Balanced Care for Women™

PRENATAL BOOK

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INTRODUCTION

We are pleased to have you and your baby or babies as our patients. Our Obstetrics and Gynecology (OB/GYN) group's mission is to provide excellent care that is technically advanced, caring and helpful. The doctors work as a team in conjunction with the nurse practitioners, nurses, technicians and front desk staff to ensure that you receive the highest quality care. Our primary goal is to deliver a healthy baby to you. We believe that an informed patient is better equipped to make decisions that will result in a superior outcome. As such, we will provide information and teaching so that you will participate in your own medical care. If necessary, we will refer you to a specialist for consultation (i.e., perinatologist, geneticist, surgeon, or your primary care physician) to address your medical needs. Some patients have multiple risk factors that require more specialized care and in these cases it may be necessary to transfer your care to a perinatologist.

Some patients express the desire to follow birth plans. We are happy to work with those patients to the extent possible; however, we need to emphasize that during the labor process we will ultimately follow medical procedures that are the safest for you and your baby. Most of the time having a baby is a wonderful, natural experience yet your time in labor is the most critical period of your child's life and we have great respect for all of the dangers inherent in this process. Please discuss your delivery preferences with your physician so that we can help you have the delivery experience you envision. We look forward to working with you as a team and being a part of the growth of your family!

Sincerely,

Laura Baalmann, M.D., F.A.C.O.G.
Holly Kodner, M.D., F.A.C.O.G.
Donna Senciboy, D.O., M.H.A.

PRENATAL COUNSELING CERTIFICATION

This is a copy of the form you will be asked to sign in our office.

AVOID DRUGS, CIGARETTES & ALCOHOL

Almost anything that enters your body affects your baby in some way. Early fetal development is rapid, complex, and very sensitive to outside influences. It is important to know about the effects of drugs, smoking, and alcohol on your baby's growth and development.

DRUGS

It is important to avoid ALL types of medications unless your health care provider has recommended them. When you take drugs or medications, no matter how common, your baby gets a dose, too. How this dose affects the baby is unclear. Its tiny, immature body may not react to the drug as your body does. If you use cocaine, this is likely to interfere with your unborn baby's oxygen supply. In addition, cocaine has also been linked to premature separation of the placenta which may cause premature birth, cerebral palsy, birth defects, or even death. As studies continue, we are discovering which drugs may cause birth defects if taken during pregnancy; however, much more work is needed in this area. Play it safe—don't take any medications or drugs unless you have talked to your health care provider first.

SMOKING

Cigarette smoking contains many harmful poisons, including nicotine and carbon monoxide. Nicotine narrows the blood vessels that carry blood and oxygen to the baby, so the baby gets less oxygen and nutrients for growth and development. Carbon monoxide is carried by blood and forces oxygen out of the red blood cells. Consequently, instead of the blood carrying oxygen to your baby, it is carrying carbon monoxide. **Babies born to mothers who smoke during pregnancy are more likely to be smaller. Studies show that women who smoke have a greater chance of stillbirths, spontaneous abortions, and premature deliveries than women who do not smoke.** If you don't smoke, don't start! If you do smoke, try to quit or at least cut down during your pregnancy. Remember, every breath you take is shared with your baby. An infant's exposure to secondhand smoke increases the risk of sudden infant death syndrome (SIDS).

ALCOHOL

Alcohol crosses the placenta and enters the baby's blood system in the same concentration as in your blood. A pregnant woman who drinks heavily risks having a baby with birth defects. Children of an alcoholic mother are at risk for Fetal Alcohol Syndrome (FAS), a specific pattern of physical and mental defects. Women who drink less frequently can cause some of the FAS characteristics in their babies. It is not known how many drinks are safe, if any. Therefore, if you are pregnant, avoid all alcohol.

CYSTIC FIBROSIS

Cystic fibrosis (CF) is a lifelong illness that causes problems with digestion and breathing. Cystic fibrosis is a genetic disorder that is usually diagnosed in the first few years of life. Testing is available to determine whether a person is at increased risk for giving birth to a child who will have CF. You are being provided with a brochure published by the American College of Obstetricians and Gynecologists (ACOG) called "Cystic Fibrosis Carrier Testing: The Decision is Yours." Please read the brochure and notify us promptly if you desire testing. It is your responsibility to request a lab requisition if you desire cystic fibrosis testing. You will need to confirm at the visit following the blood draw that our office received your results.

FIRST TRIMESTER SCREENING FOR DOWN SYNDROME AND TRISOMY 18

First trimester screening is a way to identify pregnancies at an increased risk for either Down syndrome or Trisomy 18, both of which are genetic abnormalities. Women at ANY age (not just women over 35) are candidates for this screening test. First trimester screening involves an early ultrasound and a blood test performed between 11-13 weeks of pregnancy and can detect up to 90% of pregnancies with Down syndrome. If you decide to proceed with First Trimester Screening, you must notify us **no later than the end of your 9th week of pregnancy.** Testing is performed between 11-13 weeks gestation and our office will assist you in scheduling this appointment. Additional information is located in this Prenatal Book under "Laboratory Testing."

FIRST TRIMESTER SCREENING FOR DOWN SYNDROME AND TRISOMY 18—Continued

If you opt for first trimester screening, you must be aware that it does **not** include screening for neural tube defects (such as spina bifida). If you desire screening for spina bifida, you will need to request an "alpha-fetoprotein"/AFP which is a component of the Quad Screen (see below) and involves a trip to the lab so that a sample of blood may be taken from your arm. The AFP test would be performed between 15-20 weeks gestation and you are responsible for requesting the lab requisition from your doctor or nurse practitioner. Please confirm at the visit following the blood draw that our office received your results.

CELL-FREE FETAL DNA

This is a new noninvasive testing option available for women with increased risk for fetal chromosome variation. The increased risk factors include one or more of the following: maternal age 35 or older, personal or family history of chromosomal abnormalities, or fetal ultrasound abnormality. The test name varies depending on which laboratory you choose (Harmony, MaterniT21-Plus or Panorama). It involves taking a blood sample from you as early as 12 weeks gestation. Your blood contains your DNA as well as DNA from your developing baby; the DNA from the baby is released from the placenta into your bloodstream. The test evaluates the amount of genetic material from chromosomes 13, 18 and 21. The company that performs the testing states that the detection rate for Down syndrome and Trisomy 18 is 99% and for Trisomy 13 is 92%. This is considered a screening test, thus if the test indicates that the baby has Down syndrome, Trisomy 13 or Trisomy 18, amniocentesis is recommended to confirm the results.

SECOND TRIMESTER SCREENING (QUAD SCREEN)

The Quad Screen is a blood-screening test that measures several hormonal substances in a pregnant woman's blood. This screening test helps to identify women at increased risk for carrying a fetus with Down syndrome, Trisomy 18 and open spina bifida. You are being provided with a brochure called "Second Trimester Prenatal Screening." Please read the brochure and notify us at your 16-week prenatal appointment if you desire testing. It is your responsibility to request a lab requisition if you desire testing. The Quad Screen needs to be drawn between 15-20 weeks gestation. Please confirm at the visit following the blood draw that our office received your results.

LABOR & DELIVERY

It is very important for patients to be comfortable with their physician and our practice (partner physicians, nurse practitioners, nurses, and staff). We are most interested in keeping you and your baby healthy during pregnancy and delivery. It is also important to know how your doctor will manage your labor and delivery and it is helpful to know this *long before* you reach the end of your pregnancy. We strongly support mothers-to-be who opt for natural labor; however, the primary determinant of our labor management strategy involves the health and safety of the mother and her baby. During your labor our doctors will:

- Confirm that you have IV access which is especially important in the unlikely event of an emergency.
- Initiate pitocin through the IV if indicated (to stimulate contractions or to help the uterus contract after delivery and minimize blood loss).
- Monitor your baby's well-being with external and/or internal fetal monitoring.
- Perform cesarean section delivery when indicated.
- Avoid performing an episiotomy unless it will prevent a significant trauma.
- Use vacuum or forceps to deliver a baby, if indicated, with your knowledge.

We request that you take instructional classes provided by the hospital of your choice. Our doctors have extensive experience in the management of labor and will take very good care of you and your baby. Most deliveries are smooth and enjoyable and we are honored to share this time with you! If you have any questions regarding our philosophy of labor management, please ask your physician or nurse practitioner promptly. Our nurses and nurse practitioners are very familiar with our philosophy and can address any concerns early in pregnancy.

ON-CALL PHYSICIANS

Our doctors rotate nightly call with other female private practitioners who are also on staff at Mercy Hospital and Missouri Baptist Medical Center. Therefore, it is possible that your own physician will not attend your delivery, especially if you are admitted to the hospital in the evening or during the weekend. Currently our physicians share call with Dr. Teresa Knight, Dr. Laura Eastep and Dr. Lindsay Sillas.

_____ _____

Patient's Signature Date

YOUR PRENATAL VISITS

Congratulations on your pregnancy! We want you to receive the best care possible. During the course of your pregnancy, it is essential that you keep your required appointments. You will have scheduled visits with our doctors, nurse practitioners, and registered nurses. Our nurse practitioners and registered nurses have years of Labor & Delivery experience and are an integral part of our team. If you experience complications in your pregnancy, we may need to see you more frequently. Your doctor will advise you as needed. Our goal is to keep you healthy and bring a healthy baby into this world!

This is required reading! Please use this booklet as a resource throughout your pregnancy. Answers to many questions are addressed in this booklet. It is a good idea to refer to this booklet prior to calling our office.

Your **first visit** will be with one of our nurse practitioners who will take a complete medical and surgical history. We need to know about your family history of illnesses and abnormal pregnancies, and your habits such as smoking, drinking, and drug use. These all affect your pregnancy and need to be communicated to us. It is also important to inform us about any genetic diseases in your family or in the family of the baby's father. Examples include thalassemia, mental retardation, muscular dystrophy, sickle cell disease, and cystic fibrosis. At this visit, you will be provided with information on what to expect during your pregnancy and will be given a *tentative* due date and requisitions for your blood work. You will have blood drawn at your first visit and you will be given pamphlets regarding additional prenatal testing that is optional (see pages 10-12). It is important to note that we will refer to your gestational age in ***weeks***, not months. Your due date is defined as 40 weeks from the start of your last menstrual period. When you first miss your period (when it would normally be starting) you are four weeks pregnant! You will also have a full exam and pap smear and will be advised to take an over-the-counter prenatal vitamin that contains DHA. The next time you will have a pelvic exam is at 36 weeks, near the end of your pregnancy, so you will not need to completely disrobe for the remainder of the routine prenatal visits.

At one of your first few visits we will ask you for your general preferences regarding scheduling of your appointments. When you return for your next visit, you will receive a list of appointment dates and times. Please review the list carefully and inform the receptionist if any changes are required.

The second visit is typically at **12 weeks** and at that visit we will listen for the heartbeat for the first time using a Doppler device. If you are going to be 35 years-old before your due date then we recommend that you consider genetic counseling. A geneticist meets with you and your partner to review your family histories and provides you with information regarding your risk for having a baby with a genetic abnormality (such as Down syndrome). After meeting with the geneticist, you decide whether you want to proceed with genetic testing. A genetic counseling appointment provides you with the necessary information to make an informed decision regarding testing but it does NOT obligate you to have any testing procedures performed. Please advise us if you want assistance scheduling a genetic counseling appointment.

There are two invasive procedures that can be used to diagnose genetic abnormalities. Amniocentesis is offered between **15-20 weeks** and Chorionic Villus Sampling (CVS) is performed between **10-12 weeks** of gestation.

Amniocentesis is performed by a Maternal-Fetal Medicine specialist (perinatologist) under ultrasound guidance and involves inserting a needle through the abdominal wall into the amniotic sac (bag of water) within the uterus. A small amount of fluid, which contains skin cells sloughed by the baby, is withdrawn and submitted to the lab for genetic evaluation of the baby's cells.

CVS is performed by a Maternal-Fetal Medicine specialist under ultrasound guidance. A very small catheter is introduced through the cervix to allow the removal of small segments of placental tissue that are analyzed for evidence of genetic abnormalities. CVS is also performed by a perinatologist. Since the test is performed early in pregnancy you will need to make your appointment as early as possible if you think that you are interested in CVS. You will receive counseling regarding the procedure at the time of your appointment. You are NOT obligated to undergo either procedure.

If you have any family or personal history of genetic abnormalities and you plan to have your appointment at Missouri Baptist, please ask one of our nurses to contact them with your information. Mercy Hospital allows patients to self-refer so you do not need our office to schedule your appointment. If you are undergoing age-related counseling and have no family history of abnormalities, then you can schedule your own appointment at either location.

MERCY HOSPITAL
Rachel Slaugh, MS, Certified Genetic Counselor
Kay LeChien, MS, Certified Genetic Counselor
Susan Jones, MS, Certified Genetic Counselor
314-251-6884

MISSOURI BAPTIST MEDICAL CENTER
314-996-6000, option 7

At every visit we will check your urine for sugar and protein and measure your weight and blood pressure. An early ultrasound may be performed if your due date is questionable. We will also check your baby's heart rate at every visit.

At **16 weeks,** we will send you for more screening blood work if you desire to help identify whether you are at increased risk for certain birth defects and Down syndrome. This test is a screening test only and if it is abnormal we will refer you for additional evaluation such as ultrasound and genetic studies before we draw any conclusions. You should receive a brochure from us at the time of your first visit regarding the test called "Second Trimester Prenatal Screening" so please let us know if you do not have a copy of this brochure.

At **19-21 weeks**, you will undergo ultrasound evaluation for fetal well-being. At this time we look at the baby's major anatomy and measurements. The following aspects of your baby's development are being evaluated at the time of your 20 week ultrasound: placenta location, umbilical cord, head measurement, visualization of heart chambers, stomach, liver, diaphragm, kidneys, bladder, waist measurement, femur (thigh bone) measurement, spine, amniotic fluid, and gender. We also attempt to visualize the face of the baby. If you do not wish to know your baby's gender, please inform our ultrasonographer at the time of your ultrasound. Our ultrasonographer will tell you the gender of your baby if she feels confident that she has had a good view of the genitalia. Please remember that we cannot guarantee correctness of gender but errors are not common. You may bring family members to the ultrasound visit but please note that the room is small so we would appreciate it if you would limit this to one or two visitors. Some of the ultrasound pictures from this scan can be downloaded on a thumb drive the day of your appointment.

At your **24 week** visit you will receive a lab requisition for your blood work to rule out gestational diabetes and to check for anemia. This test requires that you go to the lab, drink "glucola" and wait an hour before having your blood drawn. You do not need to fast for this lab work but we advise you to avoid large amounts of refined sugar the day of your test. For example, a breakfast of pancakes, syrup, and orange juice before going to the lab might alter your results. Eggs, cereal, or bagel/toast might be more sensible options! If your gestational diabetes test is abnormal then it is possible (but not definite) that you have gestational diabetes and a more extensive test will be required to make the diagnosis. We will send you information regarding a 3-hour glucose tolerance test if it is indicated. You cannot eat after midnight prior to the 3-hour test. Also, if you have developed anemia or borderline anemia, we will send you a letter with your result and a prescription for supplemental iron to be taken in addition to your daily prenatal vitamin.

At your **28 week** visit we will review your lab results with you and measure your fundal height, in addition to the regular measurements of your weight, blood pressure, and urine. Fundal height is the distance from your pubic bone to the top of your uterus measured in centimeters. In general, the fundal height should be within about two centimeters of the number of weeks of pregnancy. If we are concerned about the measurement on more than one occasion then we will typically proceed with ultrasound to more accurately measure the growth of the baby. Fundal heights can be affected by the build of a woman's body and are therefore not a definitive piece of information but serve as a good guideline for baby's growth. In years past, when ultrasound was not available, fundal height was the most reliable method to follow growth of a baby. After 28 weeks we will want you to be conscious of the baby's movements and keep a daily record of fetal movements. We will discuss this later in this booklet. If you have any concerns about your baby's movements at any point during your pregnancy, please let us know.

At your **32 week and 34 week** visits we will continue to follow your and the baby's measurements and address your questions regarding labor and delivery. Most women find that childbirth classes offered by the hospitals are helpful and this is a good point in pregnancy to talk to your physician about any of your concerns regarding labor and delivery. If you are taking childbirth classes at Missouri Baptist Medical Center, the information presented will include information about labor epidurals.

If you plan to deliver at Mercy Hospital then the Anesthesia Department requests that you visit their website to become familiar with pain relief options for labor and to complete their Health History Form and Insurance Information Form. The web address for the Obstetrical Anesthesia Department at Mercy Hospital is www.obepidural.com. Even if you plan to utilize natural childbirth technique, it is a good idea to familiarize yourself with pain relief options in the event that you require an epidural for a cesarean section.

This is an appropriate time to select a pediatrician for your baby. You will also need to make certain that you have a car seat for your newborn. It is very important to let us know if you are experiencing headaches unrelieved by Tylenol, visual changes, or a sudden increase in swelling of your hands, feet, or face. We are alert to the possibility of pre-eclampsia (also called toxemia or gestational hypertension) and we need your help in notifying us if you experience any of the above symptoms. These symptoms do not mean that you necessarily have pre-eclampsia but we will need to assess your situation if these symptoms occur.

At your **36 week** visit we will perform a cervical exam to determine whether your cervix is dilating or effacing (thinning out) and we will perform a culture for group B beta streptococcus (GBBS). The American Academy of Pediatricians and the American College of Obstetricians and Gynecologists jointly recommend testing all pregnant women for the presence of GBBS near term. Approximately one of every three men and women carry GBBS in their colon and/or vagina and it is not of particular concern except as relates to delivery. Very rarely a woman in labor can transmit GBBS to her baby so if a woman carries GBBS, she will receive antibiotics through her IV during labor to significantly decrease the risk of infection to the baby. Please refer to the section regarding GBBS later in this booklet.

At your **37, 38, 39, and 40 week** visits we will follow the progress of your cervical changes and confirm that the baby is in the head-down (vertex) position. Ninety-seven percent of babies are vertex at term. We will estimate your baby's weight by exam and if necessary by ultrasound examination. We will review the signs of labor with you and will discuss the pros and cons of induction of labor, if appropriate. Again, we are watching for signs and symptoms of pre-eclampsia so please let us know if you have any of the symptoms mentioned in the paragraphs above (32-34 weeks).

LABORATORY TESTING

Initial prenatal lab work includes:

- CBC (complete blood count)
- Blood type and Rh
- HIV test
- Rubella titer (German measles)
- RPR test for syphilis (repeated at 28 weeks) – required by state law
- Urinalysis
- Hepatitis screening (to rule-out chronic hepatitis B)
- Pap smear and culture for chlamydia & gonorrhea performed during exam
- Thyroid function tests
- You will be screened for immunity against cytomegalovirus and parvovirus to confirm that you do not have a recent infection
- If you own a cat you will be screened for immunity against toxoplasmosis
- You will be screened to confirm immunity to chicken pox. 80% of people who did not have an obvious chicken pox infection as a child will actually have immunity because their infection was "subclinical" and provided immunity but did not result in pox marks
- If you are African-American, Asian or Greek, then you will be screened for hemoglobinopathies such as sickle cell trait or thalassemia.

Please Note: Cystic Fibrosis (CF) carrier testing is offered to all patients. You should receive information about CF testing when you are seen for your first OB visit. If you do not have a brochure regarding CF testing, please contact our office. This is not routinely ordered as part of your initial lab work so please let us know if you desire testing.
Please contact your insurance company if you have any questions about benefit coverage for this screening procedure; the CPT code you will need to reference is 81220.

11-13 weeks:

- First trimester screening or Cell-Free DNA screening tests, both optional. First trimester screening is performed at the hospital. Cell-Free DNA testing can be drawn at our office. See pages 10-12.

16 weeks:

- Quad Screen, optional (to rule-out birth defects [but not all] and Down syndrome); see pages 11-12.

20 weeks:

- Ultrasound—a safe test where we can see the baby's structures and the position of the placenta, position of the baby, the cord, the fetal number and sex, as well as many defects. A normal ultrasound does **NOT** rule out the possibility of birth defects but it is certainly reassuring.

24 weeks:

- CBC, one-hour blood glucose (to screen for gestational diabetes)
- RPR test for syphilis
- Rh titer (for Rh negative patients)

28 weeks:

- RhoGAM injection (for Rh negative patients), see page 13.

Optional First Trimester Screening
For Genetic Abnormalities

(Down syndrome, Trisomy 18/13)

We have known for quite some time that levels of certain chemicals in the mother's blood can be tested to predict the chance that her baby has either Down syndrome or Trisomy 18/13. In years past, the only non-invasive screening available to women was the blood test known as the "Quad Screen" or "MS4." This test was and still is available to ALL mothers between 16-20 weeks and is a tube of blood drawn in our office. Limitations of the Quad Screen/MS4 are noted on page 12. If a woman desires screening at an earlier point in pregnancy than the MS4, she has two options. The first test is known as "First Trimester Screen" and the second test option is known as "Cell-Free DNA Testing." First Trimester Screen is available between 11-13 weeks at the hospital and provides parents with a calculation of Down syndrome and Trisomy 18/13 risk for their baby. If a woman desires the First Trimester Screen then our office assists her with the scheduling of the test.

