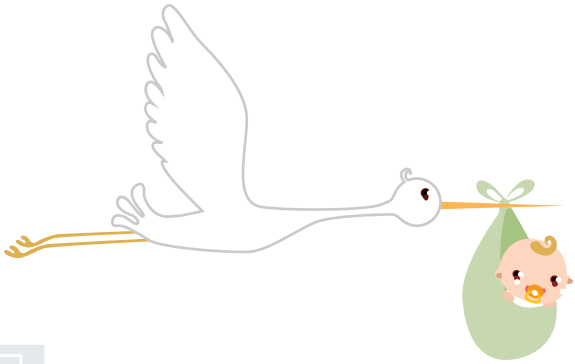


The Pregnancy Book 2026

arbor OBGYN

Arbor

Obstetrics & Gynecology's

The Pregnancy Book

2026
The Pregnancy Book

Matthew Alvarez, M.D.
Zoe Beatty, M.D.
Lindsay Carter Gray, M.D.
Daniel Breazeale, M.D.
Keiko DePasquale, D.O.
Gabrielle Kattan, M.D.
Rachel Runkle, W.H.N.P.
Elizabeth McGrath, F.N.P
Meghan Presnell, F.N.P.

Arbor Obstetrics & Gynecology
2615 Lake Drive, Suite 201
Raleigh, NC 27607
(919)781-9555 tel, (919)781-1070 fax
arbor-obgyn.com

Publication: November 2013 (original)

Updates: 03/14, 07/14, 11/14, 05/15, 02/16, 01/17, 01/18, 01/19, 06/19, 01/20, 01/21, 02/22, 01/23, 01/24, 06/24, 01/25, 01/26.

Content and layout are property of Arbor Obstetrics & Gynecology, UWH of the Carolinas (Atrium Obstetrics & Gynecology, prior to January 2019). All rights reserved. No reproduction, adaptation, distribution or transmission of any part or parts of this publication or any information contained therein by any means whatsoever is permitted, without the prior written permission from the office of Arbor Obstetrics & Gynecology, UWH of the Carolinas.

This book is not a comprehensive prenatal care resource, nor does it suggest an exclusive course of medical care. Specific medical concerns should be brought to the attention of the clinician. This document is not a legal contract.

Arbor Obstetrics & Gynecology
2615 Lake Drive, Suite 201, Raleigh, NC 27607
919-781-9555 tel, 919-781-1070 fax
arbor-obgyn.com

Congratulations on your pregnancy!

We are excited to care for you during this special time in your life. Whether you are new to our practice or have had several babies with us, we want *your* family to become part of the Arbor family. Thank you for choosing Arbor.

This book was created by the Arbor doctors for reference throughout the entire pregnancy and postpartum. Keep it handy! We recommend that you review as much of it as possible before your next appointment. At the end of this book are pages for you to take notes, record your weight, and log questions for your visits.

This book is not a comprehensive prenatal care resource or exclusive course of medical care, but it does address the more common concerns we have encountered. It also highlights Arbor's pregnancy care philosophy, the logistics of prenatal care with us, and items of importance for UNC Rex Hospital. Some information is duplicated in multiple chapters for easy reference. Bring this book to your appointments and spend a few minutes familiarizing yourself while you are in our waiting room. If you have questions that are not discussed in this book, please use the Notes pages to make a list for your next appointment.

At the end of many sections, you will find a snippet of ★ More Information. These are weblinks to reliable resources on important topics. We're saving trees! **It's easiest to explore these clickable links with our online pdf version of this book, available for download on the Arbor website.** Scannable **QR codes** have been added as well for some section.

There are many helpful pregnancy books available. If you don't have one already, consider *Your Pregnancy and Childbirth: Month to Month*, Revised Seventh Edition 2021, (English or Spanish) from the authoritative American College of Obstetricians and Gynecologists (ACOG, $19.95) –

www.acog.org/store/products/patient-education/books/your-pregnancy-and-childbirth-seventh-edition .

Congratulations again, and thank you for trusting us to provide your pregnancy healthcare. We look forward to partnering with you on this great journey and seeing a beautiful baby in your arms soon!

arbor OBGYN

Contents

1. About Arbor Obstetrics & Gynecology 1

Financial Aspects of Pregnancy Care 3

2. How and When to Call the Doctor 9

3. Typical Appointment Schedule 13

4. Medications Safe for Use in Pregnancy 17

5. Fetal Chromosome Screening Tests 21

Screening for Chromosomal Abnormalities 21

Genetic Counseling 25

Choices for Chromosomal Abnormality Screening 25

Screening for Neural Tube Defects (Spina Bifida) 29

6. Genetic Carrier Screening Tests 31

Cystic Fibrosis (CF) 32

Spinal Muscular Atrophy (SMA) 34

Fragile X Syndrome (Fragile X) 36

7. Ultrasounds in Pregnancy 37

First Trimester Dating Ultrasound 37

Second Trimester Screening Ultrasound 38

3D/4D Ultrasound 39

8. Required Prenatal Laboratory Tests 41

First Trimester Tests 41

Urine Samples 42

Lab Testing for Gestational Diabetes 43

Rh Factor Screening and RhoGAM 45

Group B Strep and Pregnancy 46

9. Common Pregnancy Concerns 49

First Trimester Bleeding and Cramping 49

Morning Sickness, Nausea, & Vomiting 50

Constipation 53

Faintness, Dizziness, and Fatigue 53

Headaches 53

Hemorrhoids and Varicose Veins 54

Vaginal Discharge 55

Round Ligament Pain 55

Shortness of Breath 55

Leg Cramps and Restless Legs 56

Swelling of the Legs 56

Skin Changes 56

Disability During Pregnancy and After Delivery 58

10. Life's Activities: Safe vs. Unsafe? 59

11. Vaccines and Infectious Diseases 61

Covid-19 61

Respiratory Syncytial Virus (RSV) 62

Influenza 64

Tdap: Tetanus, Diphtheria, Pertussis (Whooping Cough) 65

Rubella 67

Varicella (Chicken Pox) 67

Other Vaccines 68

12. Nutrition, Weight Gain, and Exercise 71

Nutrition 72

Weight Gain 80

Exercise 83

13. Smoke and Alcohol Use 85

Tobacco & Vaping 85

Marijuana and CBD 86

Alcohol 86

Other Drugs and Help 88

14. Traveling While Pregnant 89

Air Travel 90

Cruises 91

Seat Belt and Air Bag Use 91

Zika Virus and Travel Update 92

15. Fetal Health Assessments 95

Fetal Kick Counts 95

Non-Stress Tests & Electronic Fetal Heart Rate Monitoring 96

Biophysical Profile 97

16. Other Doctors 99

Pediatricians 99

Dentists 100

Optometrists 103

17. Twin Pregnancy 105

How did this happen? 105

Types of Twins 105

Complications 107

Appointment Schedule 107

Delivery Options 108

Common Questions about Twin Pregnancy 108

18. Rex Hospital and Preparing for Birth 111

About Rex 111

OB Hospitalists and the OB Emergency Room at Rex 112

Birth Classes & Other Prenatal Classes 114

Pre-Registration 115

Birth Plans 115

Cord Blood Banking 117

19. Labor, Delivery, and Postpartum 119

Early Labor 119

Active Labor 120

Delivery 121

Immediate Post-Partum 122

Hospital Recovery 122

20. Inductions 125

Medically Indicated Inductions 126

Overdue! 126

Elective Induction 127

21. Epidurals at Rex Hospital 129

22. Cesarean Sections 131

Scheduled C-Sections 131

Unscheduled / Intrapartum C-Sections 133

General Information about C-Sections 134

23. VBAC – Vaginal Birth After Cesarean 139

24. What if My Baby is Breech? 141

25. Circumcision of the Newborn Boy 145

26. Permanent Birth Control 147

27. Postpartum Instructions – Recovering at Home 149

28. Great Organizations & Resources 159

29. Your Notes 161

30. Contact Information 169

1. About Arbor Obstetrics & Gynecology

For many years, local ObGyn physicians were incorporated under the independent hospital, Rex Healthcare. When this healthcare delivery model dissolved in 2000, *Atrium* Obstetrics & Gynecology was born as an small independent medical office. The Atrium name was from our previous location on nearby Atrium Drive.

