarean are present should be documented clearly on the prenatal record.³⁴ If the operative record is not available, the scar is considered “unknown.” Review of the operative report from previous hysterotomy or myomectomy should be documented in detail.

Recommendation

2. The intention of a woman undergoing a TOL after Caesarean should be clearly stated, and documentation of the previous uterine scar should be clearly marked on the prenatal record (II-2B).

Facilities and Resources

A trial of labour after Caesarean is always associated with a risk of uterine rupture, however small, and a good outcome is not guaranteed under any circumstances. Further, little evidence exists about the exact timing of a Caesarean section following a suspected uterine rupture, which would prevent a poor neonatal outcome. A TOL after Caesarean can be offered to women within any hospital setting where there is an ability to perform a Caesarean section.^{13,34,35} This document does not intend to set a standard regarding whether staff must be “in house” or “on site” to provide safe intrapartum care and therefore makes no statements on such attendance. Facilities providing TOL after Caesarean should have a policy in place to manage such parturients, so that all resources are mobilized promptly if an intrapartum emergency occurs.²³ The SOGC recognizes that in such cases of maternal fetal compromise, necessitating timely Caesarean section, an approximate time frame of 30 minutes may be required to assemble the team and commence laparotomy. This availability and time required for obstetric, anesthetic, and pediatric services to attend such an emergency should be fully discussed with the woman. Women who live in areas where local hospitals cannot provide a timely Caesarean section should be offered the opportunity for transfer to a facility where this service is available, in order to permit a TOL after Caesarean.¹³ The members of the team who could be called urgently in the case of an intrapartum complication (anesthetic, pediatric, and obstetric services) should be notified that the woman is in hospital and in labour, and their availability should be confirmed.

Labour and delivery in women who have had a previous Caesarean section should be conducted in a hospital setting with facilities for a laparotomy.

Recommendation

3. For a safe labour after Caesarean section, the woman should deliver in a hospital where a timely Caesarean section is available. The woman and her health care provider must be aware of the hospital resources and the availability of obstetric, anesthetic, pediatric, and operating-room staff (II-2A).

4. Each hospital should have a written policy in place regarding the notification and (or) consultation for the physicians responsible for a possible timely Caesarean (III-B).

5. In the case of a TOL after Caesarean, an approximate time frame of 30 minutes should be considered adequate in the set-up of an urgent laparotomy (III-C).

Maternal Monitoring

Women planning a TOL after Caesarean should have appropriate monitoring in labour. The presence of a devoted birth attendant is ideal. Progress of labour should be assessed frequently, as there is some evidence that prolonged or desultory labour is associated with an increased risk of failure and uterine rupture.^{19,36,37} Epidural analgesia is not contraindicated.^{7,19,34,38}

Fetal Monitoring

Continuous electronic fetal monitoring in labour is recommended for all women attempting TOL after Caesarean.^{19,34,39} The most reliable first sign of uterine rupture is a nonreassuring fetal heart tracing.³⁴ This may be sudden in onset and may not be related to contractions.⁴⁰

Recommendation

6. Continuous electronic fetal monitoring of women attempting TOL after Caesarean is recommended (II-2A).

POSTPARTUM EVALUATION

Routine digital exploration of the Caesarean scar postpartum is not necessary, except when signs or symptoms suggest uterine rupture.⁴¹

UTERINE RUPTURE

Uterine rupture, the most serious complication of a TOL after Caesarean, is defined as complete separation of the myometrium with or without extrusion of the fetal parts into the maternal peritoneal cavity and requires emergency Caesarean section or postpartum laparotomy.^{19,42} It is an uncommon complication of VBAC but is associated with significant maternal and perinatal morbidity and mortality.^{1,7} The most common sign or symptom of uterine rupture is nonreassuring fetal heart rate monitoring.^{18,20,43} Other clinical signs include the cessation of contractions,

loss of the presenting part on vaginal examination, abdominal pain, vaginal bleeding, hematuria, or maternal cardiovascular instability.^{16,44}

The type and location of the previous uterine incision helps to determine the risk of uterine rupture. The incidence of uterine rupture is 0.2% to 1.5% in women who attempt labour after a transverse lower uterine segment incision^{14,16,18,27,45} and 1% to 1.6% in women who have had a vertical incision in the lower uterine segment.^{46–49} The risk is 4% to 9% with a classical or “T” incision; thus TOL after Caesarean is contraindicated in these situations.^{16,19,30} Shimonovitz *et al.* found the risk of uterine rupture after 0, 1, 2, and 3 VBAC deliveries to be 1.6%, 0.3%, 0.2%, and 0.35%, respectively, indicating that the risk of uterine rupture decreases after the first successful VBAC.⁵⁰

Since uterine rupture is a rare event, a realistic appraisal of potential maternal and perinatal risks is difficult to accomplish outside of large series, literature reviews, or meta-analyses. The most important published reports in this area are discussed below, as well as those applicable to the Canadian population.