The other early screening option is the Cell-Free DNA test and it is drawn around 12 weeks gestation in the office. Neither of the early tests screen your baby for open neural tube defects (a type of spina bifida) so we recommend that women consider having an "MS1"/AFP test drawn in the office at 16 weeks gestation. The MS1 is a simple blood test that screens for certain spinal defects of the baby.

Down syndrome (Trisomy 21) is a genetic condition wherein a baby has one extra copy of chromosome number 21. A baby with Down syndrome has mental retardation and physical birth defects, such as heart defects. Children and adults with Down syndrome are capable of many things but also have special needs. Approximately 1 in 800 babies is born with Down syndrome. A woman over 35 or a woman with a family history of Down syndrome has an increased chance of delivering a baby with Trisomy 21.

Trisomy 18 is another genetic condition. Trisomy 18 babies carry one extra copy of chromosome number 18 and sadly most of these babies will die within the first year of life. The risk for having a baby with Trisomy 18 increases with age and the overall risk is approximately 1 in 8,000 births.

First trimester screening is performed at either Mercy Hospital or Missouri Baptist Medical Center between the beginning of the 11th week and the end of the 13th week of pregnancy. An ultrasound is used to measure the thickness of the tissue on the back of the baby's neck, also referred to as "nuchal translucency." A baby with genetic disorders will often have an increased amount of fluid at the back of the neck. In addition to the nuchal translucency measurement, a small amount of blood is taken from the mother for analysis of chemical levels. The chemical level results are combined with the mother's age and the nuchal translucency measurement to calculate the chance for the baby to have either Down syndrome or Trisomy 18. The results are usually available in one week.

If the results of first trimester screening suggest an increased chance for the baby to have Down syndrome or Trisomy 18 then you will be offered additional testing to evaluate the baby's chromosomes. It is important to note that a result with an increased chance of genetic abnormality does NOT mean that the baby has either Down syndrome or Trisomy 18. Only chromosome testing (such as chorionic villus sampling or amniocentesis) can confirm whether a baby has one of these genetic conditions. <u>The decision to test the baby's chromosomes will be yours.</u>

The first trimester screening tests are believed to detect 90% of pregnancies with Down syndrome and 97% of pregnancies with Trisomy 18. Many insurance companies are covering the ultrasound and blood test for this screening. Since each patient has a different policy, it is important for you to check with your insurance company regarding coverage.

It is important to note that first trimester screening does NOT screen for the presence of open neural tube defects (spina bifida is an example). The chemical level that is tested for neural tube defects is alpha fetoprotein (AFP) and it can be measured between 15-20 weeks. This testing is optional and should be requested by you around 14 weeks gestation so that our office may provide you with a lab requisition to take to the lab for your blood draw.

HOW DO I ARRANGE FIRST TRIMESTER SCREENING?

Our office will contact the hospital of your choice (Mercy Hospital or Missouri Baptist Medical Center) at around 10 weeks gestation to arrange your appointment for 11-13 weeks gestation. If you will be in our office for a prenatal appointment anywhere between 8-10 weeks then you may inform the doctor or nurse practitioner that you desire "First Trimester Screening" and our office staff will contact the hospital to make the initial arrangements. We should either provide you with an appointment date/time or provide you with the contact information for the facility within two business days. If you do not receive your appointment information, please contact us. It is ultimately your responsibility to make certain that you have an appointment if you desire one!

CELL-FREE FETAL DNA

This is the newest noninvasive testing option available for women. The increased risk factors include one or more of the following: maternal age 35 or older, personal or family history of chromosomal abnormalities, or fetal ultrasound abnormality. The test name varies depending upon the laboratory but examples include Harmony, MaterniT21-Plus, or Panorama. Cell-Free DNA testing involves taking a blood sample from you as early as 12 weeks gestation. Your blood contains your DNA as well as DNA from your developing baby; the DNA from the baby is released from the placenta into your bloodstream. The test evaluates the amount of genetic material from chromosomes 13, 18 and 21. The companies that perform the testing state that the detection rate for Down syndrome and Trisomy 18 is 99% and for Trisomy 13 is 92%. This is considered a screening test, thus if the test indicates that the baby has Down syndrome, Trisomy 13 or Trisomy 18, amniocentesis is recommended to confirm the results but the decision is yours. This test result will also include the gender of your baby if you wish to know this information. If you opt for this test it will be drawn in our office around 12 weeks and we will have results 10 business days after it is drawn.

Please contact your insurance company if you have any questions about benefit coverage for this screening procedure; the CPT code you will need to reference is 81599.

QUAD SCREEN/MS4

Prenatal screening for neural tube defects or genetic abnormalities is available to all mothers. A simple blood test can help identify the small number of women whose babies are at greater risk for certain birth defects. Specifically, the "Quad Screen" tests primarily for open neural tube defects, Down syndrome, and Trisomy 18. Test results can indicate which babies may be at increased risk for these birth defects and further testing would be required if a test result is positive. It is also important to know that a negative result does not guarantee that a baby is free of genetic abnormalities. "Quad Screen" is the name of the optional laboratory test that can be performed between 16 and 20 weeks. It is available to all pregnant women and it is a personal decision that you and your partner must make. You should receive an informational brochure from us early in pregnancy regarding this prenatal test. We need to know between **16-20 weeks** if you desire testing so that we may provide you with a laboratory requisition.

A neural tube defect is a birth defect that affects the spinal column or brain of the baby. Spina bifida and anencephaly are the primary forms of neural tube defects. While spina bifida can range from mild to severe defects in the spinal column, anencephaly is so significant that babies often die shortly after birth. The risk of having a baby with any type of neural tube defect is approximately 2 per 1,000 babies. The risk may be higher if there is a family history of neural tube defects.

Down syndrome (Trisomy 21) is a genetic condition wherein a baby has one extra copy of chromosome number 21. A baby with Down syndrome has mental retardation, poor muscle tone, and a higher rate of heart abnormalities. Approximately 1 in 800 babies is born with Down syndrome. A woman over age 35 has a higher risk of having a baby with Down syndrome but statistically most Down syndrome babies are born to women under age 35 because the majority of women who are pregnant are under 35 years old.

Trisomy 18 is another genetic condition that is screened when a woman has the Maternal Serum Screen 4. Trisomy 18 babies carry one extra copy of chromosome number 18. The risk for having a Trisomy 18 baby increases with age. While many pregnancies affected by Trisomy 18 end in miscarriage, those that continue result in delivery of babies that may have severe mental retardation. Sadly, 90% of babies with Trisomy 18 will die within the first year of life. The risk of Trisomy 18 is 1 out of 8,000 births.

Please contact your insurance company if you have any questions about benefit coverage for this screening procedure; the CPT codes you will need to reference are 82105, 82677, 84702 and 86336.

HOW ACCURATE IS THE QUAD SCREEN?

The screening test will detect around 75% of unborn babies with Down syndrome and slightly fewer babies with Trisomy 18 and neural tube defects. If the test result is negative it does NOT rule out the possibility of birth defects. Approximately 1 out of 20 tests will return falsely abnormal. If your test result is abnormal we will first confirm that your gestational age dating is correct. The next step will be to refer you to a perinatal center (high risk obstetrical evaluation) for additional counseling and possible testing. Testing includes a detailed ultrasound and if the ultrasound is entirely reassuring then additional testing will not likely be required. If more testing is needed then testing of the amniotic fluid will be suggested. The amniotic fluid is the fluid that surrounds the baby in the amniotic sac. An amniocentesis is a procedure that involves inserting a needle into your abdomen to withdraw some amniotic fluid from the uterus. Levels of a chemical called AFP are evaluated for open neural tube defects and a chromosome analysis is performed to exclude Down syndrome, Trisomy 18, and many other genetic abnormalities. Risks and benefits of amniocentesis would be discussed with you by the specialists at the high-risk center prior to the procedure so that you and your partner can make an informed decision regarding the test.

RHOGAM

(If you are Rh-negative blood type)

The term "Rh" describes a factor that is found on your red blood cells. This factor is also called the "D antigen." People with the D antigen are called Rh-positive (blood types A positive, B positive, AB positive, and O positive). People who do not carry the D antigen are called Rh-negative (blood types A negative, B negative, AB negative, and O negative). People inherit their Rh status from their parents. They receive one gene from each parent. If a person inherits even one Rh gene/D antigen then they are called Rh-positive. This means that a person who inherits one positive Rh gene from one parent and one negative Rh gene (the gene does not carry the D antigen) from the other parent will be called "Rh-positive." If a person inherits two positive genes they are also "Rh-positive." If a person carries two Rh-negative genes (inherited negative gene from both parents) then they are called "Rh-negative" and do not carry any D antigen. Rh-negative blood type is not common. Fifteen percent of Caucasians are Rh-negative and 8% of African Americans are Rh-negative. Only 8% of Hispanics are Rh-negative and 1% of Asians are Rh-negative.

We will test your blood type early in pregnancy and if you are Rh-negative then you will need to read further so that you are aware of the importance of Rh status during pregnancy! The body's immune system is always on the watch for foreign cells/antigens. If the body detects the presence of foreign antigens (like the D antigen of Rh-positive red blood cells) then it will produce immune cells called antibodies. The job of an antibody is to remove or attack a particular type of protein. During pregnancy and delivery a small number of the baby's red blood cells do enter the mother's blood stream. If a mother is Rh-negative and the baby's blood is Rh-positive then the mother's immune system will make a small number of antibodies against those Rh-positive cells and destroy them. The problem occurs when the baby's blood enters the mother's blood the next time, either later in the current pregnancy or with a subsequent pregnancy. When the mother's immune system recognizes that Rh-positive cells have returned, it will mount a tremendous number of immune cells/antibodies because it remembers these foreign cells and it is easier to make antibodies this time! The antibodies are capable of crossing the placenta and entering the baby's bloodstream where all of the red blood cells are Rh-positive. The antibodies will destroy the baby's red blood cells and the baby (while still in the womb) can become profoundly anemic and very sick. Before the development of a medication called RhoGAM, babies often died from "Rh incompatibility" between mother and fetus.

RhoGAM is given to pregnant women who are Rh-negative whenever it is felt that they may have been exposed to their baby's blood. This is most likely to occur during the last three months of pregnancy and at delivery. The mother may also be exposed to baby's red blood cells following any significant abdominal trauma or procedures such as amniocentesis or chorionic villus sampling. RhoGAM will be given to Rh-negative mothers around 28 weeks of pregnancy and then again after delivery if testing reveals that your newborn is Rh-positive. The only way to know a baby's blood type while it is in a mother's uterus is through invasive testing. It is safer to assume that a baby is Rh-positive and administer the RhoGAM at 28 weeks than to withhold RhoGAM. If the baby is found to be Rh-negative after delivery then no additional doses will be required and there is no harm from having received RhoGAM during pregnancy. A woman should also receive RhoGAM after a miscarriage if she is Rh-negative or if she experiences vaginal bleeding during pregnancy. Millions of doses of RhoGAM have been given to women since its introduction in 1968 and there have been no documented cases of disease transmission due to RhoGAM. RhoGAM is made by harvesting antibodies from the plasma of a select group of donors. The filtration process is rigorous and provides a safe method to prevent Rh incompatibility.

HOW DOES RHOGAM WORK?

RhoGAM contains a very small number of antibodies against the D antigen (the very same antibodies that we are trying to prevent your body from making) and these antibodies will destroy the small number of baby's red blood cells that are in the mother's bloodstream. The antibodies of RhoGAM do their job of destroying any Rh-positive blood cells before the mother's immune system has a chance to realize that any foreign cells are present! The number of antibodies present in RhoGAM is not enough to cause any harm to the fetus.

ULTRASOUND

We use ultrasound to determine many things about your baby. Depending upon your gestational age, we are able to document your due date, check the position of the baby, check the amount of amniotic fluid surrounding the baby, and estimate the size of the baby. At the time of your "20 week ultrasound" we are evaluating the baby's general well-being. During your mid-pregnancy ultrasound exam, which is performed around 19-21 weeks, we are evaluating your baby's brain structures, heart, stomach, bladder, kidneys, liver, bones, spine, umbilical cord, and placenta. **A normal ultrasound does NOT rule out the possibility of birth defects.** There are many anomalies that are difficult or impossible to see on ultrasound and factors such as the positioning of the baby or the mother's body build can impact our ability to detect abnormalities. Your physician reviews your ultrasound photos after your appointment. If we have any concerns about the ultrasound findings then we will recommend additional testing or consultations and we will inform you regarding our concerns.

Aside from detecting structural abnormalities, ultrasounds are utilized to follow the baby's growth. We anticipate a certain amount of growth between ultrasounds based upon the initial measurements that were taken. If you have certain medical conditions such as hypertension or hypo/hyperthyroidism then we will sometimes advise ultrasound measurements of the baby in the late second or early third trimester. Certain medical problems can affect the performance of the placenta and thereby affect baby's growth. Women with preterm labor will sometimes be advised to undergo ultrasound for evaluation of the baby. In addition, if we are concerned that your baby is either "large for gestational age" or "small for gestational age" then we will advise an ultrasound for evaluation.

Most insurance companies will cover one ultrasound examination during your entire pregnancy. Some insurance companies will agree to cover additional ultrasounds if there is "medical necessity." Please be advised that our primary focus is to keep you healthy during pregnancy and to help you deliver a healthy baby. We will order ultrasound evaluations if we feel that there is a need and we will be happy to help you with letters to your insurance company if you have difficulty with coverage. If you ask us to provide you with a letter for your insurance company we will include the pertinent information about your situation that led us to recommend an ultrasound. Some insurance companies will still deny coverage and the fees become the patient's responsibility.

Ultrasound is very safe for the baby and it is a nice bonding experience. If you want to know the gender of your baby then we will make every effort to view the baby's genitals and give you the best guess that we can—very rarely we <u>are</u> wrong so please recognize that it is our best guess!

Our practice has received accreditation from the American Institute of Ultrasound in Medicine, an association dedicated to promoting the safe and effective use of ultrasound. Accreditation means our practice has met nationally accepted standards and has demonstrated consistent excellence and a commitment to the highest quality patient care when providing diagnostic ultrasound services. AIUM accreditation is a voluntary process that requires a rigorous and detailed application process. Our practice must apply for re-accreditation every three years, once again documenting that the level of care we provide continues to meet the AIUM's strict standards. Effectively and safely meeting the growing needs of our patients is our number one priority.

GENETIC TESTING

There are many reasons to receive genetic testing during pregnancy. Most people receive it because they are older and at higher risk of having a genetically abnormal baby. If you have any of the risk factors below you may want to get genetic testing of your baby during the first or early second trimester:

- Age 35 or older at the time of delivery
- Family history of Down syndrome or other genetic disorders
- Family history of mental retardation
- Family history of muscular dystrophy, cystic fibrosis, blood disease, Tay-Sachs disease
- More than three miscarriages
- Family history of metabolic disorders
- Abnormal Quad Screen or ultrasound tests
- History of neural tube defects (spina bifida)
- Ashkenazi Jewish heritage in both parents

If you answer "yes" to any of these risk factors, please make an appointment at Mercy Hospital or Missouri Baptist Medical Center for genetic counseling. A genetic counselor meets with you and your partner to review your family histories and provides you with helpful information regarding your risk for having a baby with a genetic abnormality (such as Down syndrome). After meeting with the geneticist you decide whether you want to proceed with genetic testing. A genetic counseling appointment provides you with the necessary information to make an informed decision regarding testing and it does NOT obligate you to have a procedure performed. There are two procedures that can be used to diagnose genetic abnormalities: Amniocentesis is offered between **15-20 weeks** and Chorionic Villus Sampling is performed between **10-12 weeks** of gestation.

Amniocentesis is performed under ultrasound guidance and involves inserting a needle through the abdominal wall into the amniotic sac (bag of water) within the uterus. A small amount of fluid, which contains skin cells sloughed by the baby, is withdrawn and submitted to the lab for genetic evaluation of the baby's cells.

Chorionic Villus Sampling is performed under ultrasound guidance. A very small catheter is introduced through the cervix to allow the removal of small segments of placental tissue that are analyzed for evidence of genetic abnormalities. **You should only consider CVS if you are at least 35 years old at the time of the baby's due date and you have no other family history of genetic abnormalities.** Otherwise, you will potentially be a candidate for amniocentesis.

You will receive counseling regarding the procedure at the time of your appointment and you are NOT obligated to undergo the procedure. If you do not desire CVS, then you will have genetic counseling at either Mercy Hospital or Missouri Baptist Medical Center. If you have any family or personal history of genetic abnormalities and you plan to have your appointment at Missouri Baptist then you will need to ask our office to contact them with your information (please speak to one of our nurses). If you are undergoing counseling only related to your age then you can schedule your own appointment. Please call for your appointment **after your 12th week.**

MERCY HOSPITAL	**314-251-6884**
MISSOURI BAPTIST MEDICAL CENTER	**314-996-6000, option 7**

NUTRITION WHILE YOU ARE PREGNANT

If there ever was a time in your life to eat in a healthy manner, it is now! Your baby is totally dependent on what you eat for the formation of his/her body and mind. Even though you may eat one or two times a day, the baby is growing all the time and needs nutrition throughout the day and night. We recommend that you eat three meals and three snacks a day. The calories should include about 300 "extra" calories a day above what your usual diet contains.

If you are under your ideal weight you may need more than 300 extra calories, and if you are over your ideal weight for your height, you may not need any extra calories. Likewise, if you are under your ideal weight, or are a teenager and growing, you may need to gain more than 30 pounds. If you are above, it is conceivable that you will not gain any weight at all and have a perfectly normal pregnancy.

The rule is that your goal weight when the pregnancy is term should be 30 pounds plus your *ideal* weight.

- Cholesterol is your friend in pregnancy—the baby's brain is 80% cholesterol, so enjoy!
- Avoid all fast food—fat and salt will just make you feel bad and cause you to swell (this includes pizza, Kentucky Fried Chicken, Chinese, and "fast food" hamburgers).
- If you do not eat meat, you need protein in the form of beans, nuts, cheeses, and soy.
- Snacks ideally should be fruits, nuts, vegetables, crackers, and cheese.
- If you feel dizzy, you are dehydrated or experiencing low blood sugar in most cases so drink some water or juice and eat a snack to feel better.
- Water is very important! Drink 8-12 glasses of water a day. Milk (a food) is no substitute for water.
- If you are not a milk drinker, add 1,200 mg. of calcium a day to your diet. Tums (500 mg.) is chewable and inexpensive. Os-Cal and Caltrate are also good supplements. If you drink milk you should calculate your intake—each 8 ounce serving contains 300 mg. calcium, whether whole or skim milk—and take supplements if needed to reach the 1,200 mg. per day recommended intake. Your prenatal vitamin does not contain a significant amount of calcium. **Do not take your calcium at the same time as you prenatal vitamin because calcium will interfere with the absorption of iron in your prenatal vitamin.**
- Reduce caffeine intake to between 0 to 2 servings per day and avoid saccharine.
- NutraSweet is okay.
- Take your prenatal vitamins with DHA daily and if they make you nauseated, we will suggest chewable prenatal vitamins for you.

When you deliver, your 30 pound weight gain will be distributed as follows:

Baby	7-8 lb.
Placenta	1-2 lb.
Increased blood and fluid	8-9 lb.
Increased weight of uterus	2 lb.
Breast swelling	4-5 lb.
Maternal fat storage	4+ lb.
	26-30 lb.

NUTRITION DURING PREGNANCY

DAILY FOOD PLAN				
Breakfast	**Noon Meal**	**Snack**	**Evening Meal**	**Snack**
Fruit or juice	Meat or alternative	Fruit or	Meat or alternative	Fruit or
Starchy food	Starchy food	Starchy food	Starchy food	Starchy food
Fat	Vegetable and fat	Low fat milk	Vegetable and fat	Low fat milk
Low fat milk	Fruit		Fruit or simple dessert	
			Low fat milk	
SAMPLE MEALS				
Half grapefruit	Lean beef sandwich	Wheat crackers	Grilled chicken	Banana
Bran Flakes	Lettuce/Tomato	Cheese	Baked potato	Low fat milk
Toast	Mayo or mustard		Broccoli w/margarine	
w/margarine & jelly	Apple		Ice milk	
Low fat milk			Low fat milk	
Orange juice	Tuna or	Berries	Pasta w/meat sauce	Pear
Bagel w/cream	Cottage cheese	w/yogurt	Italian bread	Low fat milk
Cereal	Raw veggies		Salad w/dressing	
Low fat milk	Pear		Melon	
			Low fat milk	

FOOD GROUPS	DAILY FOOD CHOICES
Meat & Alternatives	
2 servings per day	2-3 oz. poultry, fish, lean meat (trimmed of visible fat) 1 cup cooked dried beans or peas ½ - ¾ cup cottage cheese 2 tbsp. peanut butter
Milk Products	
4 servings per day 5 for pregnant teens	1 cup low fat (2%, 1%, ½%, skim, buttermilk) 1 cup low fat yogurt 1 ½ oz. cheese 1 ½ cups ice milk
Starchy Foods	
4-6 servings per day	1 slice whole wheat, rye, or white bread ½ sandwich bun, bagel, English muffin ½ cup potatoes, corn, peas ½ cup cooked grains, rice, pasta, cereal ½ - 1 cup ready-to-eat cereal 4-6 crackers 3 cups plain popcorn
Fruits & Vegetables 4-6 servings per day	**Vitamin C sources** (have at least one daily): Fruits—cantaloupe, grapefruit (juice), strawberries, orange (juice) (1 serving = ½ cup fruit Vegetables—broccoli, Brussels sprouts, cabbage, cauliflower, sweet pepper, tomato juice 1 cup raw or cooked vegetables **Vitamin A sources** (have at least four weekly): 1 medium piece of fruit Fruits: apricots, cantaloupe Vegetables: asparagus, broccoli, Brussels sprouts, carrots, dark leafy greens, sweet potatoes, pumpkin, sweet potatoes, winter squash Use other fruits and vegetables to meet daily requirements
Fats & Oils 3-4 servings per day	1 tsp. margarine, oil, mayonnaise, butter 1 tbsp. salad dressing, cream cheese, gravy
Other Foods	Desserts, sweetened beverages and fatty snack foods such as chips contain calories but few nutrients. Use sparingly.