In 2018, Carolinas Healthcare System of Charlotte rebranded and changed their name to Atrium Health, as they expanded their presence across North Carolina and through the Southeast. Our practice is unrelated to Atrium Health (or any healthcare system) and so we decided to affirm our independence by undergoing a name change. Arbor Obstetrics & Gynecology officially launched January 1st, 2019. Much like "Atrium", we thought the name Arbor evoked a sense of warmth, natural simplicity, and authenticity. Although we took the opportunity to upgrade our facilities, website, and patient experience – we try to emphasize that all of the things and people that brought you to Atrium ObGyn are still here with Arbor ObGyn!

We continue to carry on a robust practice with empathy, respect, caring, and quality as our cornerstones. Several of our staff have been with us for more than a dozen years. In 2010 we built our Lake Drive facility to provide more in-office treatment options and greater comfort for our patients. Our office occupies the entire second floor and was designed with aid from workplace engineers – all to make your visit a more pleasant and efficient experience.

Arbor ObGyn providers include six expertly trained obstetrician/gynecologists, two Women's Health Nurse Practitioners, and one Family Nurse Practitioner. Please visit the www.arbor-obgyn.com website which displays profiles of the providers as well as other information about our office and services. We're big enough to offer all the bells and whistles sophisticated healthcare consumers expect of modern medicine including our robust electronic health record system. But we are particularly proud that we remain small enough so that we get to know you, and you get to know us. The Arbor difference is the time we intentionally set aside to spend with you.

A woman's first pregnancy is frequently her first Arbor experience, and most women come to us from a personal referral. Your experience here matters to us. If you don't already have a local ObGyn practice then consider staying with us for the years beyond childbirth. We see women for annual gynecologic exams, contraception, illness, consultations, fertility, gynecologic surgery, menopausal transitions, and much more. We also have an advanced procedures suite in our office which reduces the need for expensive hospital-based surgeries.

We know the challenges of the modern American healthcare system and we continue to adjust to its changing demands. You may see Arbor's name associated with Unified Women's Healthcare (UWH), such as on your billing or insurance notifications. UWH is the largest and fastest growing group of Ob-Gyn physicians in the nation and has a presence in eighteen states. Unified Women's Healthcare is the only national, private practice women's health group with a singular vision and 100% physician governance. UWH clinicians deliver a baby every four minutes in the USA! Visit our organization at unifiedwomenshealthcare.com and uwhcarolinas.com. Behind the scenes we leverage sophisticated business relationships so that we can provide better benefits for our employees, share healthcare administrative costs, and negotiate fair terms with your insurance carriers. Our fully integrated electronic medical record system and web-portal allow us to interact with and address your needs in a much more efficient manner. We even opened a mammogram center in 2013 to better serve you!

Again, welcome to Arbor! We are proud of our history and local reputation. Please let us know if we do not meet your expectations. "Experience and Caring" – that's who we are. We care about you, and we look forward to serving and getting to know you!

Visit arbor-obgyn.com here!

Financial Aspects of Pregnancy Care

You will meet with our billing specialist during one of your first appointments to review your insurance benefits related to pregnancy medical care. You will be provided with written estimates and similar information from this book chapter. Be mindful that insurance companies often consider pregnancy benefits much differently when compared to visits for your general health, illness, or surgery.

Arbor ObGyn has a standard fee for the provision of "OB Global Care" (see below). However, we—more specifically UWH of the Carolinas—have entered contracts with each insurance company giving them a discounted rate in exchange for the opportunity to provide prenatal care to their covered members. This is what it means that we 'accept' your insurance and that Arbor ObGyn is in your insurer's 'network'. If we do not have a contract with your insurer, then we 'do not accept' your insurance and you will be billed our customary fee. We do have a reduced fee schedule for patients not using insurance who are willing to pay directly at the time of care – often regarded as 'self-pay' patients. Also, be aware that Arbor ObGyn does not accept Medicaid for any reason (primary or secondary insurance), and understand that if you obtain Medicaid coverage during the pregnancy we will not submit any claims to Medicaid.

After the delivery of your baby we will submit a claim to your insurer requesting payment of our contracted OB Global Care fee. Your portion of this fee is determined by the benefits package you have established when you purchased insurance. We will help you determine these responsibilities.

Your insurance company describes **OB Global Care** as all pregnancy-related visits from the second visit until 6 weeks after delivery, including your delivery. Therefore, instead of charging for each visit to our office, Arbor ObGyn will bill just one fee for your entire prenatal care experience. Be aware that unscheduled visits not specifically related to care for your pregnancy may be treated as general-illness visits and billed separately (e.g. a sinus infection).

Arbor's OB Global Care fee includes the following:

- Up to 13 routine obstetric office visits, including routine exams, urine tests, weights and blood pressures.
- Uncomplicated delivery of the baby (vaginal or cesarean) and daily postpartum hospital supervision by the physicians.
- Six-week post-partum office visit and exam.

OB Payment Plan: When reviewing the maternity insurance benefits, your insurance will advise us of your portion of the Global fee. This is called your coinsurance and deductible. We are authorized by your insurance to collect this portion prior to delivery. Our policy is that the amount due is to be collected in full by your next scheduled appointment, or to have arranged a payment plan that is drafted from your credit card on file (CCOF). We require a credit card account to be securely kept for expenses. If you choose the payment plan option, payment is due each month. The final payment of this plan is due by your 24th week of pregnancy.

Some charges during the course of prenatal care are not part of the Global OB fee – they may or may not be covered by your insurance:

Ultrasounds are **not** considered to be part of the Global OB fee and are billed separately at time of service. You will be responsible for any balance unpaid by insurance within 30 days of insurance processing this claim.

The Arbor Global OB fee does not include fees incurred at the hospital. UNC Rex Hospital services will be billed by Rex. Please call 800-594-8624 for billing information at UNC Rex Hospital.

The Arbor Global OB fee does not include fees incurred by an anesthesiologist. Anesthesia is performed at UNC Rex Hospital by North American Partners in Anesthesia (NAPA), and you/insurance will be billed directly from this company.

The Arbor Global OB fee does not include fees incurred by any laboratory. Laboratory services are mostly provided by LabCorp, but some laboratory tests require the use of other independent laboratories. Some lab services at UNC Rex Hospital may be independent as well. For these services, you/insurance will be billed directly from these companies.

Below are some specific items that are NOT included in the Global OB fee and will be billed by the lab/hospital providing the service. Arbor does not bill you for these services. We currently use LabCorp as our primary lab vendor.

- Initial prenatal lab panel ***and state-mandated tests.***
- Pap Smear for initial pregnancy visit and Postpartum visit (if done)
- Lab tests for genetics (CF, SMA) or fetal anomalies (including NT First Screen, NIPT MaterniT21).
- Diabetic lab screening (1-hour glucola) done at approx. 28 weeks.
- Other lab tests as needed to provide good medical care.
- Genetic Counseling, typically done at Duke Perinatal or UNC-Rex Maternal Fetal Medicine.
- Detailed/Level-2 Ultrasound, typically done at Duke Perinatal or UNC-Rex Maternal Fetal Medicine.
- Dietary counseling by nutritionist, typically done at Duke Perinatal or UNC-Rex Maternal Fetal Medicine.
- Visits to the OB Emergency Room at Rex Hospital.

Below are some of the services that are NOT included in the Global OB fee and will be billed by Arbor ObGyn.

- Initial pregnancy confirmation office visit and ultrasound.
- All **non-routine** visits (can be both pregnancy and non-pregnancy related visits); **copay or deductible/coinsurance due at the time of service.**
- Any Routine obstetric care visits after the 13th visit (most pregnancies require about 10 visits).
- All Ultrasounds & fetal non-stress tests (NST).
- Nuchal Translucency Ultrasound.
- Circumcision of male newborn.
- Care & Delivery of twins will have additional charges.
- Any office visit for other than routine post-partum care during the six-week period following delivery.
- Completion of disability forms, return-to-work forms, FMLA forms. ***(Please allow 5-7 business days for completion of forms and/or letters)*** **$25.00 charge**

Some insurance companies prefer that you see your Primary Care Physician for any non-pregnancy related problems, such as upper respiratory infections. You may have a higher co-pay/deductible if these evaluations are provided by an ObGyn. Your Arbor providers are glad to provide advice and consultation to your PCP, Dentist, or other specialist.