In 1991 Rosen *et al.* performed a meta-analysis of 10 studies that examined a total of 4617 women who had a TOL after Caesarean compared with 3831 women who had ERCS births.²⁸ The rate of uterine rupture was similar in the 2 groups: TOL 0.18% and ERCS 0.19% ($P = 0.5$). There was no difference in the rate of maternal death (0.028% vs. 0.024%) or perinatal death (0.3% vs. 0.4%) in the TOL group, compared with the ERCS group.²⁸

In 2000 Mozurkewich and Hutton published a meta-analysis of 15 studies that examined a total of 28 813 women undergoing a TOL compared with ERCS between 1989 and 1999.³² There was an increased rate of uterine rupture (0.39% vs. 0.16%; OR, 2.1; 95% CI, 1.45–3.05) and perinatal mortality (0.58% vs. 0.28%; OR, 1.71; 95% CI, 1.28–2.28) in the TOL group. The rates of maternal mortality and low 5-minute Apgar scores were not different.³²

In 2002 Keiser *et al.* reviewed the incidence and consequences of uterine rupture in Nova Scotia from 1988 to 1997.⁵¹ Among 4516 women undergoing a TOL, 18 (0.39%) uterine ruptures were documented over 10 years. All women underwent laparotomy, and there were no maternal deaths. Of those who had a uterine rupture, 3 women underwent hysterectomy, 10 required transfusion, and 5 suffered a cystotomy. After excluding lethal anomalies, there was 1 perinatal death (0.02%) and 6 neonates with severe asphyxia (0.13%).⁵¹

In 2002 Bujold *et al.* examined the risk factors for serious neonatal morbidity associated with 23 cases of uterine rupture among 2233 women attempting a TOL (rate 1.03%).⁵² Nine neonates (0.4%) had a pH < 7.0 (severe metabolic acidosis), 3 (0.13%) were diagnosed with hypoxic ischemic

encephalopathy, and 1 (0.04%) died.⁵² The presence of placental or fetal part extrusion at laparotomy was associated with severe metabolic acidosis ($P < 0.001$).⁵² Other variables (e.g., induction, birth weight, or use of epidural) did not demonstrate an association with uterine rupture. Even in situations where very rapid decision to delivery times were recorded, some cases of perinatal acidosis could not be avoided.⁵²

Smith *et al.* published a large series of 15 515 women undergoing a TOL after Caesarean compared with 9014 women who underwent ERCS between 1992 and 1997.⁵³ The rate of perinatal death in the TOL group was 0.129%, 11.6 times higher than that of the ERCS group (OR, 11.6; 95% CI, 1.6–86.7).⁵³ Smith compared this to the risk of perinatal death in other common obstetrical situations: TOL compared with multiparous women in labour (OR, 2.2; 95% CI, 1.3–3.5) and TOL compared with nulliparous women in labour (OR, 1.3; 95% CI, 0.8–21).⁵³

In 2003 Chauhan *et al.* published a review of data on the maternal and perinatal complications of uterine rupture in those attempting a TOL after Caesarean.⁵⁴ Examining 142 075 trials of labour revealed an overall rate of uterine rupture of 0.62%.⁵⁴ The rate of maternal death was 0.002%; hysterectomy, 0.09%; transfusion, 0.18%; and genitourinary tract injury, 0.08%.⁵⁴ In this study, the rate of neonatal acidosis was 0.15%, and the rate of perinatal death was 0.04%.⁵⁴ Oxytocin was involved in 43% of the uterine ruptures in this series.⁵⁴

The data indicate that the relative risk of uterine rupture, maternal morbidity, and perinatal mortality or severe morbidity is increased in women undergoing a TOL after Caesarean, compared with ERCS, but that the absolute risk remains very low.

The treatment of suspected uterine rupture is timely laparotomy after maternal stabilization and anaesthesia. Urgent intervention is mandatory to obtain the best possible outcome for both mother and fetus. Once the fetus is delivered, maternal hemorrhage must be arrested, and if the uterus cannot be salvaged, hysterectomy may be required.

Although the risk of uterine rupture has been found to be increased in situations of prolonged labour with augmentation,⁵⁵ when Phelan *et al.* retrospectively examined the patterns of uterine activity before uterine rupture, no association with frequency or intensity of contractions could be discerned.⁴⁰

In 1996 Rozenberg *et al.* examined ultrasonographic measurement of the lower uterine segment’s myometrial thickness at 36 to 38 weeks’ gestation as a predictor of uterine rupture and found that if the lower segment thickness was less than 3.5 mm, the risk of uterine rupture or dehiscence was 11.8%; if the measurement was greater than 3.5 mm, the risk of uterine rupture was minimal.⁵⁶ However, the

incidence of uterine rupture in this population was 2.3%, significantly greater than the usually quoted 1%. Therefore, the positive predictive value of this test in clinical practice will be much lower.⁵⁶ In a follow-up open study, Rozenberg *et al.* found that the use of the lower-uterine-segment measurement helped clinicians select women for a TOL after Caesarean.⁵⁷ The rate of successful VBAC for those with 1 previous Caesarean section did not change but was increased in those with 2 previous Caesarean deliveries.⁵⁷ These findings will need to be confirmed in further randomized studies before ultrasonography can be used to make a decision about the safety of TOL after Caesarean.