PRENATAL VITAMIN SUPPLEMENTS

Approximately 90% of pregnant women in the U.S. use prenatal vitamin supplements. Only a small proportion of U.S. women consume a perfectly balanced diet! While most pregnant women meet the recommended daily allowances (RDAs) for vitamins A, B_1, B_2, B_{12}, and C, they are less likely to meet the RDAs for iron, calcium, zinc, folate, vitamins B_6, D, and E. Over-the-counter prenatal vitamins with DHA have the recommended supplements needed for a health pregnancy. If you have been taking additional vitamin supplements before pregnancy please discuss them with your physician or nurse practitioner. If you are taking vitamin A supplements, please discontinue their use! Excessive amounts of vitamin A can cause birth defects.

SHOULD I EAT FISH?

The FDA (Food and Drug Administration) and the EPA (Environmental Protection Agency) have issued recommendations that women who are pregnant should **avoid shark, swordfish, king mackerel, and tilefish entirely**. These recommendations are endorsed by the American College of Obstetricians and Gynecologists. The risk is related to mercury exposure and there is controversy as to what level of mercury is acceptable to a developing fetus and young child. Mercury is released into the atmosphere by the earth's crust as it degasses and also through industrial waste. Some of that mercury is soluble in water. Bacteria convert this mercury into methylmercury and then fish take up this organic form of mercury either by direct absorption across their gills or by consuming other fish that have high levels of methylmercury. When a person consumes methylmercury, it is stored in fat cells and it takes 250 days to clear 97% of a given exposure. High levels of methylmercury affect the central nervous system of adults and also of developing babies.

The fish listed above all contain over 1 part per million (ppm) of methylmercury per gram of fish. By contrast, most commercially available fish like salmon and shrimp contain between 0.05 and 0.1 ppm. Canned tuna contains only 0.2 ppm. Large tuna used to prepare sushi and tuna steaks can have levels above 1 ppm so while it is not part of the formal recommendation from the EPA and FDA, **we recommend that you avoid sushi and tuna steaks during pregnancy**. Seafood is an excellent source of protein and healthy fats and should be consumed during pregnancy within the FDA and EPA guidelines that follow:

- Limit consumption of freshwater fish caught by friends or family to 6 ounces of cooked fish per week.
- Limit yourself to an average of 12 ounces of cooked fish purchased in stores and restaurants per week (includes canned tuna).
- Avoid shark, swordfish, king mackerel, and tilefish entirely. Our physicians also advise avoiding sushi and tuna steaks during pregnancy.

For more information: www.epa.gov/mercury/index.html

FOOD POISONING (including Listeriosis)

In the United States alone, there are greater than 75 million cases of food-borne illness per year. There are 5,000 deaths per year in the U.S. related to food-borne illness. Salmonella is the leading cause of food poisoning in the U.S., resulting in 1.4 million cases per year. A lesser known organism called listeria monocytogenes is responsible for approximately 2,500 illnesses per year in the U.S. for an overall low risk of 0.3 per 100,000 persons. The problem with the bacterium listeria monocytogenes is that if a pregnant woman is ill from listeria, it is likely that it will infect the placenta and then cross the placenta to infect her fetus. Listeria's primary habitat is soil and decaying vegetable matter.

Infection in adults results from oral ingestion followed by penetration of the organism through the intestinal walls into the bloodstream. Diarrhea and fever usually result. Once in the bloodstream, listeria has a predilection for the central nervous system and for the placenta if a pregnancy is present. Patients often develop meningitis and sepsis, which is infection in the bloodstream. The only way to diagnose a listeria infection is to culture the organism from cerebrospinal fluid collected from a spinal tap OR to culture the organism from the affected person's blood. **Pregnant women, especially those in the third trimester, are particularly susceptible to listeria and account for one-third of reported cases.**

Listeria is a common low-level contaminant of both processed and unprocessed foods of plant and animal origin. It is almost everywhere in our environment. Hot cooked foods are **not** a vehicle for listeria transmission. The listeria organism can survive and multiply at refrigerator temperatures.

In the U.S. there was a multistate outbreak that occurred between May and December, 2000; 30 patients in 11 states developed listeriosis. The source was traced to deli turkey meat from a single processing plant. Of 30 patients there were 4 deaths and 3 miscarriages. A subsequent multistate outbreak from deli turkey meat occurred from July through October, 2002. There were 54 infected patients of whom 8 died and there were 3 fetal deaths. Two meat processing plants were implicated and this outbreak led to policy changes designed to prevent future listeria monocytogenes contamination of ready-to-eat meat and poultry products. There was a small outbreak associated with pasteurized milk from a local dairy in Massachusetts in 2007 involving 5 people, 3 of whom died.

The following recommendations apply to all persons:

- Do not consume unpasteurized milk.
- Wash raw vegetables well before eating.
- Keep refrigerator temperature at 40º F or lower and freezer at 0º F or lower.
- Use precooked/ready to eat food as soon as possible.
- Keep raw meat, fish and poultry separate from other food until after cooked.
- Wash hands, knives, cutting boards after handling uncooked food.
- Cook to safe internal temperatures (ground beef 160º, chicken 170º, turkey 180º, pork 160º).

Additional recommendations for pregnant women:

- Do not eat hot dogs, lunch/deli meats, or bologna unless reheated to steaming hot.
- Avoid getting fluids from hot dog packages on other foods or surfaces.
- Wash hands after handling hot dogs, lunch/deli meats, raw meat, chicken, turkey, seafood or their juices.
- Do not eat salads made in stores such as ham salad, chicken salad, egg salad, tuna salad or seafood salad.
  Do not eat Caesar salads or Caesar salad dressings as they usually contain raw eggs.
- Do not eat soft cheeses such as feta, Brie and Camembert, blue-veined cheeses, or Mexican-style cheeses such as queso blanco, queso fresco, and Panela unless they have labels that clearly state they are made from pasteurized milk.
- Do not eat refrigerated pates or meat spreads. Canned products or shelf-stable products may be eaten.
- Do not eat refrigerated smoked seafood, unless contained in a cooked dish such as a casserole. Refrigerated smoked seafood such as salmon, trout, white fish, cod, and tuna are often labeled as nova-style, lox, kippered, smoked, or jerky. Canned or shelf-stable smoked seafood may be eaten.

For additional information please visit the CDC website at www.cdc.gov to search their database of articles on listeriosis.

PLAN TO ATTEND MATERNITY CLASSES

Maternity classes are offered by each hospital and are meant to prepare you and your partner for childbirth. There are many class options available including sibling classes and CPR for parents (and grandparents/family members). Information regarding prenatal exercise class and tours of Labor and Delivery are also available through these sources. Preregistration is available at both hospitals and will expedite your registration process when you go to the hospital.

Mercy Hospital offers online registration for maternity classes at:
http://www.mercy.net/maternity-classes-in-st-louis
or by calling 314-961-2229.

If you plan to deliver at Mercy Hospital then the Anesthesia Department requests that you visit their website to become familiar with pain relief options for labor and to complete their Health History Form and Insurance Information Form. The web address for the Obstetrical Anesthesia Department at Mercy Hospital is www.obepidural.com.

Missouri Baptist Medical Center offers online registration for maternity classes at:
https://www.mobapbaby.org/MyGuidetoClasses/ChildbirthPreparationClasses.aspx
or by calling 314-996-5433.

IMPORTANT NOTICE

To Any Patient With a History of MRSA

The prevalence of MRSA infection and colonization in young, healthy people is rising. It is critical that you advise your doctor or the nurse practitioner if you have had an MRSA infection in the past or if you know that you are colonized with MRSA.

- Epidurals will not be performed in patients with active MRSA infection.

- Patients who are carriers of MRSA need to be decolonized prior to epidural administration. This is done by applying Muciporin ointment to the nares twice daily and showering with Hibiclens daily for 7-10 days. Cultures are repeated 48 hours after completion of this protocol.

- Patients who have had an MRSA infection in the last year need to have a negative nasal swab and site culture (previous infection site) prior to epidural placement. We will typically obtain these cultures on two occasions at least six weeks apart if time permits during pregnancy.

TO DO LIST

1st TRIMESTER

- Schedule a dental exam and cleaning if it has been more than six months since your last exam.
- Evaluate your diet, including your water intake, and make appropriate adjustments now.
- Continue to exercise.
- Take you prenatal vitamins with DHA.
- If you are pregnant during flu season (October to April), get your flu shot! The CDC revised their recommendations in June 2004 to include **all** pregnant women, regardless of gestational age.
- If you are a candidate for genetic counseling, please make arrangements for the appointment.
- If you desire First Trimester Screening for Down syndrome and Trisomy 18 or Cell-Free Fetal DNA Screening, contact our office (see pages 10-12).

2nd TRIMESTER

- Stop any exercises that are performed flat on your back.
- Obtain your list of prenatal appointments from our office.
- Register for prenatal/childbirth and infant CPR classes.
- Begin daily fetal movement counts at 28 weeks.

3rd TRIMESTER

- Select your child's pediatrician.
- Pre-register at the hospital where you plan to deliver your baby.
- Determine your baby's health insurance coverage.
- Purchase a car seat for your baby.
- If you plan to donate or bank your baby's cord blood, make arrangements now (see information under Cord Blood Donation).
- Pack your bags!
- Have your Tdap vaccine (tetanus/diphtheria/pertussis) between 28-35 weeks (during every pregnancy).

OVER-THE-COUNTER DRUGS AND PRESCRIPTIONS

Safe medications include:
Tylenol and Tylenol Extra-Strength
Tums, Maalox, Gaviscon, Mylanta, Milk of Magnesia
Metamucil, Colace, PeriColace, Miralax
Robitussin-DM, -AC (do not use during 1st trimester)
Sudafed, Actifed, Benadryl, nasal sprays like Afrin (short-term use only)
Benadryl plus Unisom for nausea
Tigan, Compazine, Zofran, Kaopectate, Imodium
Ampicillin, Macrodantin, Macrobid, Keflex, Augmentin
Amoxicillin, Duricef
Baby aspirin (if instructed by us to take one daily)
Magnesium Gluconate
Prozac, Zoloft, Celexa, Wellbutrin
Procardia, Terbutaline
Asthma medications—inhalers and/or pills
Progesterone (Prometrium)—if instructed by us to take during first trimester
B12, B6, other vitamins—No Vitamin A
Some steroids
Cough drops for sore throats
Zantac, Pepcid, Carafate, Prevacid, Nexium
Aldomet

NON-Safe Medications:
Tetracycline, Vibramycin
Combination cold medications not listed above
Aspirin (unless we advise you to take a baby aspirin daily)
Ibuprofen/Motrin/Advil/Aleve
Dilantin
Cancer medications
Hormones: Estrogen and Provera
Accutane
Retin-A
Diuretics such as Lasix and HCTZ
Some blood pressure medications such as Captopril
Pepto-Bismol

Please inform your physician or nurse practitioner of any prescription medications or over-the-counter supplements that you are taking or that you took during early pregnancy!

WORKING WHILE PREGNANT

For women with healthy uncomplicated singleton pregnancies, there is no need for a mandatory restriction to working hours, shift working, lifting, standing, or physical work during pregnancy. Women with complicated pregnancies will receive individualized advice from their physician. Please speak with us if you have concerns regarding your work environment. Most employers are very accommodating if you are having problems. Depending upon your job and your pregnancy, you may need to cut back on hours, give up certain tasks, transfer to another position, or stop working until after delivery.

Pregnancy itself is **NOT** a disability. You must have a complication of your pregnancy to be considered disabled. We do not sign disability forms unless we have diagnosed you with a specific condition. Furthermore, if we request that you stop working during your pregnancy, it is not our decision as to whether your employer will pay you under their disability policy (if they offer a policy). Most claims are reviewed by the underwriters of the policy, not necessarily your employer, to determine if benefits will be paid.

Regarding lifting, in 2013 the National Institute for Occupational Safety and Health (NIOSH) published clinical guidelines for occupational lifting in uncomplicated pregnancies. The recommended weight limits are based on gestational age, intermittent versus repetitive lifting, time (hours/day) spent lifting, and lifting height from floor and distance in front of body. In this guideline, the maximum permissible weight for a woman less than 20 weeks of gestation performing infrequent lifting is 36 pounds and the maximum permissible weight at ≥20 weeks is 26 pounds. For repetitive lifting ≥1 hour/day, the maximum weights in the first and second half of pregnancy are 18 pounds and 13 pounds, respectively, and for repetitive lifting <1 hour/day, the maximum weights are 30 pounds and 22 pounds, respectively. Although not based on high quality evidence, these guidelines are a reasonable reference. Please reference the NIOSH guideline diagram following this text.

If an employer provides alternative work for nonpregnant employees who are unable to perform their usual lifting duties or heavy physical labor because of back issues, the employer must make similar arrangements for a pregnant employee.

In the United States, federal law prohibits discrimination due to pregnancy under the Pregnancy Discrimination Act (PDA). The PDA is an amendment to the Title VII of the Civil Rights Act of 1964. The PDA protects the pregnant woman from hiring and firing discrimination, peer and employer misjudgments when suffering pregnancy-related conditions, insurance payment unfairness, and fringe benefit discrimination. The PDA also requires employers offering medical disability benefits to treat pregnancy-related disabilities just like all other temporary disabilities under any health, disability, insurance or sick leave plan. Pregnant workers must be provided the same insurance benefits, sick leave, seniority credits, and reinstatement privileges awarded workers disabled by other causes.

If an employer requires employees to obtain a physician's note when taking sick leaves and collecting benefits, the same rule can be applied to pregnant employees.

The Family and Medical Leave Act (FMLA) of 1993 mandates 12 weeks of job-protected leave for childbearing or family care in a 12-month period for eligible employees. Eligibility criteria include working at least 12 months for the current employer and for at least 1250 hours over the previous 12 months (just over 24 hours per week) in a facility that has at least 50 employees. Paid leave is not mandated and is at the discretion of the employer. If the employee takes time off before delivery because of pregnancy discomfort, disability, or another reason, the employer may count it as part of the 12-week leave entitlement.

It is your responsibility to determine your employer's policy regarding benefits granted during maternity leave. Please determine the expectations about your return to the workplace. Some, but not all, disability policies will cover 8 weeks of benefits for women that have cesarean section as opposed to the traditional 6 weeks of coverage for vaginal delivery. Women who have concerns about unfair treatment during pregnancy should consider seeking legal services.

Work Tips:

- Wear low-heeled shoes with arch support.
- Bend at your knees, not your waist, to pick up items.
- If standing for long periods, rest one foot on a box or stool.
- Support your lower back with a small pillow when seated.
- Sit or stand tall and straight to minimize shortness of breath.
- Wear maternity support hose—they really do feel good!
- Have a light snack available and drink lots of water.

Ask the patient the following questions:

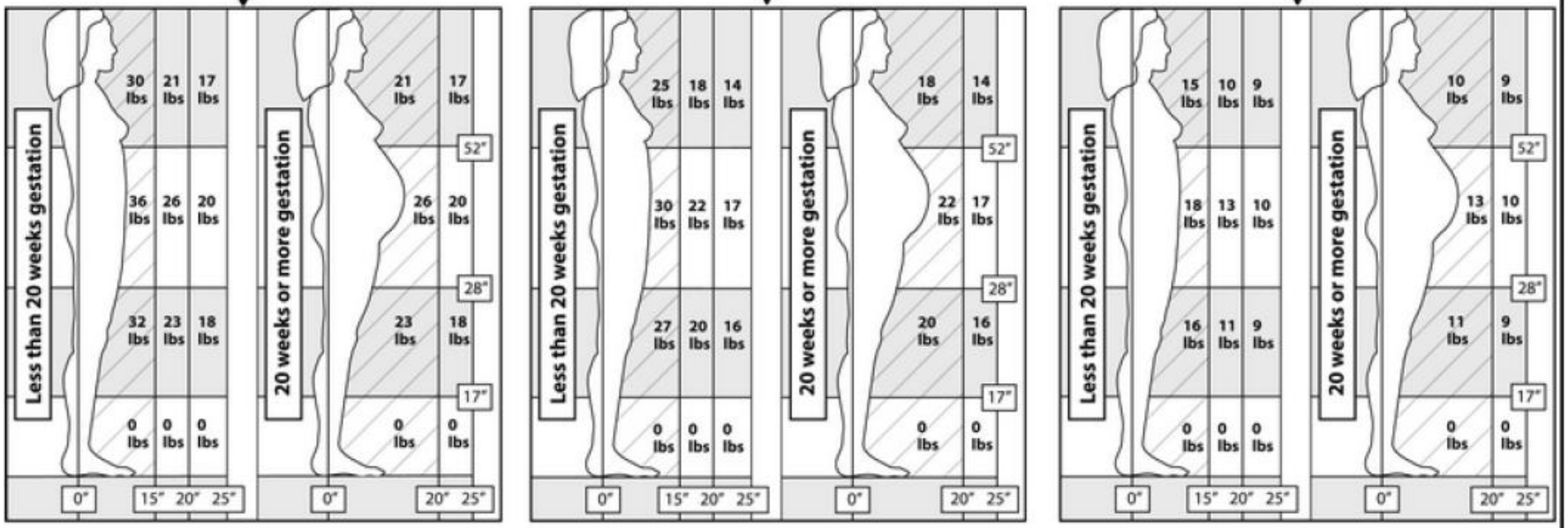
At work do you perform lifting tasks more than once every 5 minutes?

Yes → Do you lift more than 3 times per minute?

Yes → Highly repetitive lifting is beyond the scope of these guidelines (see text).

No → How many hours per day you spend lifting at work?

No → Less than 1 continuous hour[1] / 1 or more hours per day



A. Infrequent lifting | B. Repetitive short duration lifting | C. Repetitive long duration lifting

Instructions for using graphic A, B, or C:

1) Select the left figure if gestation < 20 weeks; select the right figure if gestation ≥ 20 weeks.
2) Ask the patient to demonstrate the lifting motions to determine the lifting height from the floor and the distance in front of the body.
3) Select the numerical weight limit values along the entire path the object would travel. If the object crosses more than one weight limit category, select the lowest weight limit.
4) The number selected in step 3 above is the Recommended Weight Limit (RWL) for the gestation period.

[1]Repetitive short duration lifting (Graphic B) can encompass multiple hours of lifting per day; however, each continuous lifting period should be less than one hour and followed by a minimum of one hour of non-lifting activity before the next continuous lifting period is initiated.

ENVIRONMENTAL AND OCCUPATIONAL HAZARDS

The Occupational Safety and Health Administration (OSHA) requires employers to provide a workplace free from known hazards that cause, or are likely to cause, death or serious physical harm. It also requires employers to give workers facts about harmful agents. The National Institute for Occupational Safety and Health (NIOSH) finds workplace hazards, figures out how to control them, and suggests ways to limit the dangers. If you or your union asks, this group will inspect your workplace for hazards. Other factors that can affect your pregnancy are listed below:

CHEMICALS

Stay away from insecticides, oil-based paint and lacquers, and all solvents. This includes gasoline, and carbaryl (insecticide). Other harmful chemicals are benzene, toluene, naphthalene (moth balls), and xylene. Lead is also dangerous—blood levels greater than 10 mg/ml are a hazard and treatment before pregnancy may be necessary. Latex paint is okay.

HAIR COLORS

The limited evidence that is available suggests that it is probably safe to dye your hair during pregnancy. There are no reports of hair dye causing changes in human pregnancies. If you are concerned about exposure then you can consider waiting until you have completed the first trimester, an important time of organ development. You can also consider highlights or foils where the dye does not have much contact with your scalp. Dye is not absorbed into the body through the hair follicle; it is absorbed through the scalp skin. If you are a hair stylist you should continue to wear gloves when applying dye on the hair of your clients.