Changes in Insurance: Should you have a change in insurance during your pregnancy, please contact our billing office as soon as you have all the new information. We will contact your new insurer and review your benefits; your payment plan may change and you will be notified. Completed appointments will need to be billed to the old insurance, and upcoming appointments and delivery will be billed to the new insurance – as required by law. Most insurance companies will deny charges if they do not receive a claim within a specific time period. If you do not notify us in time for us to submit the claim form, you will be held responsible for any denied charges.

If your pregnancy crosses over your policy renewal date, you may find yourself applying payments to two deductibles. Although your payment for the estimated commitment to the OB Global Fee is collected and held in the first half of the pregnancy, your insurance is not billed until delivery. The bulk of your charges therefore will be applied to the deductible existing at the time of delivery. Earlier charges for ultrasounds and lab may apply to your initial deductible.

**** An important note about insurance benefits:** Please keep in mind that although your insurance carrier reveals your financial benefits regarding pregnancy, they do not guarantee actual payment. Insurance carriers consider many factors when claims are being adjudicated or processed. Please note that all prices listed and quoted for you are our best estimates only. Your insurance does not guarantee payment until claim requests are received. Any questions regarding an insurance payment must be directed to your insurance company.

FSA. Flexible Spending Accounts are set up by your employer and are not directly related to your insurance. Unfortunately, since we do not have a contract with your FSA administrator, we have no control over whether your FSA will allow reimbursement for certain services. Our experience has been that the company handling your FSA will only allow

you to be reimbursed for services *once the charge is filed to the insurance company and you receive a bill from the provider*. As stated earlier, the OB Global Care fee is billed *after* the baby is born. Due to this complexity we are unable to accept FSA cards as a form of payment for your OB Agreement and/or OB Payment Plan. We can, however, accept FSA funds for individual services throughout the pregnancy which your insurance company has processed, such as ultrasounds, fetal non-stress tests, etc. You can typically use your FSA for lab and hospital services as well.

HSA. A Health Savings Account is *your* money, and can be used for any legitimate health care fee, including your OB Agreement and/or OB Payment Plan

If you have any questions about the **Global OB fee** or other charges, please do not hesitate to contact our office. Also note that the above information and instructions may change from time to time.

2. How and When to Call the Doctor

First things first, right? Please know that you can always be seen for a medical problem. Patients with urgent needs can be seen in our Arbor office by appointment, in the Emergency Room at Rex Hospital, or in the OB Emergency Department in the Rex Women's Center. Less emergent problems will also be evaluated as quickly as possible, and if practical, right here in the office. Please note that we do not allow "walk-in" visits – everyone must schedule an appointment. Review *Chapter 19: Labor, Delivery, & Postpartum* for additional information about the Rex OB Hospitalist service and after-hours labor evaluations.

Please take advantage of our **Web Portal**. Access it through the link on our website. We have invested in this sophisticated Electronic Health Record system to better serve you. You can review test results, ask questions, request refills, pay bills, and request/confirm appointments. You can also adjust the way you would like to receive reminders and notifications such as by email, home phone, mobile, or text message. We can't send emails directly to you due to health privacy restrictions, so the web portal is the space where we meet! The portal is monitored by our staff only during our regular business hours, so please make a telephone call if you aren't sure if your condition requires urgent attention. The arbor-obgyn.com website has a helpful FAQ section for the Portal use. Before you read any further, please add an updated face photo to your profile page – it really helps our staff get to know you better (and we're tired of looking at your driver's license!). Simply log in to the Portal, click on your name in the upper-right, select on My Profile, and then edit the information. Thank you!!

If you need to call, always call our main number, **919-781-9555**. This number is answered by our operator between 8:00 a.m. and 4:30 p.m. and then triaged to the appropriate nurse or staff member. If that staff is assisting another patient then leave a message. We typically can return your call within the hour. Your detailed message will allow us to survey your medical record prior to returning the call. For accurate record identification we will ask for your full name and birth date during each call. After hours, the telephone relays to an automated voicemail system. Please speak slowly and clearly, giving your full name and birth date. A voice

prompt will ask you to enter your phone number (careful!) and then record a message for the doctor. Once you hang up, the message will be sent to the on-call physician's cell phone who will call you right back. If you are not called back within 25 minutes please repeat the call as the physician may be attending another delivery or emergency. It's always best if the patient makes the call herself and is available to speak to the doctor when her call is returned. (Using a family member's cell phone impedes our ability to trace and link your call to your medical record).

Each day we have a freshly rested physician dedicated to hospital care, typically for 24 hours at a time beginning at 8:00 a.m. Throughout the night we are delivering babies, providing hospital consultations, performing emergency surgeries, answering telephone calls, … or getting some rest! After hours calls should be reserved for labor concerns and emergencies only. If your question or concern is not of an urgent nature please send a message through the Portal, or wait until regular office hours to call (8:00 a.m. to 4:30 p.m.). You will be better assisted at that time since we will have more complete access to your medical record, electronic prescribing system, resources to research your concern, and the ability to arrange an office appointment if necessary. Please understand that there is a very limited amount of evaluation we can complete over the phone, and we are unable to answer "how much to worry." In most cases we will advise you to be seen for an in-person evaluation – at the hospital if after business hours. See the informative table on the next page.

In 2014 we began **hospital 'call sharing'** with another well-respected group, Wilkerson ObGyn (www.wilkersonobgyn.com). Their physician on-call will take phone calls, triage clinical concerns, start inductions, and deliver babies for a window of time. Occasionally we deliver their patients, and sometimes they deliver ours. We continue to personally deliver about 85% of our Arbor expectant mothers. We share a couple of weeknights after 7:00 PM, and split weekends for 12 or 24 hours at a time. They are our trusted colleagues and we know they will provide wonderful service to you if called upon. We make every effort to be there for your delivery by minimizing inductions and scheduled C-sections when we're not available. It has been a successful arrangement for ten years and allows your obstetrician to be rested, alert, and in the office more often. When you call after hours the answering service will announce which physician is currently on duty.

Late in the pregnancy you may begin labor. Labor is experienced in many ways. Our best advice is to presume labor happens when your contractions have accelerated to every 5 minutes, last for about a minute, and are of increasing intensity over the course of several hours. If you don't want to carry a stopwatch, just count your total contractions over a two-hour period. Expect about 25 contractions during that time to be typical of real labor. The only way to know for certain is for us to do a dilation exam of your cervix. We can't guess over the phone, so you'll most likely need to come to the office or hospital for an exam.

After normal business hours, if you believe you are in labor then come directly to the Rex OB Emergency Department (OBED) in the Women's Center for an evaluation; you do not need to call the on-call obstetrician. Either the Arbor/Wilkerson doctor or the Rex OB Hospitalist will see you immediately.

After regular business hours if you have medical concerns and aren't sure what to do please consider coming directly to the Rex OB Emergency for an evaluation. If you are greater than 18 weeks go the Women's Center OB Emergency. Women less than 18 weeks along should go to the Rex Main ER where Emergency Room physicians will evaluate you. Here are some general guidelines to help you decide:

<u>Come to Rex OB Emergency</u>

- Decreased or no fetal movement after 24 weeks of pregnancy
- Uterine contractions before 35 weeks: more than 6 every hour that do not improve with rest and aggressive drinking of fluids
- Labor signs
- Leaking fluid vaginally
- Vaginal bleeding, heavier than a normal period
- Severe or continuous headache
- Fever over 102 degrees
- Auto accidents and falls

<u>Wait Until Business Hours</u>

- Fever over 100.4, unexplained
- Painful urination / UTI
- Unexplained rash
- Vaginal spotting of blood
- Other vaginal discharge
- Diarrhea, vomiting, or "Stomach Flu/Bug"
- Cough & cold advice
- Difficulty sleeping
- Constipation
- Prescription refills
- Appointment scheduling

Please note that we do not prescribe narcotics after business hours. FDA regulations in 2014 prohibited the physician or office from telephoning these types of prescriptions to the pharmacy. Starting in 2020, all narcotics prescriptions are required to go through a secure electronic prescribing system. In general, please make all prescription refill requests during business hours.