Recommendation

7. Suspected uterine rupture requires urgent attention and expedited laparotomy to attempt to decrease maternal and perinatal morbidity and mortality (II-2A).

OXYTOCICS AND TOL AFTER CAESAREAN SECTION

Augmentation

In 1987 Flamm *et al.* performed a multicentre examination of 485 women who received oxytocin to augment their spontaneous labour in a planned TOL after Caesarean.⁵⁸ No increase in the risk of uterine rupture, maternal morbidity, or perinatal morbidity or mortality was detected.⁵⁸ Zelop *et al.* supported the same conclusion about the risk of uterine rupture with augmentation in a 1999 study (OR, 2.3; 95% CI, 0.8–7.0).⁵⁹ Goetzl *et al.* examined the relation between the dose of oxytocin used and the risk of uterine rupture in women undergoing a TOL after Caesarean.⁶⁰ No significant association was detected between exposure to oxytocin and the risk of uterine rupture.⁶⁰ Careful surveillance for progress of labour is required, especially when the diagnosis of dystocia is being considered.^{19,34} There are insufficient studies examining the use of other agents to augment labour, such as prostaglandins, and their safety in a TOL after Caesarean.

Induction

In 2000 Ravasia *et al.* reviewed the risk of uterine rupture in women undergoing an induction TOL after Caesarean.⁶¹ In 575 women with a previous Caesarean section, labour was induced with prostaglandin E2 gel (n = 172), intracervical foley catheter (n = 129), or amniotomy and (or) oxytocin (n = 274).⁶¹ Outcomes were compared with women undergoing a TOL with spontaneous labour. The risk of uterine rupture was not increased in women who underwent either amniotomy/oxytocin or foley catheter induction but was significantly increased in those who underwent a prostaglandin E2 induction ($P = 0.004$).⁶¹

Also in 2000, Sanchez-Ramos *et al.* performed a meta-analysis looking at the efficacy and safety of prostaglandin

E2 for cervical ripening in women with a previous Caesarean section and found it to be effective and not associated with an increased risk of uterine rupture (OR, 1.46; 95% CI, 0.96–2.22), compared with spontaneous labour.⁶²

In 2003 Delaney and Young reported the examination of 3746 women with a prior Caesarean delivery who underwent either induced or spontaneous labour.⁶³ They found that induced labour was associated with a greater risk of early postpartum hemorrhage (7.3% vs. 5.0%; OR, 1.66; 95% CI, 1.18–2.32), Caesarean delivery (37.5% vs. 24.2%; OR, 1.84; 95% CI, 1.51–2.25), and admission to a neonatal intensive care unit (13.3% vs. 9.4%; OR, 1.69; 95% CI, 1.25–2.29).⁶³ There was a trend toward a higher rate of uterine rupture, but this was not statistically significant (0.7% vs. 0.3%, $P = 0.128$).⁶³

In another retrospective study of 560 women, the rate of uterine rupture in women whose labour was induced with oxytocin was 2%, with prostaglandin was 2.9%, and with both was 4.5%.⁵⁹

Up to 2001, there were conflicting data on the risk of labour induction with prostaglandin E2. Several other smaller studies reported that it appeared to be safe, effective, and not associated with an increased risk of uterine rupture.^{45,64–66}

In the largest study published to date, conducted by Lydon-Rochelle *et al.*, the incidence of uterine rupture was reviewed retrospectively in 20 095 women with a previous Caesarean section and was reported as follows: ERCS (no labour) 0.16%; spontaneous labour 0.52% (RR, 3.3; 95% CI, 1.8–6.0); labour induced without prostaglandin 0.77% (RR, 4.9; 95% CI, 2.4–9.7); and labour induced with prostaglandin 2.45% (RR, 15.6; 95% CI, 8.1–30.0).⁶⁷

As for all inductions, the indication for induction in women undergoing a planned TOL after Caesarean should be compelling and documented. The possibility that the use of oxytocin and (or) prostaglandin for labour induction in women considering TOL after Caesarean may be associated with an increased risk of uterine rupture and its sequelae must be discussed with the parturient. The absolute risks of uterine rupture are low, but the relative risks (especially with the use of prostaglandin E2, compared with spontaneous labour) are greater.