HEAT/HOT TUBS

Excessive heat (temperatures >100˚ F) can affect pregnancy. You should ask your employer to limit the amount of time you spend in excessively hot areas and always stay hydrated by drinking large amounts of water. It is probably wise to avoid hot tubs during pregnancy to avoid raising your core body temperature for any length of time. If you must soak in a hot tub, please keep the temperature below 102˚ F and soak less than 10 minutes at a time.

IMMUNIZATIONS

During pregnancy you may get:

- Tetanus, hepatitis B, influenza vaccine because they are not live viruses.
- The Tdap (tetanus/diphtheria/pertussis) vaccine should be received during each pregnancy between 28-35 weeks gestation so that your immune cells will cross the placenta and protect your newborn baby until the baby receives first vaccinations with your pediatrician.
- If your employer or insurance company requests that you have a TB test during pregnancy (also called a PPD), you may do so. Please notify our office if you have a positive/abnormal test result.
- Women who are pregnant during flu season (October to April) are encouraged by the CDC to have a flu shot regardless of gestational age/trimester.

DO NOT GET:

- Yellow fever vaccine
- MMR (Measles Mumps and Rubella)
- Rubella vaccine
- Chicken pox vaccine

Consult with the St. Louis County Health Department and us before traveling outside of the U.S. (please also see the Travel and Immunizations section of this booklet).

INSECT REPELLANTS

DEET (N,N-diethyl-3-methylbenzamide) is effective against mosquitoes, biting flies, chiggers, fleas, and ticks. DEET has been in use for more than 50 years and is considered the "gold standard" of insect repellents. The CDC/Centers for Disease Control states that the recommendations for pregnant and lactating women do not differ from the recommendations for nonpregnant adults. **It is important to reduce your risk for mosquito-transmitted West Nile Virus and the multitude of tick-borne illnesses so read further about DEET and alternative options:**

DEET is available in many products in concentrations ranging from less than 10% to more than 75%. The effectiveness of DEET plateaus at approximately 30% but higher concentrations provide longer duration of protection. Products with concentrations around 10% are effective for periods of approximately two hours. Approximately 5% of the DEET will absorb into your bloodstream and can cross the placenta. DEET is not recommended for use in infants under two months of age. DEET can be neurotoxic.

A prudent approach is to select the lowest concentration effective for the amount of time spent outdoors. Products with 10-35% concentration are adequate in most circumstances. Higher concentrations should be reserved for situations in which insect infestation is high, elevated temperatures and humidity may limit evaporation, or time outdoors will exceed three to four hours.

An alternate to DEET is to use Picaridin (KBR 3023), a plant-derived piperidine compound. Picardin is effective against mosquitoes and ticks. Picardin is available in a 20% solution (Sawyer Insect Repellent), as well as in a 7% or 15% solution (Cutter Advanced and Cutter Advanced Sport, respectively). Picardin compares favorably versus DEET against mosquitos for up to five hours but only compares favorably against ticks for the first hour. Thereafter, DEET is more effective in repelling ticks. No toxicity with long-term use has been reported in humans with Picardin.

P-menthane-3,8-diol (PMD) is the active ingredient in oil of lemon eucalyptus. It is a plant-derived ingredient that has been listed by the Environmental Protection Agency (EPA) as effective against mosquitoes, biting flies, and gnats. PMD is available as 65% PMD (Repel Lemon Eucalyptus Insect Repellent Lotion or Spray Lotion and Survivor Lemon Eucalyptus Insect Repellent) and 10% PMD (Off Botanical Insect Repellent). Studies evaluating efficacy of PMD are limited but it is generally believed to be about one-half as effective as DEET.

Citronella is not effective in repelling ticks; however, it may have some effectiveness against mosquitoes if applied frequently.

RADIATION

Radiation in the first four weeks of pregnancy will either end the pregnancy or not affect it at all. Most exposure is related to work in the medical field, mining and in power plants. Less than 5 rads will usually not harm the fetus. It is best to limit doses to the fetus to less than 500 mrem and not to exceed 50 mrem in one month. Women that wear a dosimeter for their employment should have them monitored every 2-3 weeks.

Avoid X-rays while pregnant. If you must have an X-ray, make certain your abdomen is shielded (like with dental X-rays). If we order an X-ray in pregnancy, it will be the lowest dose possible and only if it is absolutely necessary, e.g. chest X-ray to evaluate for pneumonia or X-ray of the kidneys to evaluate for a kidney stone.

VIDEO TERMINALS

These are not known to cause damage to the fetus.

VIRUSES

If you are a childcare worker or a healthcare worker, or if you are the parent of young children, then you are at increased risk for viral and bacterial infections. We strongly recommend that you practice excellent hand washing techniques and universal precautions if you are in the healthcare field. In particular, if you know that a person is infected with CMV, parvovirus (Fifth's Disease), rubella (German measles), or chicken pox (only a concern if you have never had chicken pox and are not immune), please avoid contact with that person and contact our office if you have been directly exposed to that individual.

Please talk to your physician if you are concerned about occupational hazards. You may also contact the St. Louis County Health Department or the local office of the Occupational Safety and Health Administration if you have concerns about exposure to particular agents.

WHAT TO CONTINUE IN PREGNANCY

- Exercise—just don't overdo it
- Sex
- Having fun
- Some studies suggest that "ironing" the perineum (or stretching the vagina) will decrease the risk of a perineal tear. If you are interested in perineal massage, have your partner stretch the posterior part of the vagina and massage it every night from 28 weeks on. You can use KY Jelly as a lubricant.
- Go to prenatal classes, baby care classes, and read all you can about birth and babies. Consider taking an infant CPR class.
- Take your prenatal vitamins!
- Make sure you are getting adequate rest

WHAT TO AVOID IN PREGNANCY

- Alcohol—no level is safe
- Tobacco—this can cause preterm labor, mental slowness, poor growth, premature rupture of the membranes and fetal distress
- Dieting—eat a healthy balanced diet
- Over-work—you need 8 hours of sleep a night
- Pesticides and solvents
- Oil-based and lead-based paint (latex is ok)
- Douches
- Hot tubs and saunas hotter than 101˚ F
- Saccharine (pink package)
- Do not consume more than 2 servings of caffeine per day
- Downhill skiing after 16 weeks and water skiing and jet skiing anytime
- Contact sports
- Raw meat or poorly cooked red meat
- Cat litter boxes (see info regarding toxoplasmosis)

HOW OTHER MEDICAL CONDITIONS AFFECT YOUR PREGNANCY

We should know about any chronic problems for which you have seen a doctor in the last five years. We also need to know about congenital problems or injuries (such as a history of pelvic fracture) that may have affected your pelvis in the past and may make you high risk for complications or a candidate for a C-section. Chronic medical problems that are common in pregnant women:

ASTHMA

Continue to take your medications. It is harder on the baby for you to have an asthmatic attack than for them to absorb your medications. These medication are safe in pregnancy, in fact we use one of them to stop preterm labor!

CHRONIC HYPERTENSION

Five percent of women ages 30-39 have chronic hypertension (also known as high blood pressure). The incidence is much lower in women in their twenties. Most cases of hypertension are without a known cause, while a small number are caused by underlying diseases such as kidney or vascular disease. Chronic hypertension is different from pre-eclampsia in that there is evidence of blood pressure elevation before the 20th week of pregnancy. You may have hypertension if your blood pressure readings early in pregnancy were higher than 140 systolic (upper number) or 90 diastolic (lower number). If we diagnose chronic hypertension during pregnancy then we will initiate treatment with medication and close observation. Women with chronic hypertension are at increased risk for pre-eclampsia, preterm delivery, fetal growth restriction, and placental abruption (premature separation of the placenta from the uterine wall). If you have chronic hypertension we will have you monitor your blood pressures at home, record and bring them for review at your appointments. You will have more frequent ultrasound measurements to follow your baby's growth and weekly fetal testing at a perinatal center after 32 weeks gestation. Please contact us or go to the hospital if you have a blood pressure reading with a systolic value (upper number) higher than 160 or a diastolic value (lower number) higher than 100.

DEPRESSION

Women are twice as likely as men to develop depression. Chronic depression (which lasts longer than three months) is most common during the childbearing years. Women who have been treated for depression as well as those who have never had the condition may develop symptoms during pregnancy. Although we use the word "depression" to mean feeling sad or "down" for a day or so, the medical condition of depression is longer lasting and more serious. The two key symptoms of depression are loss of interest in usual activities (no longer finding pleasure in things you used to enjoy) and depressed mood (feeling sad, helpless or hopeless, and sometimes crying for no reason). In addition, women with depression have most or all of the following symptoms on most or all days for at least two weeks:

- Sleeping too much or too little, or awakening at night and being unable to fall asleep again.
- Being unable to think or concentrate.
- Eating too much or too little, or having unexplained weight changes.
- Being agitated, irritable or restless.
- Feeling weak, tired, or lacking in energy.
- Feeling worthless or guilty.
- Losing interest in sex.
- Thinking about death or dying, feeling that family and friends would be better off if you were gone.

Because depression can interfere seriously with your life, professional treatment is important and can be lifesaving. Depression is caused by a chemical imbalance in the brain so medication to correct the imbalance, alone or in combination with psychotherapy or behavioral therapy, is often the most effective treatment.

Medications taken during pregnancy can affect the fetus so we are understandably cautious about prescribing or recommending them. Generally the risk of untreated depression outweighs any small risk of medication treatment during pregnancy. If you are already taking antidepressants and stop because you are pregnant, your depression will likely recur. The most serious problem with untreated depression is that women may try to harm or kill themselves but there can be other problems for both mother and child.

Depressed women may not eat properly or keep prenatal appointments which puts their own and their babies' health at risk. Their developing fetuses are more likely to have intrauterine growth retardation (grow more slowly) which can cause problems after birth or to be born prematurely. Depression may also affect the development of baby's language and intelligence.

Risks associated with antidepressant use during pregnancy:
Risk considerations include risk for birth defects, risk for stillbirth or infant death, pregnancy complications, and developmental considerations of your child in the early years.

Regarding risk for birth defects, first-trimester exposure to SSRIs (Celexa, Lexapro, Prozac, Zoloft) is associated with little to no risk of teratogenicity (abnormality caused by a medication exposure), and SSRIs as a group are not considered major teratogens. No single type of birth defect has consistently been observed across studies of SSRIs (with one exception noted shortly). If a medication is to blame for birth defects then it would be expected to cause a similar risk and type of malformation consistently across studies. However, Paxil (paroxetine) was noted in one study to cause a 0.2% increased risk for fetal heart defects. This was a very small increased risk and has not been consistently supported in other studies. Nonetheless, we recommend avoiding Paxil during the first trimester of pregnancy if possible.

Regarding risk for stillbirth or infant death, the class of anti-depressants known as SSRIs (Celexa, Lexapro, Prozac, Zoloft, Paxil) does not appear to be associated with an elevated risk of perinatal death based upon large studies. The largest study included information on 1.6 million singleton births across five countries. Over 29,000 mothers had filled a prescription for an SSRI. After accounting for maternal factors such as age, smoking, diabetes, hypertension, and hospitalization for psychiatric illness, the risks of stillbirth and infant mortality were comparable for women who used or did not use SSRIs.

Regarding pregnancy complications, it is not known whether exposure to SSRIs increases rates of preeclampsia, preterm birth, low birth weight, or miscarriage, due to conflicting results across studies and lack of control for confounding factors. The absence of any specific findings given the large numbers of women who have been studied is generally reassuring.

Regarding the newborn time period, complications associated with exposure to SSRIs and SNRIs (Effexor, Cymbalta) during the third trimester include newborn agitation, irritability, poor feeding, and respiratory distress. The incidence of these symptoms range from 5% to 85% since it is difficult to define variation from normal. Symptoms are usually mild and managed with observation, but severe cases may require medical attention. Most symptoms resolve by 2 weeks of age. Premature babies seem to be more susceptible to symptoms.

Regarding infancy and childhood implications, there are inherent limitations and biases in studies since it is difficult to delineate the impact of having a parent with depression versus the exposure to medications during pregnancy. The majority of studies that have followed babies exposed to SSRIs/SNRIs suggest that there is little to no effect upon infant and childhood (e.g., age six months to six years) intelligence, language, and behavior.

Making the decision to take antidepressants during pregnancy:
Deciding about antidepressant use during pregnancy is not easy. You want to do everything in your control to have a healthy baby and avoiding medication may seem safest. However, depression affects your own quality of life and may have some harmful effects on your baby. The real question is not "is it safe to take antidepressants during pregnancy?" but "given what we know now, what makes the most sense for me during my pregnancy?"

If you are planning a pregnancy and you already take an antidepressant, tell your physician so you can make an informed decision about continuing or stopping. If you are taking an antidepressant and have an unplanned pregnancy, talk with the prescribing physician and seek prenatal care right away, just as you would with any other medication. If you have recovered from depression and become pregnant, discuss your health history with your physician so you can be prepared if the depression recurs. You have the right and the responsibility to make an informed decision with the help of your doctor and, if appropriate, your partner or support person, about treating your depression during pregnancy. Our practice very much supports treatment of depression during and after pregnancy but it is important to be well informed.

DIABETES

Patients with **insulin dependent diabetes** are at high risk for complications of pregnancy including birth defects. Our opinion is that these patients are best managed by a maternal fetal medicine specialist. If a patient is diagnosed with diabetes during pregnancy, called **gestational diabetes**, then diet alone is usually sufficient for management of glucose values. Oral medication or insulin is sometimes required to normalize blood sugars in patients with gestational diabetes.

SEIZURE DISORDERS

There are approximately 1.1 million women of childbearing age in America with epilepsy. Over 90% of children born to women with epilepsy are born with no malformations nor do they develop epilepsy. Most women experience no change in their seizures during pregnancy or postpartum although 30% of women may experience some increased frequency of seizure activity. Convulsive seizures can cause preterm labor and miscarriage and cause maternal injuries from falls. Seizures of any type increase the child's risk of developmental delay and of developing epilepsy.

Sleep deprivation and stress can play a role in increased seizure frequency but the primary source of increased seizure frequency seems to be the decrease in drug levels of antiepileptics as pregnancy progresses. The incidence of congenital malformations (birth defects) in the general population is 2-3%. The risk of congenital malformations in infants of mothers with epilepsy is doubled to 4-6%. There seems to be a higher risk of birth defects when multiple antiepileptic medications are used so we prefer that a woman take only one medication during pregnancy to control her seizures if at all possible. Do NOT make any changes in your medications without the approval of your neurologist. We will insist that you see your neurologist during pregnancy to help optimize your chances of remaining seizure-free during pregnancy and postpartum.

There are many medications used to control seizures and while there are no "head-to-head" studies comparing the medications during pregnancy as far as control of seizures and incidence of birth defects, the risks among medications appear to be fairly similar. The exception to this is valproic acid (Depakote) which is associated with a 1-2% risk for spina bifida (a failure of the lower spine to form correctly) compared to less than 1% for other antiepileptic medications. Carbamazepine (Tegretol, Carbatrol) use is associated with a 1% risk of spina bifida. Phenytoin (Dilantin, Phenytek) is associated with fetal hydantoin syndrome which involves changes in the fingertips, underdevelopment of the fingernails, broad nasal bridge, wide distance between eyes, and developmental delay.

Phenobarbital does not appear to increase the risk of major malformations. There is a small risk of bleeding in newborns whose mothers took phenobarbital, phenytoin (Dilantin, Phenytek), primidone (Mysoline), or carbamazepine because these medications can interfere with clotting factors. This risk can be minimized by taking vitamin K, 10 mg. daily, during the last month of pregnancy. We can provide you with a prescription for vitamin K during your third trimester.

We will also recommend a comprehensive ultrasound to all women with epilepsy and this will be performed at a high risk center such as Mercy Hospital Perinatal Center or Missouri Baptist's Women's Wellness Center. While folic acid supplements seem to offer protection in the general population against spina bifida, there does not seem to be the same protection in women taking valproic acid and carbamazepine (who are at increased risk for spina bifida). Nonetheless, we will recommend supplementing your diet with 4 mg. of folic acid daily if you take one of these medications. You will need an additional folic acid prescription with your prenatal vitamin.

Most term infants can breastfeed with little difficulty because most drug levels are lower in the breast milk than they were in the mother's plasma. Keppra is one exception; it is generally advised that women on Keppra bottle feed. Some babies have difficulty with sedation from the antiepileptics (phenobarbital in particular) and breastfeeding would have to be discontinued. Please consult with your neurologist and pediatrician when deciding whether to breast or bottle-feed.

THYROID DISEASE

If your thyroid is low, please continue to take your medicine, as it is required to have a healthy pregnancy. It is likely that your dose will require adjustment during pregnancy and we will check your thyroid every trimester to see if your dosage is sufficient. If you have either Grave's disease or Hashimoto's thyroiditis, we will ask you to continue to see your endocrinologist during pregnancy.

ULCERS

It is very important to continue treatment while pregnant. Zantac, Pepcid, Maalox, Mylanta, Tums and Carafate/Sucralfate are fine. Please let us know if you are on any other medications for treatment of ulcers. Gastroesophageal reflux worsens during pregnancy and you may require changes in your medication dose or additional medications to control your symptoms.

TRAVEL AND VACCINATIONS

You should consider that unforeseen medical complications may occur at any point in pregnancy and medical technology is not equal in all countries nor is it necessarily equal across the United States so please give thought to that issue when you decide to travel. You may travel while pregnant with some restrictions:

- Never sit longer than 2 hours at a time. Prolonged sitting increases your risk of developing blood clots in your legs.
- After 34 weeks we do not recommend travel greater than 2 hours from the hospital.
- Women with uncomplicated pregnancies can safely travel by air until 34 weeks. If you are experiencing preterm labor or high blood pressure or have been restricted in your activities, you should not travel at all during pregnancy.
- High altitudes may make you ill while pregnant. Stay well hydrated (lots of water, non-caffeinated beverages) and rested. If you are short of breath, you should sit down. If you remain short of breath, you should seek medical attention.
- Always use seatbelts. Position the seatbelt low and over your hipbones. Use the chest strap as usual.
- At your destination, locate the nearest hospital that provides obstetrical services. Have their phone number with you at all times!

INTERNATIONAL TRAVEL

Avoid going to primitive countries with questionable water supplies while pregnant (i.e. some parts of Mexico and third world countries). If you must travel outside the country during your pregnancy, please contact your primary care physician or the health department to determine whether you will require vaccines prior to travel. **The following are some diseases that you will need to consider for international travel:**

- Measles, Mumps, Rubella: Vaccine against these infections is contraindicated during pregnancy. Measles and rubella cause deformities of the fetus and several maternal illnesses. Immunity status can be checked with blood work but if you are nonimmune, you should defer travel to less developed countries.
- Yellow Fever: This is a live virus vaccine and should only be administered to travelers going to endemic areas. Otherwise, a waiver can be issued by a physician to exempt the nonimmune traveler from vaccination.
- Polio: Inactive polio vaccine can be administered as a booster during pregnancy for travel outside the western hemisphere. The oral vaccine can be used after the first trimester only if the inactive vaccine is unavailable.
- Hepatitis: Hepatitis A infection is not associated with transmission to the fetus but hepatitis A can be a debilitating illness to have while abroad. All travelers overseas should receive hepatitis A vaccine or immune globulin. Both hepatitis A and B vaccines are safe and can be administered to travelers at risk. All women are tested for evidence of chronic hepatitis B disease early in pregnancy.
- Typhoid Fever: Typhim VI is a new preferred vaccine.
- Tetanus and Diphtheria: This vaccine is safe but if possible should be administered after the first trimester.
- Cholera: Because the risk of acquiring cholera is low and because the vaccine is not very effective, you should avoid vaccination during pregnancy.
- Malaria: Malaria is an insect-transmitted disease that is more severe if you are infected during a pregnancy and has a death rate of 10% during pregnancy. There is up to a 60% risk of miscarriage if infection occurs so it is crucial that you take preventive measures if you must travel to a malarious area. It is important to protect yourself from mosquito bites by wearing long-sleeved shirts and pants and using netting around your sleeping area. It is also important to use insect repellant that contains DEET (diethyltoluamide). Three primary antimalaria prophylactic medications are chloroquine, proguanil, and mefloquine. One of these should be taken starting one week before departure and for four weeks after returning home. Primaquine should not be taken during pregnancy.
- Miscellaneous Vaccines: Rabies, Japanese encephalitis, plague, and meningococcal vaccines can be administered if required.

EXERCISE

The Center for Disease Control and Prevention and the American College of Sports Medicine both recommend that nonpregnant individuals should exercise a total of 30 minutes daily. This exercise recommendation is aimed at improving health and well-being, not athletic training. The American College of Obstetricians and Gynecologists states that in the absence of medical or obstetric complications, pregnant women also can adopt this recommendation. The two best forms of exercise during pregnancy are walking and swimming in a pool!