Please be aware that we take your privacy very seriously. All telephone calls with our administrative and clinical staff are held in closed, secure, and private areas of our office, so that we can discuss your medical concerns without other patients hearing you. Our front desk staff does not answer patient calls directly. While in our office if you have a concern that you would like to discuss with our staff in a more discrete manner, please ask to be taken to a private room.

Our contact information is listed at the very end of this book.

3. Typical Appointment Schedule

Your first visit to Arbor is ordinarily to confirm a successful start to your pregnancy. Perhaps you missed a menstrual cycle or took a home pregnancy test? This appointment is important to identify the location of the pregnancy (with ultrasound), calculate the age of the fetus, and assign a 'due date.' Medical conditions that can impact pregnancy are also reviewed.

By the way, we project your due date to be forty weeks from the first day of your last menstrual period (LMP). If you didn't have regular cycles, you needed fertility assistance, or had another discrepancy from the ultrasound measurements, then we will use ultrasound calculations to project your due date. Don't worry that the traditional "nine months" doesn't fit neatly into our 40 weeks. We will always reference your pregnancy in completed 'weeks.' For example, if we say that you are "29 +3," that means that you have completed 29 weeks and 3 additional days of your pregnancy since your LMP. Your 'due date' won't change once established.

During this first visit, our staff nurses will also help develop your electronic pregnancy medical record and provide you with information about your pregnancy, UNC Rex Hospital, and Arbor ObGyn (like this book!) We'll draw your blood for the Universal lab tests of pregnancy required by the state of North Carolina: blood type and antibody screen, immunity to Rubella (German measles), Hepatitis B, Hepatitis C, a complete blood count to assess for anemia and other problems, tests for syphilis and HIV, and a urine culture to look for early bladder infections. Our business staff will help you understand your insurance benefits and financial planning for the pregnancy and delivery.

If you are transferring your care to Arbor from another office or have been under the care of a fertility specialist then you may have a due date assigned already. In these cases we will typically focus on introducing our office, reviewing your pregnancy medical record, and updating your pregnancy care plan.

If you are less than 13 weeks along, we ask that you review the screening options information in this book prior to your next appointment.

Many of the testing decisions you consider are time-sensitive and are not available later in the pregnancy.

We refer to your second appointment to be your "New OB" appointment. This appointment is the beginning of your official prenatal care, and will be within a few weeks after your initial ultrasound visit. A general physical exam and a pelvic exam will be completed during this visit. A swab will be taken to test for Gonorrhea and Chlamydia as required by North Carolina law, and if necessary, your Pap test updated. We will also review the test results from the initial visit. Lastly, we'll discuss optional prenatal screening tests and help you decide if such testing is recommended and/or useful to you.

Most women will have an appointment 3-4 weeks later, just to check in, answer questions, and hear the baby's heartbeat. But for some women with an uncomplicated pregnancy the next visit will be 6 weeks later and incorporate your fetal anatomy ultrasound. This is scheduled for between 18 and 20 weeks, with an appointment immediately following the ultrasound to review the results and catch up on your questions and concerns. See the "Ultrasounds in Pregnancy" section later in this book for more information.

Until the last few months your appointments will take place approximately every 4-5 weeks. Many types of appointments are linked to a certain gestational age. We want to be respectful of your time and avoid asking you to come too often. We want to ensure that each appointment is meaningful to you. At each 'Routine Check-up' expect your blood pressure and weight to be measured, baby's heart rate heard, and to be asked several questions to confirm that all is going well. We definitely want to hear your questions too!

In your third trimester (28 weeks) we begin more frequent visits as you approach your due date. Four-, three-, or two-week intervals are common. We will continue to monitor your blood pressure and weight, and assess the baby's heart rate.

From 37 weeks until you deliver, we'll see you almost weekly. An exam of your cervix can help you (and us) plan for delivery. It is important that you continue the fetal movement counts from your 28th week until delivery.

Remember, your 'due date' is the 40-week completion point and just a good estimate! For uncomplicated pregnancies it is reasonable to expect the baby's arrival between 37 and 42 completed weeks. Many women will need (or want) to be induced when they are 'overdue.' Medically, this needs to be between the 41st and 42nd completed weeks – that is, at least one week past your due date. Pre-planned C-Sections are generally scheduled in the 39th week.

It is easy to call and make an appointment if you need to be seen between your regularly scheduled visits. Your primary care provider may be a good resource for health concerns and visits not related to pregnancy. You can communicate with us via our web portal as well. Please take a few minutes to complete your web Portal registration and update your profile/photo.

Finally, it is important to us that you meet with each of the six physicians at least once. This allows us to get to know you, provide slightly nuanced perspectives, and double check the developing care plan. For some visits you may see one of our nurse practitioners. They are experts as well, and have unique perspectives based on their previous careers in the Labor, Delivery, and Postpartum hospital setting. There is always a physician in the office if complex issues arise and collaboration is needed.

The table on the following page show a general outline of appointment activities for women with a completely 'routine' pregnancy. Medical complexities will require additional appointments.

Weeks Along	Appointment Details
8 - 9	• Confirmation of Pregnancy with internal vaginal ultrasound • Baseline Universal Laboratory testing • Update of electronic medical record • Insurance/Financial review • Receive Welcome Packet and Arbor's Pregnancy Book
10 - 12	• Ultrasound to confirm a growing pregnancy (no charge, typically) • Pelvic and physical exam, test for Chlamydia/Gonorrhea, Pap • Review of blood test results • Review/discuss options for Chromosome Screening Tests for the fetus (such as Down Syndrome), and Genetic Carrier Screening for Mom
15	• Just to check in with you and listen to the baby's heartbeat! • Reminder to schedule Birth Class if desired
18 - 20	• Ultrasound for fetal anatomy screening and development • Boy vs. Girl … if you want to know! • Clinician review of ultrasound and other results with you
23 -24	• Routine Check-up
28	• Plan for 90 minutes in our office for this appointment • Lab screening for Gestational Diabetes (Glucola) and Anemia • Vaccination for Pertussis (Tdap) • Rh Negative mothers receive RhoGAM • Start scheduling pre-planned C-Section, if appropriate • Receive our Third Trimester Information handout
31-32	• Routine Check-up
34-35	• Routine Check-up • Vaccination for RSV (Abrysvo), 32-36 wks
36-37	• Group B Strep vaginal swab testing • Confirm the baby is 'head first' with a brief ultrasound • Receive our 36 Week Almost There handout
38	• Routine Check-up & cervix exam offered • Preoperative visit with physician if you are having a C/Section
39	• Routine Check-up & cervix exam offered
40 You're due!	• Routine Check-up & cervix exam offered • Discuss dates for Induction, if not laboring by 41-42 weeks
41	• Routine Check-up & cervix exam offered • Fetal Well-being testing (Non-Stress Test, Biophysical Profile) • Ensure Induction by 42 weeks

4. Medications Safe for Use in Pregnancy

Most minor illnesses and symptoms can readily be treated with **over-the-counter medications**. The table below provides a partial list of over-the-counter medications already reviewed by your Arbor doctors to be considered safe and useful in the treatment of many common conditions. We have cards with similar information conveniently sized for your reference as well. Consider whether you really need medication, particularly in the first trimester when your baby's organs are developing.

Please discuss all **prescription medicines** with the physician during your first visit. If you are unsure about a medication you take regularly, please contact our nurses (919-781-9555) prior to discontinuing your medication. Take all medications according to the manufacturer's directions listed on the bottle unless otherwise directed by the physician.

Be particularly careful with discontinuation of antidepressant medications. Many can and should be used throughout the entire pregnancy. Don't stop these medicines 'cold-turkey.' Please contact our office or your mental health specialist first.