Misoprostol

Misoprostol has been proposed as an effective and economical agent for cervical ripening and induction.⁶⁸ In 1998 Sciscione *et al.* reported a case of uterine rupture in a woman with 2 previous Caesarean deliveries after misoprostol was administered as a cervical ripening agent.⁶⁹ Several small series reported a risk from 0% to 11.7% of uterine rupture with misoprostol in women undergoing a TOL after Caesarean.^{43,70–73} Blanchette *et al.* compared prostaglandin E2 to misoprostol in women undergoing induction TOL after

Caesarean and found them to be equally effective, but misoprostol was associated with a higher incidence of uterine rupture (18.8% compared to no ruptures in the prostaglandin E2 group).⁷⁴ The numbers in all these studies are small, and it is difficult to draw meaningful conclusions. Until further randomized studies are completed, misoprostol should be discouraged as a method of induction or cervical ripening in women with previous Caesarean delivery.^{74,75}

CERVICAL PREPARATION

In situations where delivery is indicated and the cervix is unfavourable, TOL after Caesarean can be considered. Various methods of cervical ripening have been examined. In a cohort study published in 2002, Ben-Aroya *et al.* compared women undergoing a trial of labour after Caesarean section in 3 situations: spontaneous labour (n = 1432), prostaglandin cervical ripening (n = 55), and cervical ripening by foley catheter (n = 161).⁷⁶ There was a significantly higher rate of dystocia (30.4% vs. 11.6%, $P < 0.01$) and repeat Caesarean section in the second stage (49.1% vs. 35.2%, $P < 0.01$) in the foley catheter group, compared with the control group.⁷⁶ There was no difference in the rate of uterine rupture, fetal distress, or Apgar scores.⁷⁶ In a Canadian study published in 2004, Bujold *et al.* compared the rate of uterine rupture in 1807 women who presented in spontaneous labour, 417 induced with amniotomy with or without oxytocin, and 255 induced with transcervical foley catheter.⁷⁷ The rate of successful vaginal birth was 78% in the spontaneous group, 77.9% in the amniotomy group, and 55.7% in the transcervical foley group ($P < 0.001$).⁷⁷ However, the rates of uterine rupture did not differ significantly: 1.1%, 1.2%, and 1.6%, respectively ($P = 0.81$).⁷⁷ These data support the use of the foley catheter for cervical ripening of an unfavourable cervix in women undergoing a TOL after Caesarean.

Recommendations

8. Oxytocin augmentation is not contraindicated in women undergoing a TOL after Caesarean (II-2A).
9. Medical induction of labour with oxytocin may be associated with an increased risk of uterine rupture and should be used carefully after appropriate counselling (II-2B).
10. Medical induction of labour with prostaglandin E2 (dinoprostone) is associated with an increased risk of uterine rupture and should not be used except in rare circumstances after appropriate counselling (II-2B).
11. Prostaglandin E1 (misoprostol) is associated with a high risk of uterine rupture and should not be used as part of a TOL after Caesarean (II-2A).
12. A foley catheter may be used safely to ripen the cervix in a woman planning a TOL after Caesarean (II-2A).

SPECIAL CIRCUMSTANCES

More Than 1 Previous Low Transverse Caesarean Section

Several authors have assessed the rate of successful VBAC and the risk of uterine rupture in women with more than 1 previous low transverse Caesarean section.^{8,78–84} All indicated success rates between 62% and 89% and uterine rupture rates between 0% and 3.7%. In the largest study, Miller *et al.* demonstrated a VBAC success rate of 75.3% in 1827 women with 2 or more previous low transverse Caesarean deliveries, with a uterine rupture rate of 1.7% versus 0.6% in the ERCS group (OR, 3.06; 95% CI, 1.95–4.79).⁸ Unfortunately, the use of prostaglandins or oxytocin for induction or augmentation was not considered. Caughey *et al.* reported a uterine rupture rate of 3.7% versus 0.8% (RR, 4.8; 95% CI, 1.8–13.2) in a retrospective review of 134 women undergoing labour after 2 previous Caesarean deliveries after correction for prostaglandin, oxytocin, and epidural use.⁸⁴

Recommendation

13. The available data suggest that a trial of labour in women with more than 1 previous Caesarean is likely to be successful but is associated with a higher risk of uterine rupture (II-2B).

Multiple Pregnancy

Seven studies have examined a total of 233 women attempting VBAC in multiple pregnancy.^{85–91} All support a trial of VBAC in multiple pregnancy as being safe and effective, with success rates of 69% to 84% and without increased maternal or fetal morbidity or mortality.^{85–91} In one study, uterine dehiscence was noted in 1 woman on manual exploration after successful vaginal delivery of both twins, and no treatment was required.⁸⁶ Each of these studies examined a small number of women, however, and greater numbers would be required to detect rare outcomes such as uterine rupture and maternal and perinatal mortality.

Recommendation

14. Multiple gestation is not a contraindication to a TOL after Caesarean (II-2B).

Breech Presentation

A large multicentre trial by Hannah *et al.* demonstrated that a planned Caesarean birth is associated with better perinatal and neonatal outcomes in breech presentation at term.⁹² This recommendation has been adopted by the SOGC and would therefore preclude a planned TOL after Caesarean in women presenting with a singleton fetus in breech presentation at term.^{92,93} Vaginal delivery of premature fetuses and the second twin were not addressed in the study; therefore, no recommendations can be made in this regard. It would seem appropriate to consider these cases individually.