Things to remember while exercising during pregnancy

- Wear loose, comfortable clothing that allows you to stay cool
- Stay well hydrated
- Make certain that you spend 10 minutes warming up with gentle stretching before you exercise as well as 10 minutes cooling down after completing your workout

Warning Signs to TERMINATE exercise while pregnant and SEEK care immediately

- Vaginal bleeding
- Shortness of breath prior to exertion
- Dizziness or headache
- Chest pain
- Contractions
- Loss of amniotic fluid (bag of water)

Activities to AVOID

- Supine position (reclined on your back) during exercise
- Sit-ups, push-ups, toe touches
- Motionless standing associated with symptoms such as dizziness and weakness due to less blood returning to your heart
- Recreational sports should be considered on an individual basis but avoid high potential for contact (basketball, hockey, soccer, softball, racquet sports, etc.) and/or high risk for fall (gymnastics, horseback riding, inline skating, downhill skiing, etc.)
- Scuba diving is strictly forbidden during pregnancy due to the increased risk of fetal decompression sickness and fetal death!
- Exertion or exercise above elevations of 6,000 feet

Do NOT exercise if you have any of the following complications during pregnancy

- Heart disease
- Incompetent cervix or a cerclage placed
- Placenta previa after 26 weeks of pregnancy
- Preterm labor during current pregnancy
- Pre-eclampsia or pregnancy-induced hypertension
- Vaginal bleeding in the second or third trimester
- Ruptured amniotic membranes (broken bag of water)
- Poorly controlled seizure disorder
- Poorly controlled hyperthyroidism
- Heavy smoker (one pack per day or more)
- Multiple gestations (twins)
- Intrauterine growth restriction in current pregnancy
- Severe anemia (low blood count)

After delivery, resumption of pre-pregnancy exercise routines should be gradual. In the absence of medical complications, some may be able to return to such activities within days after delivery. Moderate weight reduction while nursing is safe and does not compromise the baby's weight gain. Remember, after a cesarean section, you must limit lifting greater than 20 pounds for four to six weeks as you heal.

DENTAL HEALTH

There is a strong connection between gum disease (called periodontitis) and preterm delivery. It is estimated that periodontitis may contribute to as many as 45,000 preterm low birth weight infants every year in the United States. That is more than those attributed to smoking and alcohol use! A baby born prematurely is at increased risk for developmental delays and health problems. If you have periodontitis, your body tries to fight the inflammation present in the gums and the by-products of that fight are believed to be the cause of early labor. Regular dental exams can allow the early detection of tooth and gum disease and possibly improve your chances of delivering a healthy baby on time. Frequent brushing and daily flossing are a must.

Dental exams and cleaning are certainly encouraged during pregnancy and dental procedures involving local anesthetic (without epinephrine) are fine. All dental procedures may be done under local anesthetic (no epinephrine), including root canals. You may have your dentist prescribe amoxicillin, penicillin, or Keflex as antibiotics after the procedure. You should not receive inhaled nitrous oxide while pregnant. You may have dental X-rays if your dentist feels they are needed and you wear a lead apron to shield your abdomen. If you do not have a dentist, please ask us for a referral!

DAILY FETAL MOVEMENT RECORD

Studies show a relationship between baby's movements and its health. Beginning at 28 weeks you should monitor your baby's activity daily as follows:

- Fetal movements should be counted within 45 minutes after a meal.
- The best monitoring times are between 7:00 and 11:00 p.m. because babies are most active at these hours.
- Rest quietly on your side (preferably left) while you count movements.
- Count all movements, including swishes, nudges, kicks, and rolls.
- Once you have reached a count of 10 you may record the length of time it took and stop counting.
- **If the baby has not moved 10 times in two hours, please go to your delivery hospital for evaluation. The hospital will call the doctor on call once you are evaluated.** Make certain that you had a good meal and fluids before starting your kick counts.
- If there is an abrupt change in the amount of time that it takes to reach 10 movements, please contact us (e.g. if your baby normally takes 30 minutes to reach 10 movements and one night it takes just under two hours).
- Remember that movements will slow down (and will be more subtle) during the last month of pregnancy as the baby has less room in the uterus.
- If your placenta is anterior (attached to the front surface of your uterus), then generally it will be more difficult to feel baby's movements because they will be blunted by the placenta.

If you have any concerns about your baby's movements before starting fetal movement counts at 28 weeks, please address them with your physician or nurse practitioner.

COMMON PHYSICAL CHANGES AND COMPLAINTS OF PREGNANCY

(Most of these changes resolve after pregnancy!)

BACKACHE

Most likely to occur between 28-40 weeks from a change in posture due to increased weight and weight distribution to the front. This causes muscle spasms in the back.

- Try to get regular back rubs, use a support garment such as a maternity girdle or singlet.
- Do back exercises twice daily. Shoulder rolls for upper back pain or pelvic rock for lower back pain. Position yourself on your hands and knees and gently tighten your abdomen and buttocks with your head relaxed down between your arms. This will force your lower back toward the ceiling (like a cat arching its back).
- Take warm baths before bed and 500 mg. of calcium or TUMS 500 as a muscle relaxant.
- Sleep with many pillows to support your legs and stomach.
- Wear a supportive bra.
- Heating pads are fine. Use on "low" or "medium" setting.
- Wear low-heeled shoes and do not stand in one place too long.
- Bend at your knees instead of bending at your waist.

BLEEDING GUMS

Frequent dental trips are necessary when you are pregnant and if any dental surgery needs to be done, Lidocaine without epinephrine is safe for pain relief. If there are abscesses or infection of the mouth, the drug of choice to be given to you by your dentist is ampicillin.

BREAST ENLARGEMENT AND LEAKING

Breast enlargement occurs in the first 12 weeks and progresses again at 26-33 weeks. Breast leakage can start at anytime during pregnancy. This is caused by the hormonal surge from pregnancy and the body preparing for breastfeeding. The nipples may be particularly sensitive and that is normal.

- Wear a well fitting and supportive bra.
- Come in to be seen if you have any bloody discharge from your nipples.
- Clear or milky-appearing drainage is normal.

CARPAL TUNNEL (HAND NUMBNESS)

Carpal tunnel symptoms usually occur in the last trimester of pregnancy and consist of very painful hands secondary to swelling of the carpal tunnel. Patients who work at repetitive tasks such as keyboards are especially vulnerable. Symptoms usually resolve after delivery.

- Wear wrist braces to bed and when active. These can be purchased at your pharmacy. Ask your pharmacist for assistance.
- Maintain a low-salt diet and maximize water intake.
- Minimize repetitive activities such as typing and lifting.
- Apply ice packs to wrists.
- You may need to see a hand surgeon for injections.

CONSTIPATION

Occurs from the triad of dehydration, prenatal vitamins with iron and pressure of the baby against the colon.

- Increase your water and juice intake.
- Increase roughage such as raw fruits, prunes, whole grains, or bran cereal.
- You may also take Metamucil, Citrucel, FiberCon, Miralax, or Colace as needed.
- Exercise regularly.
- A cup of hot water with lemon three times per day may help.
- If you have less than three bowel movements per week, try daily Colace/PeriColace and/or Miralax.

CONTRACTIONS

Cramping early in pregnancy can be a normal occurrence. If it is very painful, please contact us. It is very common for the uterus to start to contract irregularly in the third trimester (after 28 weeks). These contractions are called Braxton-Hicks contractions. If they are painful and regular, this could indicate preterm labor. A Braxton-Hicks contraction is mild enough that it does not interfere with your ability to speak and does not stop you from your usual routine. You may feel it as a very mild tightening.

If you feel very uncomfortable or experience more than one or two per hour before your 34th week, please contact us. We will generally recommend evaluation in our office or at the hospital. If you are between 34 and 37 weeks you can have up to four or five Braxton-Hicks contractions per hour without alarm unless they are intense or more frequent. If your contractions occur after 37 weeks, they may be the beginning of real labor and you should follow the instructions under "Labor."

What to do: If you think you are contracting before 37 weeks, drink two or three 8 oz. glasses of water. If they do not stop, try soaking in a tub of warm water. If this does not stop the preterm contractions, go directly to Labor and Delivery at the hospital where you intend to deliver. They will call us and put you on a fetal monitor and possibly use medications to stop your labor.

There is no way to determine by phone if you are in preterm labor. Therefore, you must go to Labor and Delivery for monitoring and other tests if you believe that you might be experiencing contractions before term. Don't waste time with a phone call, just go to the hospital and they will contact us. They know exactly where to find us at all times!

DIZZINESS/LIGHT-HEADEDNESS

A feeling of light-headedness is common at times during pregnancy. Blood pressure is lower during pregnancy and can contribute to this feeling. Standing in a warm shower can make your symptoms worse since your blood vessels dilate even further in the warm water. We recommend that you keep showers on the lukewarm side while pregnant.

Low blood sugars are common during pregnancy, so make certain to eat small regular meals and snacks. A large intake of sugar can lead to dizziness several hours later as your glucose level drops abruptly. Light-headedness can also occur if you have been standing in one place for long periods of time. This is especially true if you have been lying down—stand up slowly and do not lie flat on your back. The weight of the pregnant uterus causes pressure on the great vessels which return blood to your heart which in turn decreases the blood flow to your brain. You should lie on your side or on your back with a pillow under your hips tilting you to the side after the 16th week of pregnancy instead of flat on your back.

Stay out of the heat if possible and let us know if you have symptoms that persist. If you are experiencing true dizziness (the room is spinning, not a feeling of light-headedness) then you may have an inner ear problem which can be caused by many different things so please contact your primary care doctor to have an evaluation if dizziness is the problem.

FATIGUE

This is the most common complaint and there is nothing you can do except to slow down! Take naps, let up on the housework—just read as much as possible, take your vitamins, and eat a healthy diet. Ask your husband/partner to help with some of the domestic duties to give you time to rest.

FEVER DURING PREGNANCY

Most fevers are caused by viral infections which will not respond to treatment with antibiotics. It is important to keep your fever down because prolonged high fevers can affect the growth and development of your baby. To treat your fever, take two Tylenol Extra-Strength tablets every four hours and drink lots of clear fluids. Keep a thermometer near and check to keep your temperature under 100.4° F. If that does not decrease it, you will need to take lukewarm baths and use ice packs under your armpits and on your groin to stay cool. Viruses usually run their course in 24-48 hours. **If you have painful urination, a productive cough, abdominal pain, severe upper back pain or persistent vomiting (for more than 24 hours), you need to be seen in the office, emergency room, or Labor & Delivery immediately.**

FREQUENT URINATION AND BLADDER INFECTIONS

The growing uterus presses against the bladder the first months of pregnancy until mid-pregnancy when frequency improves. Frequency will return again at the end of pregnancy as the baby's head compresses the bladder. Bladder infections in pregnancy are more dangerous than at other times because they can cause preterm labor. Sometimes a bladder infection may not produce the same symptoms as you may have experienced before the pregnancy. If you are having trouble urinating or having lower abdominal pain, you will have to be seen in the office or Labor & Delivery on the weekends. Some helpful hints to decrease the risk of infection:

- Drink lots of water and citrus juice.
- Wipe front to back.
- Urinate before and especially after intercourse.
- Bathe before intercourse.
- Practice good hygiene.

HEADACHES

Headaches are a very common complaint during early pregnancy and typically improve by 16 weeks. If you have a history of migraines, please inform your physician or nurse practitioner. Most headaches are tension headaches but you need to contact us if you are experiencing headache in conjunction with visual sparkles, light sensitivity, numbness of hand, severe swelling of the face and hands, neck pain or fever.

- Treat your headache with an ice pack over your eyes, two Tylenol every four hours, and bed rest.
- If the sinuses are involved, you may take Sudafed during the day or Benadryl Allergy 50 mg. at night.
- **If you have a headache with light sensitivity, sparkles in the visual fields, or pain behind one eye, you may have a migraine or a headache associated with pregnancy-induced hypertension (PIH). You should contact our office to be seen that day or go to Labor & Delivery for evaluation after office hours.**

HEARTBURN

This is most likely to occur between 28-40 weeks because the baby is taking up room in your abdomen and pushing on your stomach when it is full. The hormones of pregnancy cause the muscle between your esophagus and stomach to relax which allows stomach acids to flow painfully upward into the esophagus.

- Try to eat small meals.
- Avoid spicy foods.
- Elevate the head of your bed or prop yourself up with pillows.
- Take Tums, Gaviscon or Mylanta for relief.
- Try sleeping in a recliner.
- For persistent symptoms, you may take over-the-counter Zantac or Pepcid (follow the dosage instructions on the box).

HEMORRHOIDS

These are most likely to occur 28-40 weeks when the baby and uterus is putting pressure on the rectum and constipation is at its worst.

- Follow instructions for constipation and use Anusol, Preparation H or Tucks for comfort.
- There is a prescription suppository available that may offer some relief in severe cases. Contact us!
- Put Epsom salts in a handkerchief, dip in hot water, and apply to hemorrhoids.

LEG CRAMPS

These are generally due to the pressure of the enlarging uterus on the circulation of the legs. They can also be due to a lack of calcium. They may occur at any point during pregnancy but are most common during the last three months. They can be very painful.

- Do not wear high heels.
- Don't stand in one place for long periods if you can avoid it.
- Elevate your legs when sitting at work and when you get home.
- Wear support hose at work

- Decrease soft drink ingestion and take two Tums before bed and 500 mg of magnesium gluconate at bedtime. (Please read the information regarding calcium supplementation in the Nutrition section).
- Soak in a warm tub before bed.
- Ask your partner for leg massages every night!

MORNING SICKNESS

Nausea and vomiting are complicating factors in 75% of all pregnancies. In two-thirds of cases, women have nausea and vomiting while another one-third only experience nausea. Thirty percent of the time the symptoms will resolve within 10 weeks. Thirty percent of the time the symptoms persist to 12 weeks and 30% persist to 16 weeks gestation. The remaining 10% of cases persist throughout pregnancy. The exact cause of nausea and vomiting during pregnancy is unclear. While many people refer to "morning sickness," the symptoms actually occur anytime during the day. Symptoms typically lessen during sleep.

- Eat small frequent meals (every 2-3 hours).
- Crackers, toast, potatoes, and cereal tend to be easier to digest and can help nausea. Avoid greasy and fatty foods.
- Sit upright after meals.
- Don't eat and drink at the same time—wait at least one hour between eating and drinking.
- Eat immediately upon rising—leave something beside your bed such as a juice box (frozen at night) or crackers.
- Drink soda without bubbles.
- Ginger (such as ginger tea) has proven to be effective against nausea.
- Switch to chewable prenatal vitamins or two chewable Flintstones-Complete vitamins.
- Keep a food diary so that you can determine whether there are certain foods eaten at certain times of the day that improve your nausea level.
- Several classes of medications for nausea have been studied extensively during pregnancy and the ones most commonly used are vitamin B_6, antihistamines (Unisom, Benadryl), serotonin antagonists (Zofran), and phenothiazines (Compazine, Tigan).
- If your nausea is severe and has failed to respond to the conservative measures above then you should proceed with a trial of vitamin B_6 and antihistamine as follows. This regimen has proven efficacy. If you do not experience relief and desire prescription medication, please contact our office. At your local pharmacy you should purchase vitamin B_6 (pyridoxine) 25 mg. and Unisom (doxylamine 25 mg.). Take one vitamin B_6 and one Unisom before bed. Take one-half tablet vitamin B_6 and one-half tablet Unisom in the morning and again in the afternoon. There is a prescription medication with this formulation that we can prescribe if you wish, called Diclegis.
- **If you cannot keep fluids and/or food down for 24 hours, you must go to the emergency room at the hospital where you plan to deliver for IV fluids to avoid dehydration which, if not treated, may threaten the health of your pregnancy.**

NOSEBLEEDS

These are common in pregnancy due to the increased blood flow to all organs.

- Use pressure and ice packs. If the nosebleed does not stop, you will need to go to the emergency room at the hospital where you plan to deliver.
- Prevention lies in keeping the mucous membranes of your nose moist. Keep your home air humidified in the winter, use Ocean Spray nasal spray to keep the nasal membranes moist and avoid medicated nasal sprays.

PALPITATIONS

It is very common to notice that you can feel your heart beating much more prominently when you are pregnant. Your blood volume is increased and your circulatory system is in a "hyperdynamic" state. If you feel that your heart is skipping beats, you need to contact your primary care physician or our office or go to an emergency room if it persists. If you are exercising when these symptoms occur, stop! If you smoke, stop! If you are drinking more than one or two servings of caffeine per day, stop!

PELVIC PRESSURE
This is most likely to occur in the second and third trimesters and may worsen with each additional pregnancy. The weight of the pregnancy stretches the muscles of the pelvic floor and the pelvic bones, causing pressure and dull aches. Wear a support garment to avoid this and take a lot of breaks.

ROUND LIGAMENT SPASM
The round ligaments attach the upper uterus to the lower sidewall of the pelvis. As the uterus grows the ligaments are stretched and since they have plenty of nerve fibers within them, you will feel spasms of pain periodically. The pain is present in the lower pelvis and can be very sharp. It is most noticeable when you turn over in bed, turn to reach for something, or stand up. It is usually a fleeting pain. Round ligament spasms are usually first noticed around 13 weeks and can persist intermittently throughout pregnancy. If necessary, try Tylenol for pain relief. As an alternative, a warm bath or heating pad can be very effective. If your symptoms are severe or persistent, please contact us for evaluation.

SHORTNESS OF BREATH
This is similar to palpitations and is common in the last trimester because you have gained weight and your baby is placing pressure on the diaphragm. Slow down! If you have asthma or lung disease, your medications may need to be adjusted. If you are experiencing chest pain in addition to shortness of breath, then you need immediate evaluation. Contact us or go to the emergency room of the hospital where you plan to deliver.

SKIN CHANGES
Hair loss, darkening of the skin, stretch marks, and new moles are all very common during pregnancy. Most patients will experience hyperpigmentation, typically on the areola of the breasts and on the abdomen. Any area of the body is susceptible to hyperpigmentation. When hyperpigmentation occurs on the face it is referred to as melasma and has the appearance of a raccoon-like mask. The pigment changes generally fade after pregnancy. Hirsutism is coarse hair growth that is male-like and it will occur in up to 50% of pregnant women. The only definitive treatment for hirsutism is electrolysis or laser hair removal. Two-thirds of women develop vascular changes during pregnancy such as spider veins, splotches, and redness of the palms of the hands.

Varicose veins and hemorrhoids are another common vascular change and they may or may not shrink after delivery. Striae, also known as stretch marks, are common on the breast, abdomen, and thighs. There is little that can be done about stretch marks but be reassured that they generally fade significantly (from a deep red to a pale white) over the course of the year after delivery. Many women are believers that cocoa butter applied to the skin daily helps minimize stretch marks.

SLEEP DISTURBANCES
Most women are generally uncomfortable during pregnancy and the addition of frequent bathroom trips means that most women are sleep deprived. A few measures that might help are:

- Do not eat immediately before sleep although a warm glass of milk can help.
- Practice relaxation techniques.
- Take a walk in the evening followed by a comfortable bath.

SWELLING
Swelling occurs in the last trimester and is worse in hot weather. The increased weight of the uterus on the major lower vessels contributes to lower extremity swelling. In addition, the hormones of pregnancy cause the body to retain salt and therefore water. Please report any swelling of the face, around the eyes, hands or feet because it can be an indicator of pre-eclampsia.

- Regular exercise (unless your activity has been restricted) helps promote diuresis.
- Eat at least three servings of protein each day.
- Do not eat fast foods, salty foods or chips.
- Drink a lot of water.
- Rest with your feet up twice daily for at least 30 minutes.
- Wear support hose and comfortable shoes.
- Wear a support garment to help lift the uterus and decrease pressure on lower vessels.

VAGINAL DISCHARGE

Increased vaginal discharge is part of pregnancy. It is related to an increase in hormonal levels and blood flow to the vagina. It is a normal discharge unless it itches, burns, or has an odor. If your discharge develops a fishy odor it might represent an infection called bacterial vaginosis and it needs to be treated because this infection has been associated with preterm labor. Discharge is the manner in which the vagina cleanses itself. If it is clear or white, it is usually normal but if you are concerned, please make an appointment for evaluation. If it smells like ammonia or is excessive (trickles down your leg), it can represent a leak in the bag of water around the baby and you should be seen promptly in the office or in Labor and Delivery.

- Avoid wearing pads that can cause a yeast infection.
- Always wipe front to back.
- Bathe before intercourse.
- Practice good hygiene.

YEAST INFECTIONS

These are common in women and much more common when you are pregnant. Over-the-counter Monistat easily treats them and it is safe in pregnancy.

- If you are prone to yeast infections, sleep without underwear.
- Don't wear pads daily.
- Wear cotton underwear.
- Eat yogurt with "active ingredient" every day.
- Change out of workout clothes and wet swimsuits promptly.

COMPLICATIONS
DURING AND AFTER PREGNANCY

Factors in your current health, past medical history or pregnancy may indicate a higher than average risk for developing complications. Appointments may be scheduled more frequently and additional tests may be required depending upon your diagnosis. It is important to know about some of the variations in pregnancy and their treatment.

BREECH PRESENTATION

Ninety-seven percent of babies are head down (vertex) by 37 weeks gestation. External version, the turning of the baby to a vertex (or a head first) position has been an art of Obstetrics throughout the ages. It has been revised due to its much greater success with the use of uterine relaxants. With a relaxed uterus, the process of turning the baby within that uterus is rendered much easier. Breech babies are usually detected during routine office exams after 36 weeks and if your baby remains breech after 37 weeks, we will discuss management options with you and your partner. Factors to consider include the size of the baby, the size of your pelvis, the amount of fluid around the baby, and the type of breech (feet first or bottom first). If your physician feels that you are an appropriate candidate for external version then this will be offered and together with your physician you will decide the best way to proceed.