Many over-the-counter medications are combinations of some of the medicines listed here, e.g. **cough and cold preparations**. Be sure that these combination medications do not have additional medications not listed as safe (such as ibuprofen or alcohol).

Avoid cold and cough medications containing the decongestants pseudoephedrine and phenylephrine until after your first trimester (13 weeks).

We recommend that you discontinue any herbal remedies during your pregnancy. Herbals are not regulated and often contain contaminants that might be hazardous to the pregnancy.

★ More Information

http://mothertobaby.org/fact-sheets-parent/… *Consumer website from the Organization of Teratology Information Specialists (OTIS). This link has a fairly comprehensive list of FAQ sheets for prescription and non-prescription medications used in pregnancy and breastfeeding, as well as other occupational and common exposures of pregnancy.*

OVER-THE-COUNTER MEDICATIONS SAFE FOR PREGNANCY

Symptoms	Med Type	Generic	Brand Name
Allergies (seasonal and acute nasal drip)	antihistamine	loratadine fexofenadine cetirizine diphenhydramine	Claritin Allegra Zyrtec Benadryl
Nasal Congestion	saline decongestant vasoconstrictor steroid spray	saline spray ***phenylephrine ***pseudoephedrine fluticasone propionate	Ocean Mist ***In many cold preparations ***Sudafed Flonase
Cough	expectorant cough suppressant	guaifenesin dextromethorphan	Mucinex, Robitussin In many cold preparations
Heartburn	antacid	calcium carbonate aluminum/magnesium/ simethicone	Tums, Rolaids, Maalox tabs Maalox liquid, Mylanta
Gastric Reflux	antihistamine proton-pump inhibitor	famotidine cimetidine omeprazole lansoprazole esomeprazole rabeprazole	Pepcid Tagamet Prilosec Prevacid Nexium AcipHex

*** avoid in 1st trimester

Symptoms	Med Type	Generic	Brand Name
Gas & Bloating	anti-foaming	simethicone	Mylicon, Gas-X, Phazyme
Constipation	stool softener	docusate	Colace, Surfak
	bulking agent	bran	Many Bran Cereals
		psyllium husk	Metamucil
		methylcellulose	Citrucel
	osmotic laxative	polyethylene glycol (PEG)	MiraLAX, GoLYTELY
		magnesium hydroxide	Milk of Magnesia
	stimulant laxative	bisacodyl (oral/supp.)	Dulcolax, Correctol
Diarrhea	anti-diarrheal	loperamide	Imodium
Headache/Fever	analgesic/antipy-retic	acetaminophen	Tylenol
Vaginal Yeast	antifungal	miconazole	Monistat 3
		clotrimazole	Gyne-Lotrimin 3
Insomnia	antihistamine	doxylamine	Unisom
		diphenhydramine	Benadryl
Motion Sickness	anti-nausea	meclizine	Antivert, Sea Legs, Dramamine Less Drowsy
		dimenhydrinate	Dramamine Original

5. Fetal Chromosome Screening Tests

Before your next appointment, consider whether you are interested in having any optional first trimester fetal screening tests. Deciding to pursue or decline these testing options is a personal choice for each couple. Consider whether it would be important for you to know ahead of time if you were to have a baby with these special needs. Please take some time to review this chapter carefully since the testing and medical issues are complex. Review the manufacturer's test brochures in your Welcome Packet. Because these tests are time-sensitive we will need to know your questions and preferences at your next appointment. The companies that own these tests have varied relationships with your insurance carrier and you are best served by contacting the company and/or your insurer to find out your exact financial obligation.

Please remember that no test is perfectly accurate, and no test can define a "normal" baby. Deciding to use prenatal testing is a personal choice for you, and you should understand the limitations of the test and results. Because of the increasing complexity of the tests, interpretation, and insurance coverage, our preference is to have our 'higher-risk' women meet with a genetics counselor at Duke or UNC Rex to review options.

Screening for Chromosomal Abnormalities

Most optional tests are focused on early diagnosis of chromosomal abnormalities, the most common being Down syndrome. The chance of having a child with a chromosomal abnormality increases with age. Humans are born with 46 chromosomes in each cell of the body, in 23 pairs. The mother and father each contribute 23 chromosomes -- which then combine to create your baby. A chromosomal abnormality results when there is a change in the number or structure in one (or more) of the chromosomes. The chance of this happening increases with maternal age, and in some cases when there is a family history of chromosomal abnormalities.

An abnormal number or arrangement of chromosomes is also called aneuploidy.

With Down syndrome (also known as Trisomy 21), an extra copy of chromosome number 21 is present. One in 800 babies are born with Down syndrome. All these babies will have some degree of intellectual disability, often in the mild to moderate range. Babies with Down syndrome can also have birth defects in the heart and/or digestive tract. They may also have distinct physical features in the face or posture. However, you should be aware that people with Down syndrome are now well integrated into modern society, can succeed in independence, and form strong relationships with others. As of 2023, North Carolina law does not permit termination of a pregnancy due to the presence or presumed presence of Down Syndrome (or the racial makeup or sex of the baby). Visit the National Down Syndrome Society for more information: www.ndss.org.

Trisomy 13 (Patau Syndrome) and Trisomy 18 (Edwards Syndrome) are aneuploidies that are rarer than Down syndrome, affecting 1 out of every 6,000 babies. These babies are born with an extra copy of chromosome 13 or 18. If the fetus does not die prenatally, ninety percent of babies with these conditions will die before their first birthday. Those who live longer have severe intellectual disabilities and often have other serious health problems including heart defects and growth disorders.

The remainder of this chapter has a detailed discussion over testing options. Summary tables on the next few pages show all the available screening tests, candidates for the tests, timing, and rates of detection.

Another table shows the approximate likelihood of delivering a live baby with either Down syndrome or another trisomy (13, 18, X and Y) based upon your age at the time of delivery. There may be other considerations that alter your risk. Use this table as only a rough approximation of your age-related risk.

Keep in mind that there are many chromosomal disorders that are not specifically tested for by early screening. Sometimes laboratory or ultrasound findings can suggest that "something" is abnormal, even if we're not sure exactly the cause or prognosis.

SCREENING AND DIAGNOSTIC TESTS AVAILABLE IN THE FIRST HALF OF PREGNANCY, FOR ANOMALIES OF THE FETUS.

Test	Screening vs. Diagnostic	Who?	Optimal Timing	Detection Rate	Results	Location
NIPT: MateriT21. Unity.	Screening (blood)	All	After 9 weeks	Down: 99% Trisomy 18: 99% Trisomy 13: 91%	5-7 business days	Arbor, Rex, Duke
AFP	Screening (blood).	If needed	16-20 weeks	ONTD: 80%	5-7 days	Arbor
CVS	Diagnostic (vaginal or abdominal needle)	High-risk	10-14 weeks	99.5% chromosomal abnormalities	10 days	Rex, Duke
Amniocentesis	Diagnostic (abdominal needle)	High-risk	15-18 weeks	99.5% chromosomal abnormalities	10 days	Rex, Duke

NIPT- NonInvasive Prenatal Testing, NT- Nuchal Translucency, CVS- Chorionic Villus Sampling, AFP- Alpha FetoProtein, ONTD- Open Neural Tube Defects.

LabCorp offers: MateriT21, FirstScreen, Afp4.

ULTRASOUNDS AND GENETIC COUNSELING OPTIONS.

Test	Screening vs. Diagnostic	Who ?	Optimal Timing	Detection Rate	Results	Location
Basic-Standard Ultrasound	Screening	All	18-20 weeks	Limited	Same Day	Arbor
Detailed-Anatomic Ultrasound	Screening (Advanced)	Age >35 years, and other high-risk	17-19 weeks	Down: 50% Trisomy 18: 90% Trisomy 13: 90% ONTD: 90%	Same Day	Rex, Duke
Genetic Counseling	Counseling prior to test selections	Optional for all	1st trimester	N/A	Same Day	Rex, Duke

ANEUPLOIDY RISK BY MATERNAL AGE (ANY PREGNANCY).