External cephalic version is not contraindicated in women with a previous Caesarean birth.^{94,95}

Diabetes Mellitus

In a retrospective cohort study, Coleman *et al.* examined the issue of TOL after Caesarean in women with gestational diabetes mellitus (GDM).⁹⁶ Coleman examined 156 women with GDM and planned TOL after Caesarean and compared them with women with no GDM and attempting TOL after Caesarean. They reported that the success rate for VBAC of 64.1% in women with GDM was lower than the 77.2% of women without GDM ($P < 0.001$).⁹⁶ Maternal and fetal morbidities were comparable.⁹⁶ A retrospective study of TOL after Caesarean in women with pregestational or gestational diabetes found similar results.⁹⁷ Based on these studies, diabetes mellitus should not be considered a contraindication to TOL after Caesarean.

Recommendation

15. Diabetes mellitus is not a contraindication to TOL after Caesarean (II-2B).

Macrosomia

In a study examining the outcome of 365 women who underwent a TOL after Caesarean and who were giving birth to neonates weighing more than 4000 g, Zelop *et al.* demonstrated a success rate of 60%, with no increase in maternal or fetal morbidity and no increase in the risk of uterine rupture.⁹⁸ These data support previously reported findings by Flamm (success rate 58%)⁹⁹ and Phelan (success rate 67%).¹⁰⁰ In 2003 Elkousy *et al.* reported an examination of 9960 women with a previous Caesarean section planning a trial of labour. The study was further stratified by neonatal birth weights and birth history (primarily, whether they had a previous vaginal delivery and whether it occurred before or after their Caesarean).¹⁰¹ Their results indicate that the likelihood of successful VBAC decreases with increasing birth weight and is lowest in women who have never had a successful vaginal birth.¹⁰¹ According to these results, suspected macrosomia is not a contraindication to TOL after Caesarean, though it may be associated with a lower chance of success.

Recommendation

16. Suspected fetal macrosomia is not a contraindication to a TOL after Caesarean (II-2B).

Interdelivery Interval

Four studies have examined the relation between the interdelivery interval and the rate of successful VBAC and uterine rupture.^{102–105} Esposito *et al.* examined 23 cases of uterine rupture and compared them with 127 control subjects.¹⁰² There was an increased risk of uterine rupture with a short interpregnancy interval (< 6 months between pregnancies; < 15 months between deliveries), compared with

control subjects (17.4% vs. 4.7%, $P = 0.05$).¹⁰² Shipp *et al.* reviewed 311 women who underwent a TOL after Caesarean less than 18 months after their Caesarean section and compared them with 2098 women who underwent a TOL after Caesarean after more than 18 months.¹⁰³ The shorter interval was associated with a threefold increase in the risk of uterine rupture (2.25% vs. 1.05%; OR, 3.0; 95% CI, 1.2–7.2).¹⁰³ Huang *et al.* reviewed 1185 women undergoing a TOL after Caesarean and noted no difference in the success of vaginal delivery in women with a shorter interval of less than 19 months (79% vs. 85.5%, $P = 0.12$); however, they did note a significant difference in successful VBAC in women who underwent medical induction, compared with spontaneous labour (14.3% vs. 86.1%, $P < 0.01$).¹⁰⁴ Their study noted no difference in the rate of uterine rupture.¹⁰⁴ In 2002 Bujold *et al.* reported an observational study of 1527 women undergoing a planned TOL after Caesarean at different intervals from the index Caesarean delivery.¹⁰⁵ The rates of uterine rupture were as follows: < 12 months, 4.8%; 13 to 24 months, 2.7%; 25 to 36 months, 0.9%; and > 36 months, 0.9%.¹⁰⁵ After adjusting for such confounders as number of layers in the uterine closure, induction, oxytocin, and epidural use, the odds ratio for uterine rupture in a woman less than 24 months from her last delivery was 2.65 (95% CI, 1.08–6.46).¹⁰⁵

Recommendation

17. Women delivering within 18 to 24 months of a Caesarean section should be counselled about an increased risk of uterine rupture in labour (II-2B).

Postdatism

Three studies have examined postdatism and TOL after Caesarean.^{106–108} In 2 of these studies, the rate of successful VBAC and uterine rupture in women who delivered at less than 40 weeks' gestation was compared with those who delivered at more than 40 weeks.^{106,107} Success rates for VBAC after 40 weeks were reported from 65.6%¹⁰⁷ to 73.1%¹⁰⁶ and were comparable to success rates for women who delivered before 40 weeks' gestation.^{106,107} Zelop *et al.* also compared the risk of uterine rupture in women who delivered before and after 40 weeks' gestation in spontaneous labour and induced labour.¹⁰⁸ They reported that the risk of uterine rupture in a TOL after Caesarean after 40 weeks' gestation was not significantly increased when compared with women who delivered before 40 weeks, whether in spontaneous labour (1.0% vs. 0.5%, $P = 0.2$, adjusted OR, 2.1; 95% CI, 0.7–5.7) or after induction (2.6% vs. 2.1%, $P = 0.7$, adjusted OR, 1.1; 95% CI, 0.4–3.4).¹⁰⁸

Recommendation

18. Postdatism is not a contraindication to a TOL after Caesarean (II-2B).

One- Versus 2-Layer Closure of Low Transverse Caesarean Section

In 1992 Hauth *et al.* published data comparing operative time, endometritis, transfusion, and placement of extra hemostatic sutures in women undergoing uterine closure in 1 layer compared with 2 layers.¹⁰⁹ The only significant difference was in operative time: 44 minutes with 1-layer closure, compared to 48 minutes with 2-layer closure ($P < 0.05$).¹⁰⁹ Ohel *et al.* published similar findings in 1996.¹¹⁰ The trend shifted in many centres toward single-layer closure.