If your baby is breech when you are in active labor then an external version is **not** offered. Rarely, we are able to attempt a version when a patient is in early labor. An external version is performed at the hospital in Labor and Delivery. You will receive a medication that helps the muscle of your uterus relax. We will use the ultrasound to confirm the baby's position and then gently use our hands on your belly to help the baby roll in the uterus. The procedure can be quite uncomfortable and we will stop at any point if you are too uncomfortable. You can imagine that we have the most success if a baby is not very large, has plenty of fluid, and is not "engaged" in the pelvis. If your baby remains breech after an attempted external version or if you are not a candidate for version then the safest way to deliver your baby is by cesarean section.

CHICKEN POX

If you had the chicken pox infection as a child or adult then you have immunity against future infection. If you did not have chicken pox in the past, or if you are unsure, or if you had the vaccine, then we will test you for immunity in your early blood work. Up to 80% of patients who are unsure about their past or believe they did not have the chicken pox will actually have immunity because they had a mild infection that went unnoticed. If you are not immune to the chicken pox, we do not recommend vaccination during pregnancy; however, it IS important to notify us promptly if you are exposed to a known or suspected case of chicken pox because we can give you an injection that will lessen the severity of the disease if you contract the infection. The injection is known as "VZIG" and is only beneficial if given within 72 hours of exposure. Adult women who develop chicken pox are much more likely than children to develop severe complications, including pneumonia. It is wise to minimize the risk of complications by giving a non-immune woman a shot of VZIG if she is exposed to a person with chicken pox. Only 1-2% of unborn babies will acquire chicken pox if the mother develops an infection. There is nothing that can be done to prevent transmission to the unborn baby if a mother contracts chicken pox.

CYTOMEGALOVIRUS (CMV)

If you report to us that you are a healthcare worker or childcare worker, you will be screened with your early prenatal blood work for your CMV status. We are specifically testing to see if you have evidence of a recent infection. If you have evidence of a recent infection then we are concerned about the possibility that your baby may have been exposed to the viral infection. Because CMV is an extremely common infection (the vast majority of people has had the infection in the past and is "immune") and in most cases an adult will have no identifying symptoms of infection, routine screening for CMV is not performed. Healthcare and childcare workers seem to be at most risk for exposure.

There are multiple strains of CMV so even if an adult carries immunity based on lab results, it is still possible to acquire an infection with a new strain. A person's best defense against this and all infections is to practice regular hand washing, especially when around young children. More than 80% of the adult population has been exposed to CMV in the past. If a woman has lab work that suggests an infection during early pregnancy then she will be referred for additional counseling by a Maternal Fetal Medicine specialist who will review her labs and make additional recommendations.

There is no way to treat CMV infections and it is important to know that a CMV infection in the mother does not guarantee that the baby will develop an infection in utero. Transmission of CMV to the baby if the mother acquires the infection during pregnancy ranges between 30-70%. If the baby does acquire a CMV infection in utero then there is a 90% chance that the baby will not experience any sequela (long-term effects). Unfortunately, in the remaining 10% of babies that acquire CMV in utero, there can be complications including deafness and developmental delays.

DOMESTIC VIOLENCE

Domestic violence is one of America's most widespread health problems. Most abused adults are women and they are from all economic, racial, and religious groups. Abuse is defined as forceful, controlling behavior that makes a woman do what the abuser wants without regard to her rights, body, or health. A woman is abused if she has had intentional physical or emotional harm done to her by a man with whom she is or has been in an intimate relationship. Since pregnancy is a time of increased stress, abuse often begins or increases during pregnancy. An abuser is more likely to direct his blows to a woman's breast and abdomen during pregnancy and therefore place both mother and fetus at risk.

Abuse occurs in a fairly typical pattern that occurs in three phases and unless a woman breaks this cycle, it will typically become more frequent and severe over time. The first phase involves tension and during this phase the woman will often try to please her partner unsuccessfully. The second phase involves violent acts which can include shoving, hitting, kicking, choking, and threats with weapons. The third phase occurs when the abuser shows shame and makes promises that he will change his abusive pattern. Sometimes he will blame the violence on the woman because she said or did something that angered him and made him resort to violence. This is sometimes referred to as a "honeymoon" phase.

If you are abused it is important to tell someone you trust so that you can contact them in case you need to leave a dangerous situation. It is important to remember that no one deserves to be abused. We strongly recommend that you contact a clergy member or crisis center for help. It is also recommended that you have an exit plan to get you and your children out of a dangerous situation quickly if necessary. There are shelters for abused women. You also need to remember that physical abuse is a crime and you should consider filing a police report when abuse has occurred in case you want to file charges. Ultimately you will need to decide what your plans are for the relationship on a long-term basis. Counseling can be very helpful as you make your decisions. Please discuss your situation with your doctor or nurse practitioner and let us offer you some resources and support:

Resources:	ALIVE (Alternatives to Living in Violent Environments)	314-993-2777
	Crime Victims Advocacy Center	314-664-6699
	Safe Connections Crisis Hotline (immediate needs)	314-531-2003
	Safe Connections Services (free counseling, resources, etc.)	314-646-7500
	Women's Safe House	314-772-4535

GROUP B STREP

Group B streptococcus is a type of bacteria that can cause serious illness and death in newborns. Until recent prevention efforts, hundreds of babies died from group B strep every year. This type of bacteria can cause illness in adults, especially the elderly, but it is most common in newborns. Group B strep is the most common cause of sepsis (blood infection) and meningitis (infection of the fluid and lining around the brain) in newborns. Most newborn disease happens within the first week of life. In 2001, there were 1,700 early onset cases in the United States. Most early onset group B strep disease can be prevented by giving antibiotics through a woman's IV line during labor if she is a carrier of group B strep bacteria. Antibiotics during labor are effective at protecting your baby because they greatly reduce the amount of bacteria the baby is exposed to during labor.

Anyone can be a "carrier" for group B strep. The bacteria are found in the gastrointestinal tract and may move into the vagina and/or rectum. It is NOT a sexually transmitted disease. About 1 in 4 women carry the bacteria. Most women would never have symptoms or know that they had these bacteria without a test during pregnancy. Since group B strep bacteria can be passed from a mother who is a carrier of the bacteria to her baby during labor, women are tested toward the end of pregnancy. Because they naturally live in the gut, the bacteria often come back after antibiotic treatment. For this reason, antibiotics before labor are not a good way to get rid of group B strep. When presenting to the hospital in labor, it is especially important to remind the hospital staff if you are a group B strep carrier so that antibiotics can be initiated. For more information, go to the Centers for Disease Control website at www.cdc.gov/groupbstrep.

HERPES

Herpes simplex virus infection of the genitals is one of the most common sexually transmitted infections. Approximately 45 million adolescents and adults have been infected with genital herpes so we have many patients that are pregnant with a history of herpes and there is a lot of research regarding the safest way to manage patients during pregnancy if they experience herpes outbreaks. It is important to inform your physician if either you or your partner has a history of genital herpes or if you develop any "sores" on your genitals during the course of your pregnancy.

Our primary concern as relates to your pregnancy is the risk of transmission to your newborn during the delivery process. The most high-risk situation occurs when a mother is experiencing her first ever outbreak (called her primary infection) at the time that she goes into labor. A woman who has her first herpes outbreak during any point of pregnancy has a much higher risk of transmitting herpes to her baby because her body has not had time to develop antibodies (immune cells) against herpes. Antibodies do cross the placenta to the baby to offer the baby protection against infection. A woman who has had outbreaks before pregnancy has had time to develop immune cells that will protect the baby and her risk of delivering a baby infected with herpes is much lower because of that protective effect. A woman with a primary outbreak during pregnancy is at increased risk for preterm delivery. There are women who can have a primary outbreak and not be aware of its existence. It is for this reason that it is important to let us know if your partner has a history of herpes.

If your partner has a history of genital herpes then we will usually recommend blood work earlier in pregnancy to determine whether you have been exposed to herpes. If you do not have evidence of prior exposure then we recommend that you abstain from genital contact, including intercourse (even with a condom) during the last trimester of your pregnancy. Couples in whom the male partner has a history of herpes need to be aware that it is possible to transmit the herpes virus even at times when there is not an active lesion. It is known that a person who carries the herpes virus does "shed" viral particles at random times and this is the mechanism by which the virus is transmitted in the absence of an active sore/lesion.

Multiple studies have documented that women with a history of genital herpes can significantly decrease their risk of having a lesion at the time of labor if they take the antiviral medication acyclovir during the last month of pregnancy. Acyclovir is marketed under the brand names Valtrex and Famvir. As an example, a recent study evaluating women who had a history of genital herpes documented that there was a 15% risk of having a herpes lesion at the time of labor in women who were taking a placebo ("sugar pill") medication. In women taking acyclovir during the last month of pregnancy there was a reduction to 5% risk of outbreak at the time of labor. Our physicians recommend that pregnant women with a history of genital herpes take a daily dose of acyclovir beginning at 36 weeks gestation. The medications Valtrex and Famvir are category B medications and numerous studies have demonstrated the safety of their use during pregnancy.

If you have a history of genital herpes it is important that you inform the admitting nurse at the hospital when you are in labor and that you have an examination of the outer genitals, vagina and cervix upon admission to confirm that there are no apparent lesions. If you have a herpes lesion or prodromal symptoms (some women have recognizable symptoms such as tingling just before an outbreak), you will require a cesarean section to minimize the risk of transmission to your baby.

MULTIPLE GESTATION

Twin and triplet pregnancies are an added stress to a woman's body. Since early labor and prematurity are common, women pregnant with twins or triplets are carefully monitored. Bed rest is often suggested to maintain the pregnancy. You will be in our office frequently if you are the mother of multiples and you will be well counseled regarding the things to watch for during pregnancy.

PARVOVIRUS B-19

If you report to us that you are a childcare worker then we will test you for immunity to Parvovirus B-19 with your early blood work. Parvovirus is a very common virus and is the cause of the common childhood infection called Fifth Disease (also called "slapped cheek syndrome" because it causes a facial rash). Transmission to the fetus is very unlikely but if we have reason to believe that your infection has occurred early in pregnancy then we will refer you to a Maternal Fetal Medicine specialist for additional counseling and testing. Good hand washing technique is your best defense against all infections during pregnancy!

PLACENTA PREVIA

This occurs when the placenta has implanted low in the uterus, partially or completely over the cervix. If the placenta overlies the cervical opening then a vaginal delivery cannot occur and a cesarean section will be necessary. Women with placenta previa are at high risk for vaginal bleeding if the cervix starts to dilate and occasionally a preterm delivery is required. Most women with placenta previa will have restricted activity during the latter part of pregnancy. A placenta that is "low" does not carry the same risk but is watched closely throughout pregnancy to confirm that it is not in front of the cervical opening as you reach the end of your pregnancy. We will let you know if your placenta is abnormally positioned.

POSTPARTUM DEPRESSION

Most women have clear expectations of how things will be as a new mother and while having a baby is a joyous time, it is also extremely stressful. There are many days as a new mother when you will count yourself lucky to take a shower by 5:00 p.m. Your sleep cycle is altered and the demands of a baby are merciless. It does help to be as realistic in your expectations as possible and to recognize that the schedule will improve with time. It is extremely common for women to experience some symptoms of depression during their pregnancy or during the postpartum period. Approximately 15% of women will have an episode of major depression during pregnancy or postpartum up to the child's first birthday. The risk is even higher if the woman is an adolescent. If a woman has had one episode of depression in her past then her risk of depression during pregnancy or postpartum is as high as 50%. If a woman has had two or more episodes of depression in her past then there is a 70% chance that she will experience a recurrence of depression during pregnancy or in the year after delivery.

Symptoms of depression include a sense of guilt or worthlessness, lack of interest in daily life, loss of energy, appetite, and impaired sleep patterns. Severe depression can interfere with the bonding between a mother and baby and can lead to thoughts of suicide. The symptoms of depression are much more extreme than the typical postpartum "blues" that almost all women experience. With the postpartum "blues" you will see an increase in emotions (e.g. crying during commercials or certain songs on the radio).

Depression is caused by a chemical imbalance in the brain and needs to be treated with medication and sometimes supplemented by visits with a mental health professional. Please make certain that your doctor is aware of any past episodes of depression so that she may discuss your history with you and help to determine a plan for the postpartum time period when risk of recurrence is high. Antidepressants are well studied during pregnancy and breastfeeding. The class of drugs known as SSRIs (brand names include Prozac, Paxil, Zoloft, Celexa) has not been linked to any physical birth defects. Data on children whose mothers took SSRIs during pregnancy and breastfeeding is available all the way to high school and there do not seem to be any documented ill effects on behavior or cognitive development.

PRE-ECLAMPSIA

"Toxemia" and "pregnancy-induced hypertension (PIH)" are other names for this condition which usually occurs after 20 weeks of pregnancy. The cause of this disease is currently unknown. We do know that pre-eclampsia affects only pregnant women and that shortly after the baby's delivery, the disease goes away. First-time mothers (primigravidas), African-American women, and women under 20 or over 35 are at greater risk for developing pre-eclampsia.

Signs of Pre-Eclampsia include:

- High blood pressure (hypertension)
- Sudden increase in weight
- Protein in the urine
- Severe headache
- Right upper abdominal pain

Pre-eclampsia may begin without any noticeable symptoms. An increase in blood pressure can affect the circulation to the placenta. This then affects the oxygen and food supply to your baby. Therefore, it is very important to seek early and regular prenatal care so we can detect and monitor any signs of pre-eclampsia. Most patients that develop pre-eclampsia will require induction of labor at some point before 37-38 weeks gestation.

Many patients with pre-eclampsia are managed with restricted activities and close observation in an effort to avoid a preterm delivery. However, if pre-eclampsia has been diagnosed and your cervix is favorable for labor, we will advise induction of labor by 37-38 weeks. While this is somewhat before your due date of 40 weeks, it is felt by experts that the potential risks of worsening pre-eclampsia outweigh the small risks of a slightly early delivery.

If you have been diagnosed with high blood pressure or pre-eclampsia and your activity has been restricted then your instructions are as follows:

- Bed rest on your side most of the day—only get up to eat, shower or go to the bathroom.
- Be seen in the office at least once a week.
- Weigh yourself daily at home. If you gain more than two pounds from one day to the next, please call us. Sudden weight gain from an increase in fluid retention can be an indicator of progression of the disease and we will want you to be evaluated at the office or in the hospital.
- Check your blood pressure daily. You can purchase a battery-powered blood pressure machine at your local pharmacy. Make certain that it fits over your upper arm, not your fingers or forearm. Please bring the machine with you to your appointment and check it against our reading when the medical assistant checks your blood pressure so that you know that your machine and our readings are within close range to one another. Call us if the systolic (upper) value is greater than 160 or the diastolic (lower) value is greater than 90 unless we have given you different parameters.
- East a low salt, high protein diet and drink 6-8 glasses of clear fluids a day—no pizza, fast food or chips!
- Have someone take you to the hospital if you get a severe headache, severe abdominal pain, or vaginal bleeding. Don't take time to call us—just have someone bring you to the hospital (or call 911).

PREMATURE LABOR

Premature labor is a condition in which uterine contractions cause the cervix to open early which may result in the birth of a premature baby. This is seen between the 20th and 37th week of pregnancy. After 37 weeks, the baby's lungs are mature. The specific causes of premature labor are unknown; however, there are certain factors that may increase your chance for premature labor. These include:

- Previous premature labor or birth
- Cervical procedures (Cone or LEEP)
- DES exposure
- Heavy cigarette smoking
- Pregnancy involving twins or triplets
- Repeat first-trimester abortions
- Urinary tract infections
- Vaginal infections such as "gardnerella" or "bacterial vaginosis"

Some uterine contractions are normal during pregnancy (please refer to the preceding segment regarding contractions), however, frequent uterine contractions (every 10 minutes or more for one hour) before the 37th week of pregnancy are not normal. Uterine contractions can be subtle and hard to recognize.

If you notice menstrual-like cramping, low, dull backache, a sudden increase in vaginal discharge, or pelvic pressure (feeling like the baby is pushing out), call us or go directly to Labor and Delivery at the hospital where you plan to deliver your baby. **DO NOT WAIT FOR THESE SIGNS TO GO AWAY.** Detecting premature labor early can prevent the birth of a premature baby.

If you have been diagnosed with preterm labor or contractions and have been placed at rest then your instructions are as follows:

- Rest as much as possible on one side or the other.
- Keep your bladder empty (every one to two hours while awake—a full bladder irritates the uterus and can cause contractions).
- No strenuous activity, no lifting, and no household chores.
- Do not have sex.
- Drink at least 6-8 glasses of water or clear liquids a day.
- **Come to Labor and Delivery immediately if you have vaginal bleeding, amniotic fluid leakage, fever, smelly vaginal discharge, or contractions at least every seven minutes.**

TOXOPLASMOSIS

Toxoplasmosis is a rare condition in the United States, with an incidence of 1 in 1,000 pregnant women. Toxoplasmosis is transmitted in undercooked meat or via contact with contaminated soil (outdoor cats can track it indoors on their feet or body). If you are the owner of one or more cats then we will screen you for recent toxoplasmosis infection and for immunity with your early blood work.

It is best to avoid undercooked meat during pregnancy and it is best to have your partner change your cat's litter box during pregnancy. You should wash your hands after handling your cat and you should wear gloves if you need to change the litter box. You should also wear gloves when working in the garden. While transmission of toxoplasmosis to a baby in utero is not common, it can cause serious sequela such as miscarriage and anemia in the fetus. The following guidelines for pregnant women from the CDC should be followed:

- Wear gloves when gardening or handling soil. Cats are the primary hosts for toxoplasmosis and pass the parasite in their feces. Cats often use the garden as their litter box. After working outside, wash hands thoroughly with soap and water.
- When preparing raw meat, wash any cutting boards, sinks, knives and other utensils that might have touched the raw meat thoroughly with hot water and soap. After handling the raw meat, wash hands thoroughly.
- Cook all meat thoroughly. This means until the meat reaches an internal temperature of 160° F or is no longer pink in the center. Make it a point not to taste meat until it has been thoroughly cooked.
- If you do not have a cat, do not bring a new one into your house if it is one that may have spent time outdoors and may have been fed raw meat.
- Have somebody who is NOT pregnant and who is healthy change the cat litter box every day. If this is not possible, wear gloves when changing the litter box. It is absolutely necessary that the box be changed daily since it takes several days after being passed in the cat's feces for the parasite to become infectious.
- Keep your cat indoors thus not allowing it to have access to wild birds and rodents. Feed your cat dry or canned cat food—never raw meat!
- It is worth noting that if a cat becomes infected with toxoplasma gondii (the parasite that causes toxoplasmosis), it passes the parasite into its feces for only a few weeks after infection. Usually cats that are infected do not exhibit any symptoms.

URINARY TRACT INFECTIONS (UTI)

If you are diagnosed with a UTI:

- Drink at least 6-8 glasses of water a day.
- Empty your bladder frequently.
- Drink citrus juices like orange juice, grapefruit juice, cranberry juice, or take vitamin C, 500 mg. per day.
- Urinate before and after sex, and do not have sex while being treated for the infection.
- Wear cotton underwear and avoid pads.
- Avoid tight clothing.
- Always wipe front to back.
- Take your antibiotics until they are gone—don't stop them when you feel better!

VAGINAL BIRTH AFTER CESAREAN SECTION (VBAC)

If you had a C-section at the time of your last delivery, then you might be a candidate for a vaginal birth with this pregnancy. We will provide you with an informed consent form that you need to review and sign. Your doctor can answer any questions that you might have about the pros and cons of repeat C-section versus a trial of labor. In order to even consider a trial of labor with this pregnancy you must meet several requirements:

- Transverse uterine incision (if we did not perform your C-section then you will need to provide us with a copy of the operative report from your previous doctor or hospital so that we may review it to confirm the type of uterine incision that was performed).
- Adequate pelvis (your doctor will evaluate your pelvis during examinations).
- No more than one previous C-section (the risk of uterine rupture is much higher if you have had two or more cesarean deliveries).
- The baby must be vertex (head down) at term.
- You desire to undergo a trial of labor and understand the risks to you and the baby.
- You must go into labor on your own. We will not use any cervical ripening (Cervidil) or medication (pitocin) that assists you to have contractions.

The most feared complication of labor in a woman undergoing a VBAC is rupture of the scar of the uterus. There is no reliable way to predict when or if uterine rupture will occur but if it does occur it can lead to permanent injury or death of the baby and/or mother. Unfortunately a uterine rupture can occur so quickly that even if a woman is being monitored on Labor and Delivery in the hospital and uterine rupture is suspected, it may not be possible to intervene quickly enough to save the baby's life. Rupture of the uterus is NOT common but the risk is approximately 1 in 200 women.