Mother's Age at Delivery	Risk for Trisomy-21	Risk for All Trisomies	Mother's Age at Delivery	Risk for Trisomy-21	Risk for All Trisomies
21	1 in 1,429	1 in 526	**36**	1 in 294	1 in 156
22	1 in 1,429	1 in 500	**37**	1 in 227	1 in 127
23	1 in 1,429	1 in 500	**38**	1 in 175	1 in 102
24	1 in 1,250	1 in 476	**39**	1 in 137	1 in 83
25	1 in 1,250	1 in 476	**40**	1 in 106	1 in 66
26	1 in 1,176	1 in 476	**41**	1 in 82	1 in 53
27	1 in 1,111	1 in 455	**42**	1 in 64	1 in 42
28	1 in 1,053	1 in 435	**43**	1 in 50	1 in 33
29	1 in 1,000	1 in 417	**44**	1 in 38	1 in 26
30	1 in 952	1 in 384	**45**	1 in 30	1 in 21
31	1 in 909	1 in 323	**46**	1 in 23	1 in 16
32	1 in 769	1 in 286	**47**	1 in 18	1 in 13
33	1 in 625	1 in 238	**48**	1 in 14	1 in 10
34	1 in 500	1 in 192	**49**	1 in 11	1 in 8
35	1 in 385	1 in 156			

Genetic Counseling

Genetic Counselors are Master's-trained health care professionals who combine their knowledge of basic science, medical genetics, epidemiological principles, and counseling theory with their skills in genetic risk assessment, education, interpersonal communication, and counseling to provide services to clients and their families for a diverse set of genetic or genomic indications. Genetic counselors help people understand their individual risk for health conditions, testing options available, and interpretation of medical results.

Some couples are comfortable evaluating their prenatal testing options with the assistance of our obstetricians. Many may want a longer and more in-depth discussion. We currently recommend genetic counseling to our 'higher-risk' women. If you would like a referral to a genetic counselor, we are happy to assist you as well.

Genetic counseling is often a part of a specialty physician's evaluation, particularly for women who would like a Detailed-Anatomic ultrasound (see below). For women with abnormal screening test results we recommend the assistance of a genetic counselor to advise you on additional testing options.

Choices for Chromosomal Abnormality Screening

If you have decided you would like to screen for chromosomal abnormalities, both invasive and non-invasive tests are available. A comparison table for the available testing options is shown on the preceding pages. Most commonly, we use lab tests described as Non-Invasive Prenatal Testing (N.I.P.T.). It is a blood testing that was initially limited to women over 35 years old, but in the past ten years it has been refined to provide very accurate results for all ages. Since they don't perform as well, we no longer offer Nuchal Translucency (NT) testing or Quad Screens. Your basic **anatomy ultrasound**, around 18 weeks, is also a type of screen for chromosomal abnormalities.

CVS and **amniocentesis** are invasive tests that involve analyzing a small biopsy from the placenta or a sample of the amniotic fluid. While the results are very reliable (99.5% accuracy) there is a potential for the testing procedure to cause miscarriage. These are typically offered to

women who have had an abnormal screening test first, or at extremely high risk for aneuploidy.

Before deciding, you should feel comfortable with the benefits, risks, and options for prenatal screening for chromosomal abnormalities of the fetus. For these reasons we highly recommend a genetic counseling consultation for our higher-risk women to clarify and assist you with decision making. All other women are offered genetic counseling referral as well. You should understand that an *invasive diagnostic test* may be offered following an *abnormal screening test*. Remember that the prenatal Basic-Standard ultrasound is also a screening test. A Detailed-Anatomic ultrasound (a.k.a. Level II) or invasive diagnostic test may be offered following an abnormal Basic-Standard ultrasound. Lastly, please understand that these prenatal tests are for specific conditions, are not perfect, and cannot detect/exclude all occurrences of chromosomal abnormalities or birth defects.

NON-INVASIVE PRENATAL TEST (NIPT)

NIPT is the newest blood testing available, commercially developed since 2012. Our office uses the MaterniT21 brand test owned by the LabCorp company, and the Unity Complete Fetal Risk Screen from BillionToOne. Other test brands you may hear of include Verifi, Panorama, Harmony, and Prelude. NIPT is an extremely accurate maternal blood test to evaluate for the presence of specific aneuploidies.

How does this test work? DNA from the fetus circulates in maternal blood. Unlike intact fetal cells in maternal blood, which can persist for years after a pregnancy, circulating cell-free fetal DNA (cffDNA) results from the breakdown of fetal cells (mostly placental) and clears from the maternal system within hours. Fetal DNA detected during a pregnancy, therefore, represents DNA from the current fetus. Although only about 10-15% of the cell-free DNA circulating in maternal blood is from the fetus, it can be detected and measured. Quantitative differences in chromosome fragments in maternal blood can be used to distinguish fetuses potentially affected with Trisomy 21, 13, and 18 from those that are not affected. Monosomy X (Turner 's syndrome) and other X and Y chromosome aneuploidies can be detected as well. Basically, if there is an overrepresentation of a specific chromosome fragment, it is likely that the fetus has too many of the that specific chromosome.

Interestingly, this technology can also reveal the sex of the fetus, by the presence or absence of Y chromosome fragments. Please let us know if you would prefer not to know the gender of your baby at the time your results are available. You should not have test done solely to find out the sex of the baby. If you just want to know the sex, at-home tests are available for retail purchase– such as SneakPeek and Peekaboo.

Both the MaterniT21 and Unity tests collect blood from the mother's arm after 9 weeks of pregnancy. Unity can also determine the baby's blood Rh Type. Both tests can be used for twin pregnancies, IVF pregnancies, and pregnancies with donor eggs. The results take about 5-9 business days.

Occasionally there is not enough cffDNA in the mother's blood, and no results for NIPT can be given. The test can be repeated in this situation, since more cffDNA is generally present as the pregnancy progresses. Normal test results are near certain for the absence of these trisomies. Unfortunately, a positive test result is very accurate as well, but an invasive diagnostic test such as chorionic villus sampling (CVS) or amniocentesis should be performed to confirm.

A "negative" NIPT test does not mean that your baby has absolutely nothing abnormal. It only means that Trisomies 21, 18, 13, and the other screened chromosomal anomalies would be extremely rare.

IMPORTANT: This test may have additional out-of-pocket costs for you. You will be billed directly from LabCorp, BillionToOne or your insurer. Arbor is not involved in the billing process. See the provided handouts and visit the laboratory websites. If your insurance is not covering the full cost of testing because you are not at "high-risk", LabCorp and BillionToOne have financial assistance programs that will reduce your cost to $300 or less.

★ *More Information*

womenshealth.labcorp.com … *Website for LabCorp's Integrated Genetics division and information about the MaterniT21 NIPT test. Click on the Patients tab and follow the link options.*

unityscreen.com/patients … *Website for BillionToOne's patient information site regarding the Unity Complete Screen. Scroll through the information.*

CHORIONIC VILLUS SAMPLING (CVS)

CVS is usually done between 10-12 weeks gestation. Small samples of chorionic villi, which are part of the placenta, are biopsied. The biopsy is collected using ultrasound and a needle placed either through the abdominal wall or the vagina. If you choose this option, we will refer you to maternal-fetal specialists at Duke (Blue Ridge Rd.) or UNC Rex for counseling and the office procedure. The advantage of this test is that results are determined at an earlier gestational age than amniocentesis. The disadvantage is that the risk of fetal loss (miscarriage) is higher, around one percent.

AMNIOCENTESIS

Amniocentesis is usually performed after 15 weeks. It involves ultrasound guided placement of a needle through the abdominal wall and uterus, to collect some of the fluid from around the baby. Testing can include chromosomal abnormalities, such as Down syndrome, and tests for the presence of open neural tube defects such as spina bifida and anencephaly. If you choose this option, we will refer you to maternal-fetal specialists at Duke or UNC Rex for counseling and the office procedure. The risk of pregnancy loss after amniocentesis is performed is approximately 1/300 – 1/500.