In 1997 Chapman *et al.* published a review of 145 women who underwent a TOL after Caesarean after being randomized to either 1-layer or 2-layer closure in the previous Caesarean section.¹¹¹ They reported no significant difference in the outcome of the next pregnancy.¹¹¹ In a 2002 review of 2142 women who underwent a TOL after Caesarean, Bujold *et al.* noted that a 1-layer interlocking closure was associated with an increased risk of uterine rupture when compared with a 2-layer closure (3.1% vs. 0.5%, $P < 0.001$; OR, 3.95; 95% CI, 1.35–11.49).¹¹² Further study in this area is recommended.

Unknown Scar

All records available or obtainable describing the woman's previous Caesarean section should be reviewed. If unavailable, information about the circumstances of the Caesarean section will help determine the likelihood of a vertical uterine incision.^{113,114} Most unknown scars will be lower transverse incisions (92%) and therefore at low risk for uterine rupture.¹¹⁵ If the history suggests a reasonable likelihood of a classical incision, it would be prudent to recommend a repeat Caesarean section, but in settings where the history indicates a high likelihood of lower transverse uterine incision and the woman wishes to proceed after counselling, TOL after Caesarean is acceptable.¹¹⁵

Recommendation

19. Every effort should be made to obtain the previous Caesarean operative report to determine the type of uterine incision used. In situations where the scar is unknown, information concerning the circumstances of the previous delivery is helpful in determining the likelihood of a low transverse incision. If the likelihood of a lower transverse incision is high, TOL after Caesarean can be offered (II-2B).

Other Factors

Factors such as maternal obesity,¹¹⁶ presence of postpartum fever after Caesarean section,¹¹⁷ type of suture material, müllerian duct anomalies,¹¹⁸ and maternal age¹¹⁹ and their relation to the risk of uterine rupture have been examined in small studies, but definitive conclusions cannot yet be drawn.

CONCLUSION

Trial of labour after Caesarean section should be considered in women who have no contraindications after appropriate discussion. The efficacy and safety of a TOL after Caesarean in appropriately selected women about to give birth in a hospital where timely Caesarean section facilities are available is well supported. Support of the woman in labour, including close observation of herself and her fetus for signs of complications, is recommended.

Augmentation of labour with oxytocin is safe. Induction of labour may be provided when the indication for induction is compelling and the risks have been fully discussed. The use of prostaglandin E2 (dinoprostone) and prostaglandin E1 (misoprostol) in women planning a TOL is not recommended. The use of a foley catheter for cervical ripening in situations where the cervix is unfavourable is associated with a lower chance of success but no increased risk of uterine rupture.

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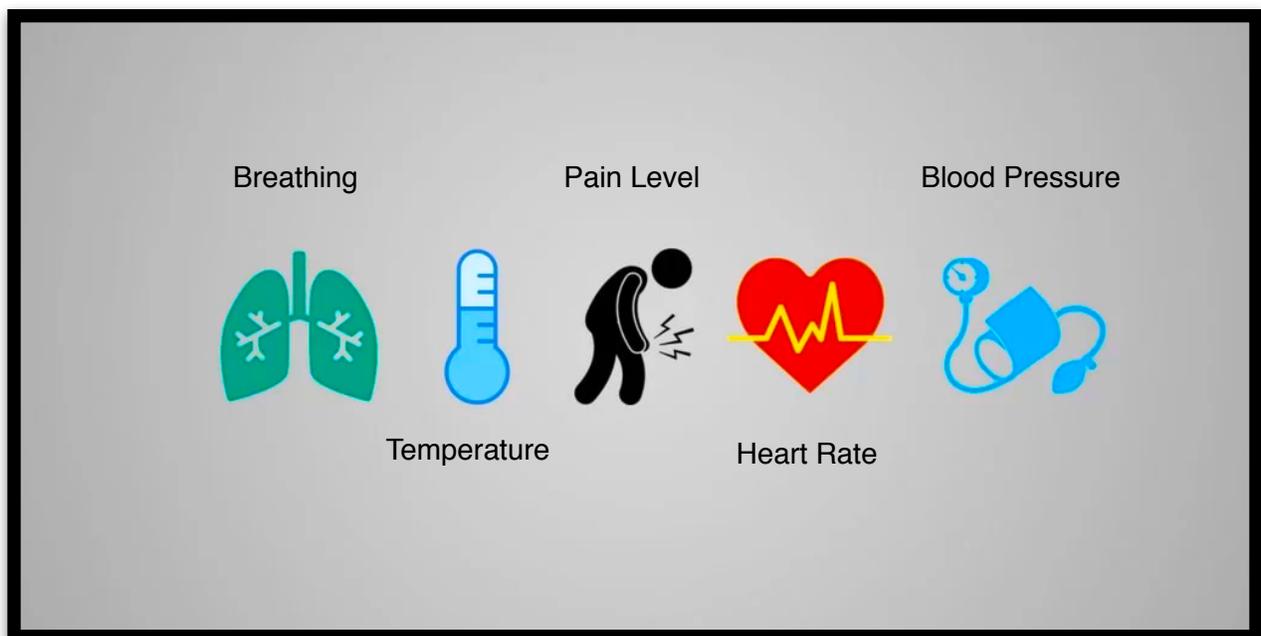
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Common Assessments and Procedures During Labour and Birth