When determining whether you want to repeat your C-section or have a trial of labor for an attempted VBAC, it is important to consider the factors that were involved in your first C-section. If you reached complete cervical dilation (10 centimeters) and then required a C-section, your chance of a successful vaginal delivery this time is approximately 15%. If you required a C-section for fetal distress or failure to dilate then your chance for a successful vaginal delivery this time ranges between 50-70%. If you have had a previous C-section, please make certain that we have provided you with our consent form regarding VBAC sometime during your first several visits.

CORD BLOOD DONATION

In the past, umbilical cord blood was viewed as having no future use and it was routinely discarded after delivery. The blood that is present within the umbilical cord and placenta is referred to as "umbilical cord blood stem cells" and it is becoming a precious commodity. You need to be aware that the cord blood from your delivery will absolutely NOT be harvested without your permission. Furthermore, if you desire to have the cord blood collected for either public or private use then you will need to make arrangements well in advance of your delivery. Blood is often drawn out of the umbilical cord after delivery in small amounts to allow us to determine the baby's blood type or acid-base status at delivery but this is the same process that is performed when you have blood drawn out of your arm for lab work. It is discarded by the hospital after the specific testing is performed. If you decide to have umbilical cord blood harvested for public donation, we will not charge a collection fee. Umbilical cord blood is a non-controversial source of stem cells. Both the President and the Pope approve the use of umbilical cord blood for transplantation and research. (Cardinal Glennon Hospital sponsors the second largest cord blood bank in the world!)

Umbilical cord blood is a concentrated source of "stem" cells. Stem cells are the precursors to multiple blood cells including red blood cells, white blood cells, and platelets. Our bone marrow contains stem cells that differentiate into one of these types of cells. The umbilical cord blood contains ten times more stem cells than bone marrow. Two to four ounces of cord blood could contain enough stem cells to reconstitute the bone marrow of a sick child. Because the cord blood stem cells are less developed than future marrow cells, they are less likely to cause an immune reaction (rejection) if transplanted and the match does not need to be as precise between donor and recipient as it does in bone marrow transplants.

More than 2,000 cord blood transplants have been performed worldwide since 1988, mainly in children with leukemia. The cord blood stem cells are transplanted into the bone marrow of the recipient and transplants are helpful in patients with "blood cancers" such as leukemia or lymphoma. Transplants can also be helpful in patients with other malignancies that require rescue therapy after bone marrow ablation. They can also help repair abnormal bone marrow related to certain rare metabolic abnormalities (such as severe combined immunodeficiency disease and adenosine deaminase deficiency) or congenital diseases (such as sickle cell anemia and thalassemia). There is research looking for additional uses for stem cells. The uses are somewhat limited though because umbilical cord stem cells are only destined to become red blood cells, white blood cells, and platelets.

How is cord blood collected? Cord blood collection is safe, simple, and fast. If you have arranged for donation either publicly (you are donating the blood to be used for other people) or privately (you are donating the blood to be stored only for your family's future use) there will be a kit supplied by the cord blood bank that we will use at the time of delivery after the baby has delivered and the cord has been clamped. If you are donating publicly, the cord blood center will send a kit to Labor and Delivery at the hospital that you designate. There is no charge to you for public donation. If you are donating and storing the cord blood privately then you will bring your kit with you to the hospital when you are in labor and you will contact their designated courier service after delivery to pick up your donation and take it to their processing/storage site. On average, patients will pay up to $1,800 for processing and the first year of storage and then $100-$200 per year thereafter for storage fees. This is becoming a competitive market, however, so check current fees!

How likely is it that our family would need our own cord blood? It is estimated that only 0.04% (1 in 2,500) of units stored for a child's exclusive use would ever be utilized. Patients who require a bone marrow transplant for genetic problems would not be able to use their own stem cells. It is also thought that children with leukemia, which is the most common pediatric malignancy, would be better treated with someone else's stem cells since the child's own stem cells probably contain leukemic cells. **Another issue that is not resolved is the length of time that cells can be stored and still be healthy.**

If you decide to bank your cord blood privately, you should research the company's literature and their websites and ask a few questions. For example, will they know whether a collection provides a good yield? What happens if it doesn't? Several private cord blood banks are listed below but this does not mean that we in any way endorse these companies or programs nor can we guarantee that a particular amount of cord blood can be collected at your delivery. Sometimes there is very little blood in the umbilical cord and if there is a critical situation during the delivery, we will direct our attention to keeping you and your baby healthy, not the collection of umbilical blood.

If you decide to bank your cord blood publicly, you can contact St. Louis Cord Blood Bank at Cardinal Glennon Children's Hospital and arrange for a kit to be sent to the hospital for your delivery. You must pre-register prior to your delivery. You may contact the bank at **314-268-2787** or **888-453-CORD**.

In summary, neither the American College of Obstetricians and Gynecologists nor the American Academy of Pediatrics recommends private cord blood banking for a healthy family with healthy children. Private storage of stem cells should be considered when another child in the family has a disease treatable with bone marrow transplant or if there is a family history of such illness. Otherwise, it may be more sensible to ensure that public cord cell banks are well stocked for people who need bone marrow transplants now. This is a very personal decision for a family and there is no "right" or "wrong" decision when it comes to cord blood banking.

WHEN TO SEEK MEDICAL ADVICE

WARNING SIGNS—CALL DAY OR NIGHT (**Exchange phone number: 314-388-6595)**

- Heavy vaginal bleeding that is as heavy as a period. Go to the hospital!
- Labor pains before 37 weeks gestation. This is three weeks before your due date. If they are regular and closer than 10 minutes apart for an hour, go to the hospital—don't waste time calling the exchange! The hospital will notify us of your arrival.
- Leakage of fluid from your vagina (amniotic fluid) at any time in the pregnancy. To determine this you must go to Labor and Delivery—it cannot be evaluated over the phone.
- Sudden onset of swelling
- Severe headache that will not resolve with Tylenol
- Blurred vision and spots before your eyes
- Dizziness and fainting
- Painful urination
- Fever accompanied by abdominal pain
- Decreased fetal movement or less than 10 movements in two hours after 28 weeks
- Vomiting and/or diarrhea for more than 24 hours

GO TO THE HOSPITAL IMMEDIATELY IF

- You bleed vaginally (the amount being more than a period)
- Your contractions are painful, regular, and closer than seven minutes apart for one to two hours if you have never had a baby or closer than 10 minutes apart for one hour if you HAVE had a baby before.
- Your bag of water breaks, even if you are not having contractions.
- Your abdomen stays hard and very painful BETWEEN contractions.
- If you don't feel your baby move for an extended period of time. You should feel fetal movement at least 6-10 times in an hour after a meal.
- You have a seizure—call 911
- You are more than four weeks from your due date and you have contractions closer than every 10 minutes for one hour.

YOUR BABY'S DEVELOPMENT

CONCEPTION- 4 WEEKS

After intercourse, the woman's egg and the man's sperm join and fertilization occurs. The embryo then starts dividing and traveling from the fallopian tube down to the uterus. Here it attaches itself to the wall of the uterus. The placenta starts developing and will provide oxygen and nutrients for the growing fetus until delivery. By four weeks, the heart and blood circulation develop. The embryo is now one-fifth of an inch in length.

5-10 WEEKS

Limb buds that will develop into arms, hands, legs and feet have started to form. The brain is starting to subdivide. Eyes begin to take shape, as well as external ears. At 8 weeks, the fetus is about one inch long. It is looking more human-like. The fetus is moving around but this movement is not felt by the mother. By the end of 10 weeks, external genitals are developing.

12-14 WEEKS

By the 12th week, all essential organ systems are formed. Swallowing has started, as well as thumb-sucking. Sucking is a reflex that begins long before birth. Some babies are such vigorous suckers that they are born with a small callus on their upper lip. Fetal heart rate can be heard now. The fetus is about 3 inches long and weighs approximately one ounce.

16-20 WEEKS

All organ systems and structures have been developed and now a period of rapid growth starts. You will feel the baby's movement, which is called quickening. This is often felt as light fluttering. Your baby is about 6 inches long from head to rump.

24 WEEKS

Your baby weighs between 450-750 grams (1 lb. to 1 lb. 10 oz.). Its length from head to rump is about 9 inches. Although your baby is growing, its body is still very lean. The skin is wrinkled and red because the baby doesn't have much body fat yet and the blood vessels are close to the surface of the skin. What else is happening? The baby starts to develop lanugo. This is fine, downy hair that grows all over the body. Most of the lanugo will be shed by the time the baby reaches full term. Also, the baby's eyes are fairly well developed now and remain closed. Your baby is also growing eyebrows and fingernails. A baby born at this gestational age might be able to survive with a significant amount of intensive care in a medical facility.

26 WEEKS

The baby now weighs between 750-850 grams (1 lb. 7 oz. to 1 lb. 14 oz.) and is 10 inches long from head to rump—even longer if you could stretch out its little legs. Its body proportions and posture are changing. All along the head has been quite large in relation to the rest of the body. Now the body growth is catching up. The baby's head is still the largest part but proportions closely resemble those the baby will have at birth. Other developments are going on. Here are some we know most about:

- Meconium, the tar-colored stool that makes up the baby's first bowel movement, starts to fill the intestines.
- Vernix is being produced. Vernix looks and feels like cream cheese. It covers the baby's body, protecting the skin from irritation due to minerals in the amniotic fluid. Some babies are born with vernix covering their bodies, and others only have it in the creases or folds of their skin.
- Eyelashes and scalp hair begin to grow.
- Your baby begins to develop a hand grip, which will be very strong by the end of the pregnancy.

As yet, there is very little body fat, so the baby still looks skinny, red and wrinkled. Aside from helping its appearance, fat is also the body's insulator against cold. Without it, the baby would have difficulty controlling its temperature outside the womb. Right now, you are your baby's best incubator.

28 WEEKS

Now the baby weighs between 1,000 - 2,000 grams (2 lb. 3 oz. to 2 lb. 10 oz.). It measures about 10 1/4 inches from head to rump. The baby's appearance is much the same (with the exception of a little more hair) but there have been other changes. The baby's senses and reflexes are more sophisticated. The eyelids move freely now and the baby can blink. Soon its eyes will become sensitive to light.

The baby reacts to sounds, too. A loud noise can cause it to be startled. "Startling" is another of the baby's reflexes that begins long before birth. The baby seems to "jerk" in response to loud noises or quick movements. You will see your baby do this many times after he or she is born.

Although development continues steadily, the baby is not yet ready to live outside the womb. It still doesn't have enough fat to provide adequate protection from the cold. Defenses against infection are not yet mature and there is not enough lubrication in the lungs to allow free breathing. Your baby still needs you to provide warmth, protection from infection, and oxygen.

30 WEEKS

Your baby is getting bigger and is now about 11 inches from head to rump (and gaining an average of ½ lb. per week)! It weighs approximately 900 - 1,600 grams (2 lb. to 3 lb. 8 oz.). Up until now, the baby's weight has been fairly predictable; however, from the 30th week on, the baby's growth will be more individualized. How much the baby grows varies with heredity, sex, health and nutrition, among other factors. Your baby might weigh a whole pound and half more or less than another 30 week fetus and both could be considered "normal" weight.

Now that your baby is larger, it isn't as easy for it to move about. It will stretch and kick but no longer has enough room to do wild somersaults. The kicks and movements that you do feel are good signs. If you are concerned about a sudden change in the amount of your baby's activity, please contact us. (You should be performing daily fetal movement assessment as outlined previously in this book.)

As the baby grows larger, it also matures. For example, the brain is developed enough now to start controlling "survival skills" such as rhythmic breathing, swallowing, and body temperature. These are all functions that the baby doesn't need now but that are necessary to live once the umbilical cord is cut. The brain begins to prepare the body for birth.

32 WEEKS

Your baby weighs approximately 1,200 - 2,100 grams (2 lb. 10 oz. to 4 lb. 10 oz.), and is 12 inches long from head to rump. Finally, there is enough body fat under the baby's skin to make it appear pink and smooth. The lanugo (fine, downy body hair) on the skin is beginning to disappear. If the baby was born now there would probably be lanugo only on the back and shoulders. The baby's appearance keeps changing. Now small nipple buds appear on the chest and nails have grown to the ends of the fingers. The baby's brain is more developed. There is greater control of breathing movement, sucking, and temperature. The baby even begins to coordinate sucking and swallowing as it drinks small amounts of amniotic fluid. As delicate and intricate nerve connections are formed in the brain, the senses begin to function.

TASTE	There are lots of taste buds on the tongue (many will disappear before birth). The baby could easily distinguish between sweet and sour flavors now.
SIGHT	Although the baby's vision is blurred right now, it can sense the difference between light and dark. By the time the baby is full term, it will distinguish shapes and bright colors, too.
SOUND	Your baby hears you and your working body. The baby can hear your stomach rumble and your heart beat, as well as loud voices and noises outside the womb. Talk to your baby and have your partner and family talk to the baby. Even now, it is a way of beginning the very precious attachment between the baby and family.

34 WEEKS

The baby weighs between 1,500 - 2,700 grams (3 lb. 5 oz. to 5 lb. 15 oz.) and is gaining up to a half pound per week. Your baby measures approximately 12 3/4 inches from head to rump but certainly is longer from head to foot—perhaps 3 to 5 inches more can be added on to estimated total length. If you could inspect the feet, you would see fine, little lines on the bottom called sole creases. They lightly indent the skin and get deeper as the weeks go by. Soon they will be well defined and give the baby a very distinctive footprint.

The baby's reflexes have become more refined. Reflexes are built-in behaviors that aid in the adjustment to life outside the womb. The baby has a startle reflex, a grasping reflex, rooting and sucking reflexes, and many others. The rooting and sucking reflexes will help the baby eat. Eating is something the baby has never done because all of its nutrition has come through the umbilical cord. Eating would be more difficult if the baby had no familiar movements that would help get milk out of the breast or bottle so babies develop sucking behavior while they are in the uterus to help them when they have to learn how to eat.

36 WEEKS

It is likely that the baby has put on almost a whole pound in the last two weeks and weighs between 1,850-3,200 grams (4 lb. 1 oz. to 7 lb. 1 oz.). Your baby is growing longer—it is about 13 ½ inches from head to rump. The added weight has made its arms and legs appear chubby. Skin is pinker and smoother because body fat has filled in many of the wrinkles. Your baby still has lots of vernix but the lanugo is almost gone. By now nails probably reach the ends of the baby's fingers and toes. Lung maturity will vary from baby to baby; however, most babies could breathe on their own at this point.

38-40 WEEKS

By now the average baby weighs 3,000-3,200 grams (6 lb. 10 oz. to 7 lb. 1 oz.). Head to rump length is about 14 ½ inches but 19-21 inches from head to toe. Everything is maturing and growing. Soon the baby will be too big to carry inside of you. The baby's body is plumper, fingernails have grown beyond the fingertips, and hair has grown. Most babies are mature now. The rooting and sucking reflexes become important later when the baby begins to eat. While in utero, the baby is fed through the umbilical cord.

WHAT TO EXPECT AT THE HOSPITAL

If you go to Mercy Hospital for evaluation during pregnancy you should proceed to the Maternity Welcome Center just inside the Main Entrance to the hospital. If you go to Missouri Baptist Medical Center for evaluation of a problem prior to 20 weeks gestation you should proceed to the Emergency Department. If you are over 20 weeks gestation then it is reasonable to proceed to the Birthing Unit/Labor and Delivery in Building D. The physician on call in our group will be notified by the ER or Labor Unit and orders will be given by us for your evaluation.

The physician on call in our group will be notified upon your arrival and we will provide orders related to your evaluation. If you are full term and in labor, an IV will be started and you will be placed on the monitor to observe your baby's heart rate pattern. If your bag is ruptured or you are having trouble, you will usually be confined to bed. If you are at term and in early labor, you will be allowed and encouraged to walk for periods of time.

We support every woman's preference with respect to childbirth options. We are here to provide medical guidance and support during this exciting time. If you desire an epidural, it can be placed once you are in active labor (more than 3-4 cm.) and actively contracting. After it is placed, you will be on the monitor and watched carefully. You will remain in bed once your epidural is placed. Your nurse will be in contact with our physician on a regular basis and we will utilize pitocin and/or internal monitors only if necessary. The physician will be called to come in to the hospital when you are ready to deliver or in the event of an emergency situation. In the event that an emergency cesarean section is required, an obstetrician at the hospital will initiate your delivery under our order while we are en route to the hospital. Fortunately, this is an extremely rare event.

You may have two people in the room for a vaginal delivery or one person in the operating room if you are having a cesarean section. Cameras are welcomed even in the C-section room! A video camera is allowed in the delivery room as long as it is tastefully done although most hospitals will not allow you to film a cesarean section. In a cesarean section you may use your video camera to tape your newborn as the baby is delivered.

An older child who is well-prepared may be one of your coaches but you should give a lot of thought as to whether the child will be able to handle seeing a loved one in pain (even with an epidural there can be a lot of discomfort). You should also consider that there is generally a lot of body fluid present at delivery, including blood. If the goal is to make an older child feel more involved in the birth process, consider allowing him/her to be the first person to join you in the delivery room after delivery and ask other family members to wait just a little longer. The first hour after a delivery can be a very special bonding time for you and your family.

THE VAGINAL DELIVERY PROCESS

Your baby will be monitored upon arrival to the hospital. If the fetal heart rate tracing is reassuring then you can opt for intermittent monitoring during your labor. If there is any concern regarding your baby's fetal heart rate tracing, or if pitocin is required to stimulate your contractions, then monitoring of the baby's heart rate will be continuous. IV fluids or a hep-lock for the IV line must be in place during labor. The presence of an IV becomes critical if your baby is in distress and you require an emergency cesarean section. The IV is used to provide you with rapid anesthesia. Valuable time would be wasted trying to start an IV if it was not already in place when fetal distress was detected.

We do not routinely shave or give our patients enemas because they do not assist in the labor process. If you have an epidural, you may need to have a Foley catheter in place because your bladder will not empty normally. The catheter is generally removed just before delivery. We do not perform episiotomy for delivery.

If your delivery is uncomplicated, then we will place the baby on your chest just after delivery and the nurse will help you dry your baby on your chest. We usually ask your partner or coach if they want to cut the umbilical cord! After a little while on your chest, the nurse will take your baby to the baby warmer that is in the room and monitor the baby's temperature and vital signs. While your baby is having routine assessments performed, the physician will be delivering your placenta/afterbirth and repairing any vaginal tears. The stitches that are used to repair lacerations will dissolve on their own over the course of several weeks.

The baby will be weighed shortly after delivery. Once the nurse has finished assessing and weighing the baby and your repair work is completed, then you will be ready to nurse the baby if you desire. The nursing staff will be happy to assist you if you are new to breast feeding. You are welcome to invite family members into your room at this time.

SIGNS OF LABOR

Labor is dilation of your cervix and descent of the baby. Your cervix progresses from 0-100% effaced (thinned) and 0-10 centimeters dilated as labor progresses. In addition, the baby moves from -3 station (high inside your pelvis) to +3 at which time the head can be seen (crowning). As labor progresses, your contractions will become more frequent and more painful. You will not push until you are completely dilated (10 centimeters). The pushing part of the labor is called the second stage of labor and can last two to three hours. Signs of labor include:

- Breaking your bag of water.
- Contractions that are painful and occur closer together than every 5 minutes (timed from the start of one contraction to the start of another), the contraction itself lasts close to 1 minute, and this frequency has been going on for at least 1 hour. This is the "5-1-1" rule.
- Contractions that get closer and closer together, and stronger quickly.

BLOODY SHOW

Sometimes women pass a yellow, green or blood-tinged mucous before they start labor but that does not mean that labor will occur right away. This can happen up to two weeks before delivery so unless you are also having contractions or have ruptured your amniotic fluid, there is no need to come to the hospital or call. The passage of mucous or bloody show is an indication that your cervix is softening and perhaps dilating slightly. Watch for signs of labor!

FALSE LABOR

False labor is the occurrence of labor pains that are not regular or occur in short episodes so that they do not dilate the cervix. Sometimes they are regular but are not strong enough to cause cervical change. It is as if your uterus is practicing for the big day and is preparing itself. If you think you are in labor, go to the hospital to be checked but if you are in false labor, don't be upset—most women have gone through this and it is no disgrace to be sent home from the hospital if you are in false labor.

ANESTHESIA FOR LABOR AND DELIVERY

If at any time during your labor you require pain relief, don't be afraid to tell the nurse. There are several kinds of anesthesia we can offer you. You can choose to have an epidural, which is actually a block that numbs you from the waist down and lasts throughout your labor and delivery. It is an excellent form of anesthesia and can make your labor very pleasant. It is given to you by an anesthesiologist by placing a catheter (soft tube) in your lower back. This catheter stays there through your whole labor and is removed after your baby is born. Medicine can be given through the tube without much difficulty whenever you start to hurt during labor. You will still be able to move your legs and push to deliver your baby. It is also a safe method of anesthesia.

If you will be having natural childbirth it is still a good idea to become familiar with epidural pain relief in the event that a cesarean section is required.