Amniocentesis is not just for genetic screening. Some women have medical or historical conditions for which there may be a benefit to early delivery (36-37 weeks). In this situation, late in pregnancy, amniotic fluid obtained by amniocentesis can help us know whether your baby's lungs are "mature." This procedure is performed by the Arbor physicians, either in our office or at Rex.

Screening for Neural Tube Defects (Spina Bifida)

An open neural tube defect (ONTD) occurs when the baby's spinal cord or brain does not form properly. This occurs in 1 out of every 500-1,000 births. Spina bifida literally means "split spine," and is a type of ONTD when an opening forms in the developing spine. This opening may not be covered by skin and the exposed nerves may be damaged. The different types of ONTDs include spina bifida, meningocele, and meningomyelocele. Taking a prenatal vitamin containing at least 400 mcg of folic acid for one month prior to conceiving is the best way to prevent ONTDs.

Depending on the location and severity of the defect, the child may have difficulty walking, problems with bladder or bowel control, a buildup of fluid around the brain, or intellectual disabilities. Some of these babies are candidates for surgery—even before delivery—that can help decrease the severity of the disease. ONTDs can be diagnosed before delivery with several methods including focused ultrasound, an AFP measurement, or amniocentesis.

Current recommendations are for a high-quality ultrasound to be completed around 18-20 weeks. Part of the anatomic survey is to look at the spine. Only when the visualization is suboptimal, do we recommend the maternal AFP blood test.

AFP (alpha-fetoprotein) is a blood test for the mother, and performed between 15 and 21 weeks gestation. AFP is produced by the baby, and is present in its spinal fluid. A leak in the spinal cord covering allows the AFP to enter the mother's blood, and elevates her level.

6. Genetic Carrier Screening Tests

The purpose of genetic carrier screening is to determine if a couple is at an increased risk for giving birth to a child who will have a genetic disorder. In most cases **carriers** of these conditions show no symptoms of the disease and are unaware of their risk. Genetic carrier screening is a laboratory test performed on blood or other samples from each parent. We test the mother's blood first. If she is a carrier for a disease then we will test the father of the baby (Inheritest/Labcorp) or can test the baby with the same sample (Unity/BillionToOne).

Although there are literally hundreds of inherited genetic disorders, professional guidelines suggest that we offer screening only for Cystic Fibrosis (CF) and Spinal Muscular Atrophy (SMA). Fragile X Syndrome (Fragile X) is a form of inherited intellectual disability that we offer in women with concerning family history.

Like NIPT screens, we use LabCorp and BillionToOne for genetic carrier testing. Again, each insurance policy is different so please review the Insurance and Billing item on their webpages, and contact your insurer if you have questions regarding your payment obligation. We are not able to offer other lab company's tests, but would be glad to refer you to a genetic counselor who will have expanded access.

Genetic screening can be done before, during, or after a pregnancy. The results should not change during your lifetime. The decision to accept or decline testing is entirely up to the individual or couple. Knowing these results can help families plan with confidence.

These tests are highly accurate. But keep in mind that a negative test significantly reduces – but does not eliminate – the chance of being a carrier.

By law the State of North Carolina also requires newborn screening for several disorders and conditions, and all babies born at Rex Hospital will be screened with a "heel stick" blood sample shortly after birth. Cystic Fibrosis and Spinal Muscular Atrophy are included in the state screen. However, knowledge of an affected baby in advance will allow for early and excellent treatments.

★ More Information

slph.ncpublichealth.com/newborn … *State Lab of Public Health, as part of the North Carolina Division of Public Health. Information on Newborn Screening, and the Disorders and Conditions tested.*

www.integratedgenetics.com/patients/pre-pregnancy/inheritest … *Website for LabCorp/Integrated Genetics. Launch point to explore maternity and genetic carrier screening test and options. Cost estimator tool.*

unityscreen.com/patients … *Website for BillionToOne's patient information site regarding the Unity Complete Screen. Look at the Recessive Conditions section. This testing is included (no-charge) with the Unity NIPT Screen.*

Cystic Fibrosis (CF)

Cystic Fibrosis is a life-long illness that affects about 1 in 3,300 people in the United States. It causes the body to produce abnormally thick mucus, leading to life threatening lung infections, digestion problems, diarrhea, poor growth and infertility. Symptoms of the disease range from mild to severe. Individuals with mild CF may reach adulthood and be unaware that they have the disease. However, the average life span for individuals with CF is 37 years. CF does not affect intelligence.

If both parents are carriers of an abnormal CF gene, then with each pregnancy there is a 1 in 4 (25%) chance that the child will be affected with CF.

Cystic Fibrosis is the most common fatal genetic disease in North America. The rate of defective CF genes varies in different groups of people. In Caucasians, one in every twenty-nine individuals is a carrier of a CF mutation, and roughly one in every 3,300 newborns will have cystic fibrosis. In Hispanic populations, the carrier rate is lower, at 1 in 46, with

about one in 8,000 to 9,000 children being affected. In African Americans, 1 in 65 is a carrier, with a newborn rate of roughly one in 15,000. Among Asian-Americans, one person in 94 is a carrier, and among their newborns, only one in 32,000 will have CF. Persons of Jewish heritage have the highest carrier rate, as do women with Cajun or French-Canadian ancestry.

For CF to occur a person has to inherit an altered gene from each parent. If a person inherits one copy of a CF gene with a mistake, that person is a "carrier" for CF, but does not have the disease consequences of Cystic Fibrosis. There are no known health problems associated with being a carrier. To have CF, an individual must inherit a similarly defective CF gene from both carrier parents. If both parents are carriers, there is a one in four chance that any one of their children will have CF.

A DNA blood test can tell a patient whether they are likely to be a carrier of a defective CF gene. This DNA test looks for the most common mutations in the CFTR gene but cannot detect every possible gene change. Our test from LabCorp labs tests 97 different gene mutations. The detection rate for is about 95% in Caucasians, while among other groups it can be as low as 56% (see More Information below). This means that among some ethnic groups with very low rates of being CF carriers, the blood test is only likely to detect this a little more than half the time. However, a negative test can be helpful in all ethnicities, and the remaining chance of a disease-causing mutation is quite low (Caucasian 1:481, Hispanic 1:282, African American 1:357, Asian 1:212).

If the initial blood testing returns positive for a defective CF gene, your partner is recommended to be tested. If his test returns negative, the likelihood of having an affected child is very low.

If the testing should be positive for both the patient and her partner, the likelihood that any child born to them will have cystic fibrosis is one in four. Additional testing during the pregnancy can show whether the fetus will have cystic fibrosis. Chorionic villus sampling (CVS, see First Trimester Screening Tests) can be performed between 10 and 14 weeks of pregnancy. A more common test called "amniocentesis" may be performed after the 15th week. For amniocentesis, a thin needle is inserted under ultrasound guidance into the fluid surrounding the baby in the

womb. A small amount of the fluid is then withdrawn and the cells found therein are analyzed for the CF genes.

CVS and amniocentesis carry some degree of hazard to the pregnancy. If a patient decides not to have this prenatal testing, a simple test done on a sweat sample may be performed soon after birth.

★ More Information

www.cff.org… *The Cystic Fibrosis Foundation. Comprehensive information from this advocacy foundation, discussing testing, treating, and living with CF.*

www.genome.gov/10001204… *National Human Genome Research Institute at the National Institutes of Health. This page has list of specific genetic disorders that you can click on, to review frequently asked questions.*

Spinal Muscular Atrophy (SMA)

Spinal Muscular Atrophy is the most common genetic cause of infant death. Every year, about 1 in every 6,000-10,000 births are born with this disorder. Neary 1 in 50 people in the United States are carriers and do not know it. It is an autosomal recessive disorder where if both parents are carriers of an abnormal gene there is a 1 in 4 risk (25%) that the child will be affected by SMA. There are 4 types of SMA with Type 1 being severe.

This is a progressive degenerative disorder characterized by muscular weakness that over time will cause functions such as eating, swallowing and breathing to become harder and harder to do. Type 1 SMA, the most severe form, affects over 70% of children born with this genetic disorder. Intellectual deficits are not associated with SMA.