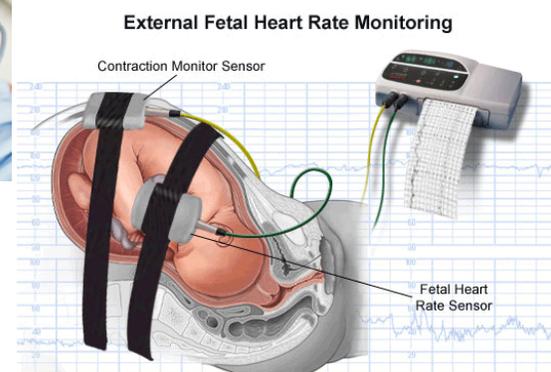
Vital Signs

We will check these during your labour and right after birth to make sure you are doing well throughout the process



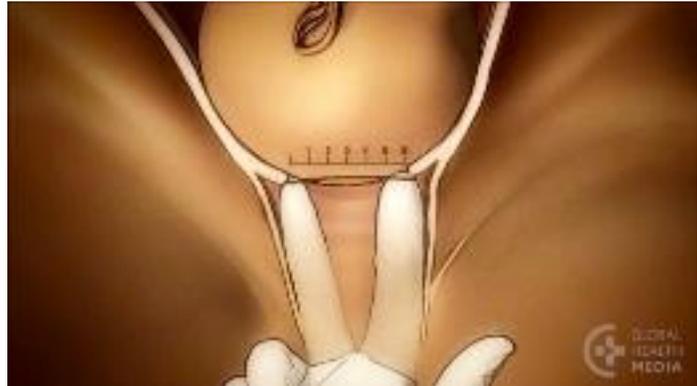
Baby's Heart Rate

Checking the baby's heart rate can let us know how the baby is reacting to labour. We normally listen with a doppler (like the one we use in clinic) and may choose to use a continuous electronic monitor in the hospital if the baby needs closer monitoring.

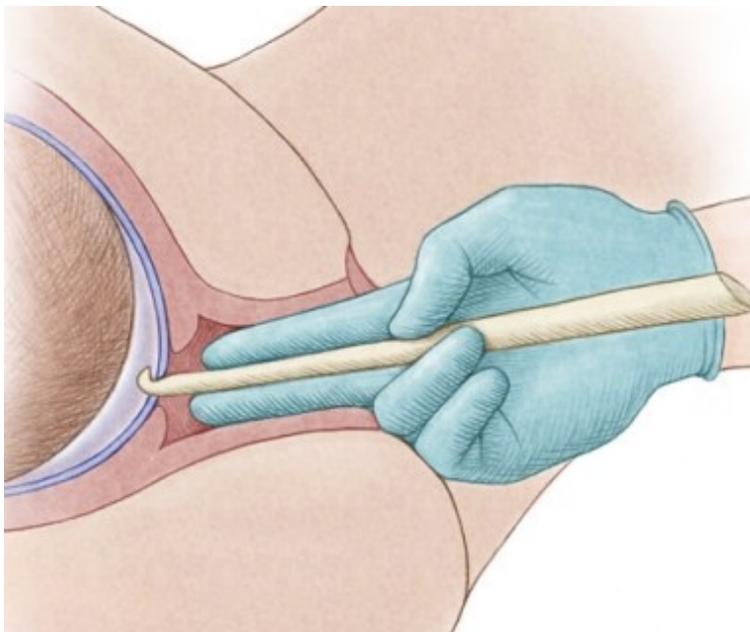


Vaginal Exams

A vaginal exam is using two fingers of a gloved hand with lubrication to check inside your body to see if the bottom part of the uterus (cervix) is opening (dilation) and softening (effacement), how low the baby is in the pelvis (station) and if the bag of water is broken or not. With your permission, we do these exams to help us know when labour has started, to let us know if labour is progressing, and confirm if it's time to push and any time we (or you) need more information to make decisions. We will explain beforehand the reason for the exam, and the information we find after the exam.



Breaking the Bag of Water (ARM- artificial rupture of membranes)



The bag of water is a sac made of membranes like a water balloon with amniotic fluid in it. Sometimes that bag will break all on its own (SROM- spontaneous rupture of membranes) in a big gush or sometimes with just a little trickle. Sometimes it breaks before contractions start, sometimes it breaks during contractions with labour. The bag of water acts like a cushion in front of the baby's head. Sometimes that cushion can keep the baby from coming lower into the pelvis. We will let you know if we think it would benefit the progress of labour by putting a small hole in the bag so the cushion can leak out. We use a special tool to break the bag open that does not cause harm to you or the baby. Labour often gets stronger and progresses faster after the bag of water is open, so we make sure that you and the baby are ready for the next step.