INDUCTION OF LABOR

Medical induction is the procedure of starting labor with medicines. Indications for this are:

- Medical complications of pregnancy that require delivery
- Large babies
- Overdue babies to avoid the problems incurred in being overdue
- Delivery if the baby is not growing or doing well inside the uterus
- If you live more than one hour away from the hospital or have a history of fast labors

Induction is done in one of two ways. The most common approach is to start an IV and give the medication pitocin that causes the uterus to contract. This is effective if the head is down, the cervix is dilated more than 2 cm. and is more than 50% effaced. It can take up to 24 hours to get you into active labor and then even longer before you are ready to push. Sometimes an induction does NOT work and we have to decide whether to send you home or repeat a course of pitocin in our effort to get you into active labor. It is generally advisable to tell your family that you will call them when you are in active labor because it can be a long wait otherwise!

If your cervix is not "ripe," meaning that it is not dilated or effaced, then you will be induced with Cervidil prior to pitocin. Cervidil looks like a very small tampon and it is placed in the vagina behind the cervix for 12 hours. You are in the hospital while it is in place. Most women do not feel anything happening while the Cervidil is in place but some women will feel contractions and occasionally Cervidil will actually cause labor. The Cervidil is removed in 12 hours and hopefully your cervix is softer and perhaps slightly dilated or effaced. The vast majority of the time, pitocin will be initiated now. Occasionally we will repeat the Cervidil successively for 24 hours before starting pitocin. It is a good idea to try to rest while the Cervidil is in place because you will need your energy to push your baby out and it can take another 24 hours after starting pitocin to reach the point where you are ready to push!

If you have been scheduled for induction of labor at **Mercy Hospital,** you will be informed whether you have a morning, afternoon, or evening time slot. You are not provided with a specific time but rather a general time frame. The hospital will call you at home when they are ready for you to come to the hospital. If you are scheduled in the morning you could be called as early as 5:00 or 6:00 a.m. If Labor and Delivery is very busy then they will delay scheduled inductions. You are allowed to eat on the day of your induction though your meals should be light.

If your induction is scheduled at **Missouri Baptist Medical Center,** you will be given a time to present to Labor and Delivery but it is wise to call before you leave your home to confirm that they do not need to delay your induction.

If you are delivering your baby by scheduled cesarean section then you will receive instructions from us and from the hospital regarding arrival time to the hospital and restrictions regarding eating and drinking prior to your surgery.

- **Mercy Hospital Labor and Delivery: (314) 251-6064**
- **Missouri Baptist Medical Center Labor and Delivery: (314) 996-7514**

PREPARING YOUR OTHER CHILDREN FOR THE BIRTH

You may have concerns about how your child or children will react to a new baby in the family. Older children often feel threatened by the arrival of a new brother or sister. Here are some suggestions to prepare your older child for his or her new role. Try the suggestions that seem most workable for you.

- Refer to the baby as "our baby" rather than "mommy's/daddy's baby"

- Allow your older children to prepare for the arrival of the baby by:
  - Helping to choose the baby's name
  - Helping to make birth announcements
  - Selecting clothing for the baby
  - Choosing toys for the baby
  - Selecting a gift for the baby from them

- Read to them about the birth of their new baby. Two good books are:
  - W*hat to Expect When the New Baby Comes Home*, Heidi Murkoff
  - *Kid's Book to Welcome a New Baby*, Barbara J. Collman

- Include your children in your prenatal care—bring them with you to your prenatal appointments. Let them hear the baby's heartbeat.

- Visit a friend who has a newborn.

- Show your children their baby pictures. Explain what it was like:
  - When they were born
  - To feed them
  - To play with them

- Prepare children for the fact that you will be gone for a short time. Tell them who will take care of them while you are gone. Let them help you pack your suitcase for the hospital.

- Instruct your child about baby care, using his/her own doll to practice diapering, feeding and holding the baby.

- Prepare your child for the first day home from the hospital.
  - Tell your child who will bring you home
  - Tell him/her who will be with them at home (e.g. grandparent, relative, friend)
  - Bring a present home for your child

- Have someone else bring the baby into the house while you greet your child.

- Have a few small gifts tucked away. When a visitor brings a gift for the new baby, give your older child(ren) a present also.

- Spend time with your child each day.

- Have your children help with baby care such as feeding, bathing, diapering, holding and playing.

Sisters and brothers give each other the opportunity to grow as people. They learn to share and to get along better with their peers because of their experiences with each other. Although bringing a new baby home may cause some rivalry at first, remember, too the joy your infant is bringing into your family.

BREASTFEEDING YOUR BABY

Breastfeeding is the ideal way to feed your newborn—it is the perfect food for him/her. It also helps protect him/her from disease, infection and allergies. Breastfeeding is a challenge but well worth it if you follow the simple rules in this section. Your milk will not come in until 3-6 days after your delivery. Until then you will have a yellow fluid called colostrum that your baby will nurse on during that first week. It contains antibodies against disease and nutrients for your baby that cannot be put into formula. You will know when your milk has come in when your breasts become full and tender.

For nursing in the hospital, remember to wash your hands before you breastfeed your baby. You can nurse lying down or seated. To help your infant start to feed, gently squeeze your nipple into his mouth until he/she starts to feed. It is a good idea to use both breasts at each feeding for five minutes on each side. You can lengthen this to ten minutes as your nipples become less sore. Another good idea is to alternate the breast you start with at each feeding so they will fill uniformly. Remember to burp your baby during the feedings. You may notice that you feel cramps during your nursing. These are beneficial in making your uterus smaller and in helping it to stop bleeding. When you are finished nursing, air-dry your nipples by leaving the flaps of your nursing bra down for awhile. Lactation consultants are available to meet with you during your stay and you can reach them by telephone after you are released from the hospital.

When you nurse at home, follow the same simple suggestions you used in the hospital. Your baby will be growing and may need to nurse for longer periods of time, up to 15 minutes on each side. Remember that as you nurse more and for longer periods of time, you will produce more milk. After your breastfeeding is going well, you may give your baby a bottle if you are going to be gone for the evening. You may want to pump your breasts and put it into a bottle in the refrigerator for your baby or you may want to use a prepared formula. Remember that formulas have more sugar in them than breast milk and they may taste better to the baby and therefore cause the infant to prefer it to breast milk. If you plan on continuing to nurse, then use formula sparingly.

GUIDELINES FOR BREASTFEEDING AT HOME

- Do not take medications (other than the ones we prescribe) while you are breastfeeding.
- Drink a lot of water and clear fluids while you are breastfeeding.
- Avoid alcohol while you are breastfeeding.
- Do NOT take birth control pills while you are nursing. You can take the "mini-pill" for contraception if we prescribe it for you.
- Eat a balanced diet. Both illness and stress can decrease your milk supply.
- Use some form of barrier contraception during the months that you are breastfeeding (condoms and foam or a diaphragm) because it IS possible to get pregnant while breastfeeding. You may also use the "mini-pill" for contraception but it is only 93% protective when taken correctly so we advise barrier methods as a "back-up."
- Continue to breastfeed if you have a period—there is no harm in this.
- If your breasts become hard and tender, you probably have a blocked duct and it is advisable to continue to nurse from that breast and use a heating pad and Tylenol for relief of discomfort. **CALL US IF YOU GET A FEVER**. If an antibiotic is prescribed, stop applying heat to the breast and apply gentle massage to the breast.
- If you plan on going back to work, you can still breastfeed. You can nurse your baby when you are at home and pump your breast with an electric pump while you are at work. Your childcare provider can give your baby the breast milk in bottles during the day. You will probably have to pump your breasts at work and refrigerate the milk, take it home and use it for the next day's supply. Refrigeration for 72 hours is fine.

If it becomes necessary to discontinue breastfeeding, you should:

- Wear a tight bra day and night until all soreness has subsided.
- Restrict your fluid intake as much as possible for 3-4 days.
- If your breasts remain sore, use ice packs for 15-20 minutes three times a day and take Tylenol.
- Avoid stimulation of breasts (e.g. warm showers, sex) for three to four days.

If you have decided not to nurse then you should wear a good supportive bra day and night for the first week after delivery. A tight fitting sports bra is a good choice. You can use ice packs and Tylenol for severe discomfort. Occasional nipple leakage that is clear, white or yellow is not unusual and can occur for several months after delivery. If you ever notice bloody drainage you need to be seen in the office promptly.

CIRCUMCISION OF YOUR BABY BOY

If you have a boy, you need to decide whether or not to have him circumcised. Circumcision is the surgical removal of the foreskin from the end of the penis. To help you make an informed decision, here are some factors to consider:

- The current position of the American Academy of Pediatrics, the organization that represents most of the pediatricians in the United States, is that existing evidence is insufficient to recommend routine neonatal circumcision. While some studies have shown potential medical benefits to newborn male circumcision, these benefits are modest. The exact incidence of complications after circumcision is not known but data indicate that the rate is low, with the most common complications being bleeding and infection.
- There is NO conclusive evidence that circumcision prevents cancer, venereal disease, masturbation, or poor hygiene.
- Although the overall risk is low, there may be an increased incidence of urinary tract infection in an uncircumcised male.
- Both circumcised and uncircumcised males enjoy normal sex lives.
- Differences in appearance are minimal. Concerns that your child might raise can be handled by frank, open discussion.
- As with any surgical procedure, there are some risks, including excessive bleeding, infection, and too much or too little skin removed.
- A few boys who are not circumcised at birth may need the procedure later in life. In the United States, about 3 out of every 1,000 uncircumcised babies need the procedure after the newborn period.
- Opinions differ regarding the degree of pain the baby feels; however, babies loudly protest their distress for about one minute during the surgical procedure. Your baby will receive some local anesthetic either in the form of cream, ointment, or injection, at the discretion of the physician performing the procedure.
- Check with your insurance coverage or financial plan. Many programs will not cover circumcision. You will be financially responsible for the circumcision cost if it is not covered. It is not our responsibility to determine whether your child has circumcision benefits.

CARE OF THE CIRCUMCISED PENIS

After the circumcision there will be a Vaseline dressing around the end of the baby's penis. Your nurse will show you how to change this. If the diaper or gauze sticks to the penis, drip warm water over the area until it comes off easily. You will need to wash the area gently if it becomes soiled by a bowel movement. When you change the baby's diaper, please check to see that the cut edge of the foreskin is below the rim of the glans (head of the penis). If the foreskin is trying to heal or stick to the top rounded part of the penis (glans), then gently pull it toward the base of the penis until the foreskin is just below the rim. Continue to cover the penis with ointment (Vaseline, Desitin, or A&D) until the cut edge of the foreskin has healed. As the cut foreskin heals, the tip may have a white and/or yellow-colored, soft crusting. This is normal and is part of the healing process. Within 10 days this crust will be replaced with healthy, pink skin. Report to your pediatrician any of the following signs for immediate evaluation:

- Any bleeding more than the size of a dime
- If your baby does not urinate in a 24 hour period
- Any swelling or bad odors from the circumcision area
- Any pus-like discharge

While your pediatrician will handle any acute problems with your son's circumcision, we would like to be informed if any problems have occurred!

CARE OF THE UNCIRCUMCISED PENIS

Gently wash away any secretions around the end of the baby's penis as you clean the rest of the baby's bottom after bowel movements, between diaper changes, and at bath time. **Do not retract (push back) the foreskin to clean under it.** The foreskin is attached to the delicate glans of the penis. Pushing the foreskin back for cleaning isn't necessary and may harm your baby.

Total separation of the foreskin from the glans may take several years and will happen without assistance. As your baby grows, he will learn to care for his own personal hygiene and your pediatrician will answer your questions.

POSTPARTUM INSTRUCTIONS

These instructions cover most of the common questions and concerns that arise after delivery so please read and keep them handy for easy reference. Please do not hesitate to call the office if you have any questions. If you have a vaginal delivery without complications, you will return to the office to see your doctor six weeks after your delivery. If you have a cesarean section without complications, you will return to the office to see the nurse practitioner two weeks after delivery and then your doctor six weeks after delivery. The appointment dates and times will be mailed to you within one week of your delivery. If you have not received these in the mail by this time, please call the office to schedule them. If you have any unusual circumstances, we may ask you to return to the office before two weeks. We will let you know if you need to return earlier before you are discharged from the hospital.

For a vaginal delivery, you may drive after two weeks as long as you are not taking narcotics (Percocet, Darvocet, Vicodin, etc.). If you had a cesarean section, please have someone drive you to your two-week follow-up visit. As long as you are not taking narcotics and you feel that you would be capable of performing a sudden stop, you will be released to drive after this appointment.

ACTIVITY

Remember, it is common to tire easily and feel weak after delivery. It takes six weeks to return to normal. Limit traveling and try to stay home for the first two weeks. Restrict stairs to one or two times per day for the first week. Be sure to hold on to the stair railing for support. Try to avoid lifting over 15 pounds or any other strenuous physical activity. If you had a cesarean section, you may not lift anything heavier than your baby for six weeks. You may do light exercise, such as walking, two weeks after delivery (four weeks for cesarean section). You may take a shower at any time. Please do not douche, use tampons, or put anything in the vagina for a full six weeks.

You may resume sexual intercourse after your visit with the doctor, six weeks after delivery. Remember, it is possible to become pregnant before your first period and when nursing, so use contraception immediately when resuming sexual intercourse. Contraception will be discussed at your six-week postpartum visit. Be sure to continue your prenatal vitamins until your six week check-up or as long as you are nursing. If you have questions, please call our office and speak with the nurse.

VAGINAL DELIVERY

Always wipe from the front to the back after emptying your bladder or having a bowel movement. You may want to use "Tucks" pads to wipe with for the first two weeks if you had a vaginal delivery. Use your peri-bottle (squirt bottle) to cleanse the area between the vagina and the rectum. If you have any stitches, you may experience some discomfort as the area heals. The stitches will dissolve and do not need to be removed.

We recommend an ice pack on your bottom for the first 24 hours after delivery. "Tucks" pads on top of your sanitary napkin are also comforting. You can take Tylenol and Motrin if you have pain. You may also have something stronger, such as Percocet or Darvocet, if these are ineffective. We can also give you a prescription for these medications to take home from the hospital, if needed. These medications are all fine with breastfeeding.

Sitz baths at least twice a day are recommended for the first 10 days if you have a laceration/episiotomy. To prepare a sitz bath, clean your tub and rinse well. Then fill with 4-5 inches of warm water (105˚ F) and sit on a towel for 15-20 minutes. Do not use soap. Stand up slowly to avoid dizziness. Dry off with a clean towel when you are finished.

CESAREAN SECTION

Although you are a new mother, you have also had major surgery. Allow yourself the time to recuperate. You will be offered a variety of pain control options while in the hospital. When you are discharged home you will be given a prescription for a narcotic in addition to Motrin or Tylenol. If your pain is not controlled with the narcotic once you are discharged, please contact the office or call the exchange.

You will need to check your incision twice daily. You can rinse it with soap and water while you shower (no scrubbing) or with a solution of half hydrogen peroxide and half water when you are not in the shower. Dry the incision well. This prevents infection. If you are heavy and the area stays moist, dry it with your hair dryer on cool when you are finished. If your incision should become red, begins to bleed or has yellow or foul smelling drainage, please notify the office.

If you have staples in your incision, they should come out before you leave the hospital. If you have stitches, they do not need to be removed. You will return to the office two weeks after you deliver for the nurse practitioner to check on your wound. If you have any questions or concerns about your incision, please feel free to give the nurse a call. Your vaginal bleeding will be similar to that of a vaginal delivery or even a little less.

BLEEDING

Vaginal bleeding gradually decreases in amount and the color changes from dark red to watery pink to yellow or brown. Increased activity may cause increased vaginal bleeding. It is normal for it to have vinegar-like odor. A foul odor is not normal and should be reported. Vigorous activity, heavy lifting (more than the weight or the baby), and excessive stair climbing should be avoided. If bleeding does increase, stay off your feet and rest. If heavy bleeding (soaking a sanitary pad every hour) continues, call our office, exchange, or go to the emergency room. Small blood clots up to the size of a plum are normal. Clots with heavy bleeding which do not stop with rest are not normal. Please notify us immediately if this should occur.

Cramping or afterbirth pains are normal and help the uterus return to its normal size. Afterbirth pains are stronger with each pregnancy and with nursing. Motrin, 600 mg. every six hours around the clock for the first few days is very helpful. If your pain is severe or not relieved with Motrin, please notify the office or the exchange.

HEMORRHOIDS/BOWEL MOVEMENTS

If you have hemorrhoids, Tucks pads and sitz baths also work well. Drink plenty of water and eat plenty of fiber. If you still are experiencing hard stools that are causing discomfort, you may take an over-the-counter stool softener called Colace—up to 200 mg. per day of Colace is acceptable. In general, you should expect to have a bowel movement by the third day after delivery. If you have not, you will want to take a laxative like Milk of Magnesia or a stool softener like Colace. They are both fine with breastfeeding. If you have not had a bowel movement by the fifth day or are experiencing nausea and vomiting, please notify the office or call the exchange.

FEEDING YOUR BABY

If you are breastfeeding, there are lactation consultants in the hospitals that can assist you. Once you are home, there are a few key things to remember. Although breastfeeding is a "natural process," it requires learning and practice. Be patient with yourself and your baby. There is no set amount that the baby will take at each feeding. Some days your baby may seem unusually hungry and want to nurse more frequently. This can be normal. Your baby is probably getting enough milk if he/she is wetting at least six diapers a day, having at least three bowel movements a day, and eating eight to twelve times in 24 hours.

Your milk will come in two to four days after you deliver. You can still nurse before this as your baby is getting colostrum which is very healthy. If you feel like you are not making enough milk, try increasing your fluid intake to a minimum of 64 ounces a day and nursing more often. If you still feel like you are not making enough milk, please call our office and your pediatrician for instructions.

Sore nipples are a frequent problem. Making sure your infant latches on properly can decrease this. Breaking the seal with your little finger before taking the baby off the breast is also important. Alternating positions with each feeding is helpful, too. When you have finished nursing your baby, leave your blouse or bra open for about thirty minutes. This helps to avoid cracked nipples. You may also apply lanolin to help avoid this. If your nipples do become dry and cracked, you can purchase breast shields that will help decrease the discomfort and encourage healing.

If your nipples are bleeding, you will need to discard the milk on that side until your breast heals. If you become so sore that you cannot nurse, one option is to use a breast pump and feed the baby from a bottle until you heal. Call the office or the exchange if you develop a temperature over 100.4° F, have hard red knots or red streaks on your breasts, or have severe pain in your breast that is not relieved by Tylenol or Motrin. If you are bottle-feeding, or if you are letting your milk "dry up" after discontinuing breastfeeding, your breasts may become uncomfortably full.

The following measures can minimize your discomfort:

- Do not massage your breasts or express the milk.
- Wear a supportive bra at all times, even at night. A breast binder (Ace bandage) may also be used.
- Ice packs and Tylenol or Motrin may relieve discomfort.
- Avoid hot showers or letting the water run on your breasts. Keep you back to the stream of water.
- Remember, bottle feeding and breastfeeding are both acceptable options for your baby so whichever one you choose is fine.

SYMPTOMS TO REPORT TO THE OFFICE

If you experience any of the following symptoms after delivery, you should report them to us as soon as possible:

- Burning with urination
- Any significant increase or change in color or odor of vaginal bleeding
- Temperature more than 100.4˚ F that does not come down with Tylenol
- Any significant increase in pain in the laceration repair/episiotomy
- Any pus draining from the episiotomy or abdominal incision
- Any increased pain, tenderness, or redness of the incision
- Any pus or blood draining from the nipples
- Redness or swelling in the back of your calves
- Significant swelling in your hands, face, or feet when accompanied by a headache, visual disturbances (spots), or right upper abdominal pain

PARENTING

There are many physical and emotional changes that take place after the birth of a baby. Both fathers and mothers may feel overwhelmed by their new role. Men, as well as women, have the natural ability to perform certain parenting activities. Early on, the new father can find satisfaction in holding and quieting the baby's cries. Discuss your feelings about being new parents with each other. Keep in mind that parenting classes are available at all the local hospitals, so please call the office or hospital baby line if you need additional information.

POSTPARTUM DEPRESSION

Occasionally after childbirth you may experience a vague unhappiness with feelings of depression and crying. This occurs without obvious cause and is usually temporary. This can be normal and usually resolves in a few days. If there seems to be unusually long periods of feeling sad or hopeless, please notify the office. You may have postpartum depression. While postpartum depression is most commonly thought of as the "baby blues," it is really quite different. Postpartum depression is a severe, long-lasting depression which affects 10-15% of new mothers.

Symptoms include fatigue, tearfulness, nervousness, depression, feelings of insecurity and detachment from the child. The cause is not known but many experts think the rapidly changing hormone levels bring it on after delivery. It is crucial for mothers experiencing postpartum depression to seek help as soon as possible. Please notify the office if you think you have any of these symptoms.

Resources for postpartum depression include:

- Postpartum Support International—800.944.4PPD, www.postpartum.net

- St. Louis Mother to Mother Postpartum & Pregnancy Adjustment Support Group—314-644-7001 or 877-644-7001, www.mothertomothersupport.org

Again, congratulations on your new arrival and please feel free to call our office with any further questions!