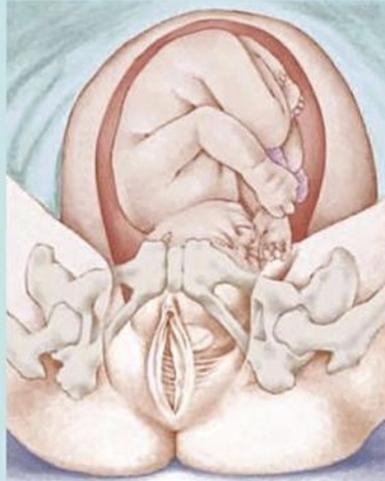
Gentle Birth of the Baby's Head

We will work with you to have a gentle birth of the baby's head and reduce the risk of tearing the muscle and tissue around your vagina. We will often use warmed, wet cloths or lubrication to help stretch your tissues as the head begins to come out. We may offer a mirror to allow you to see, or encourage you to feel the baby's head so that you can understand the change you are making. Sometimes we will instruct you to breathe or stop pushing when the head is stretching the tissues the most (crowning) to allow a gentle birth of the baby's head.

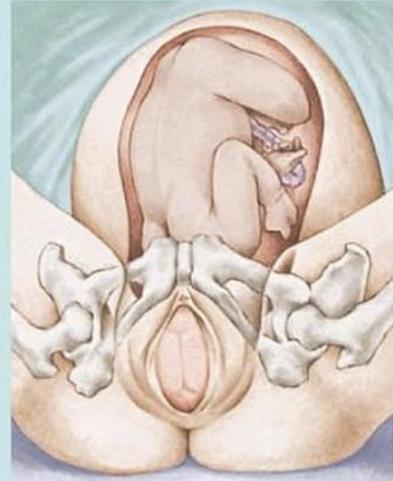
Checking for the umbilical cord around the baby's neck

After the baby's head is out, we will check to see if the umbilical cord is around the baby's neck. This is quite common (30% of births) and usually we can slip it over the baby's head. Sometimes we can adjust the baby so the rest of the baby can be born and the tight cord can be unlooped after the baby is fully out. Occasionally, the cord will be quite tight and we will clamp and cut the cord to allow the rest of the baby to be born safely. We will let you know what we will need to do at the time.

Description & illustrations from Dr. Miriam Stoppard's *New Pregnancy & Birth Book*



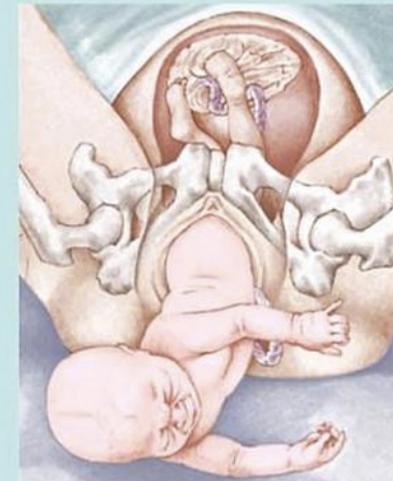
1 With each contraction in the second stage of labor, more of the baby's head appears at the vaginal opening. The anus and the perineum bulge out with the pressure of the head.



2 As the baby's head crowns, the stinging sensation is followed by numbness as the vaginal tissues are stretched so thin that the nerves are blocked. The head then slips out at last.



3 The baby's head is born facing downward toward the rectum but the baby immediately turns to face your thigh to get into a good position for the birth of the body.



4 The midwife will clear any fluid and mucus from the baby's air passages. The next uterine contraction is usually sufficient to deliver the shoulders and then the body.

The Birth of the Placenta (the Afterbirth)

Shortly after the baby is out, the placenta also needs to come out. There are different ways that this can happen. The first way is called “active management”. This is when a shot (injection) of medication (oxytocin) is given in your thigh (or in your IV if you have one) that makes your uterus contract quickly so that the uterus works to expel the placenta. This way has been shown to reduce the risk of having too much bleeding after birth. The second way is called “expectant management”. If your body has effectively pushed out your baby, then the uterus is ready for the job of pushing out the placenta. As long as there is not heavy bleeding and your uterus is contracting regularly, we expect that the uterus will move the placenta out while you are pushing. When the time comes, we will tell you if we think you are at higher risk of bleeding.



Suturing (Stiches)

After the baby and placenta are out, with your permission, we will check your tissues to see if there are any tears. If we think stitches will help the tissues to heal closed, we will give you a freezing medication that will help the suturing to be less painful. Rarely, the tear may be complicated and we will ask an OB to repair the tear. All the material that is used for suturing is dissolvable, but we will examine how the stitches are healing in the weeks after the birth to see if there is benefit to removing them sooner.