In the past five years, three treatment options have become available that have changed the future for SMA diagnosed families. If you receive a diagnosis of SMA through genetic screening, there are options and hope. There is no cure, but treatment stops the disease from progressing allowing these children to be as functional as possible.

All couples planning a pregnancy should consider testing, as well as those with a family history of SMA. Fortunately, since 2020 your baby's North Carolina newborn state screening test will now include testing for SMA. However, prenatal preparation can still make a bigger difference.

> *"I had never heard of SMA until my son was diagnosed at 14 months. Our world exploded and I feel so grateful that there is treatment (Duke Hospital has a specialized SMA team.) I cannot urge families enough to seek out screening, as we would have gotten treatment for our son prior to greater deterioration of his motor neurons. "*
>
> *–Parent of SMA Type 2 child and Arbor patient*

★ More Information

curesma.org … *Cure SMA organization fund research and individuals with SMA and their families with support. The webpages have a parent-focused approach to SMA diagnosis, treatments, and expectations.*

www.smafoundation.org/about-sma … *The SMA Foundation. The organization's mission is to accelerate the development of treatments for SMA. Webpages have an overview of SMA, as well as FAQs and information of patients.*

Fragile X Syndrome (Fragile X)

Fragile X Syndrome affects approximately 1 in 4,000 males and 1 in 8,000 females. Most males with Fragile X Syndrome have a significant intellectual disability. The spectrum ranges from learning disabilities to severe intellectual disabilities and autism. About one third of the females affected with Fragile X Syndrome have a significant intellectual disability. Others may have more moderate or mild learning difficulties.

The name "Fragile X" relates to unique arrangements of DNA on the X chromosome. Males are disproportionately affected since they only have one X chromosome.

Fragile X is the most common inherited cause of mental impairment. Only the mother must be a carrier for the child to be at risk for Fragile X Syndrome. If a mother is a carrier, there is a 50% chance that the child will be affected with Fragile X Syndrome. 1 in 259 women are carriers. Fragile X Syndrome is found in all ethnic groups and can occur in families with no history of intellectual disabilities or autism.

Women should consider testing only if they have a family history of unexplained intellectual disabilities, a personal or family history of developmental delays or autism. This test is not recommended for screening the general population.

★ More Information

www.fragilex.org … *The National Fragile X Foundation. Click on the "Fragile X-associated Disorders" menu, to explore the disease and testing information.*

www.genome.gov/10001204 … *National Human Genome Research Institute at the National Institutes of Health. This page has a list of specific genetic disorders that you can click on, to review frequently asked questions.*

7. Ultrasounds in Pregnancy

Ultrasound is a safe and effective way to assess the health of your growing baby. Almost all your ultrasounds can be performed in our office. Most pregnancies require just two ultrasounds; most insurances will only reimburse two ultrasounds. The first is to establish a due date and the second to survey the developing anatomy. The need for additional ultrasounds is based on our professional medical concern that potential fetal problems exist (e.g., too big, too small, breech). Some changes in your health may require an ultrasound to assess the well-being of the baby, such as after vaginal bleeding in early pregnancy. Lastly, some ultrasounds are part of standard fetal surveillance based on increased fetal risks due to your medical conditions: hypertension, diabetes, obesity, or a previous stillbirth for example. We cannot provide ultrasound evaluations without a firm medical indication.

Typically, you will have a check-up appointment immediately following any ultrasound. This allows us to review the findings with you right away and answer any questions.

Please keep in mind that an ultrasound is a medical diagnostic procedure. As such, videotaping and photographing the exam or monitors is not permitted. (We look forward to giving you some prints, and can send digital copies of your second trimester visit). While viewing the baby can be an exciting time for you, our sonographers must concentrate and work efficiently. We ask you to be respectful of their space and time.

First Trimester Dating Ultrasound

On your first visit, when you have suspected pregnancy after absence of your menstrual cycle, we will frequently complete a transvaginal ultrasound. Early ultrasounds like this are extremely helpful in establishing a due date and confirming the ongoing viability of the pregnancy. We look at the uterine structure and the ovaries as well. We also count the number of babies inside! You may have had this done at another practice already if you are transferring-in to Arbor ObGyn.

Second Trimester Screening Ultrasound

Between 18 and 20 weeks of gestation, you will undergo another ultrasound to evaluate your developing baby. At this time, almost all the fetal anatomy can be visualized in detail. During this Basic ultrasound we will evaluate the fetal brain, facial structures, heart, spine, stomach, kidneys, bladder, legs and arms. If you would like to know, we are almost always able to determine the sex of your baby as well. At the same time, the ultrasonographer will obtain measurements of the head, abdomen and legs to assure that the size and your due date coincide indicating appropriate growth for your baby. However, your due date will not be changed, and the ultrasound does not predict when your baby will be born. Lastly, the ultrasonographer will evaluate the placenta and its location. We have a checklist of features to evaluate on the Basic ultrasound. Uncooperative babies (!) may need to return to your next regularly scheduled visit to complete the exam.

You must be at least 18+0 weeks along to have your Basic Ultrasound in our office. The fetal anatomy is not sufficiently developed for evaluation until that time. We can't make exceptions just to tell the sex – so please arrange your gender-reveal plans with this in mind!

For some ultrasound findings we might recommend referral on to have a Detailed ultrasound (also called Anatomic, Genetic, Targeted, or Level II) with the perinatology office at Duke or UNC Rex. A Detailed ultrasound has an expanded checklist of anatomic features and is reviewed by the Maternal-Fetal Medicine specialist.

Some women will have the Detailed ultrasound *in lieu of* a Basic ultrasound. These circumstances might include if you are over 35 years old, have a history of babies with birth defects, have twins, or an abnormal screening test at our office. You will not have both a Basic and Detailed ultrasound; it will be one or the other.

3D/4D Ultrasound

We know that many of our patients are eager to see what their developing baby looks like and will pursue a 3D/4D ultrasound. We are no longer able to offer 3D/4D keepsake ultrasound, due to time constraints. There are several ultrasound Boutiques in the community that will provide you with a pleasant session, however.

Three dimensional (3D) capable ultrasound machines allow multiple still images to be acquired and rendered as a 3D image of the fetus. These machines can provide fascinating images of the fetal face and body.

4D takes 3-dimensional ultrasound images and adds the element of time to the process. The result: live action images of your unborn child.

We don't feel that there are any significant risks to having an ultrasound by an experienced and registered sonographer. 2D, 3D, and 4D ultrasound all utilize sound waves to look inside the body. A probe placed on the body emits sound waves into the body, listens for the return echo, and then generates an image. Care should be taken to limit the ultrasound wave to the minimum necessary to capture the image.

Between 27 and 32 weeks of pregnancy is the ideal time to obtain the best images of your baby. Prior to this the fetus has too much of a skeleton-like appearance.

We do not sign 'permission' notes to have a 3D/4D ultrasound at a community commercial center. We generally will not act upon comments made by the commercial sonographers, such as "your baby seems big," "there is a cord around the neck," "the fluid seems low," etc. Commercial 3D/4D ultrasounds are not for screening or diagnosis and are not reviewed by on-site obstetricians or radiologists. Please review their consent forms carefully.

8. Required Prenatal Laboratory Tests

Many diseases and conditions that can affect your baby's health are not readily observable in your day-to-day life. For this reason 'universal' lab testing is done to screen for the more common and concerning conditions. Some of these tests are required by law in the State of North Carolina and others are recommended by national Obstetrical academic organizations. Normal results are sent to you via the patient portal, and reviewed with you at your next appointment.

We use **UWH of the Carolinas Laboratory** for Pap tests and vaginal STD tests. For blood and urine, **LabCorp** is our preferred laboratory vendor, and they provide lab technicians in our office for your convenience. LabCorp bills you or your insurance directly. However, you do not need to have all your lab testing performed in the Arbor ObGyn office: LabCorp has many satellite offices in the Triangle region that may be more convenient. You may walk-in to their lab office, or even make an online appointment at www.labcorp.com. All the lab test orders are sent from Arbor electronically and will be obtainable anywhere in the entire LabCorp system for six months

★ More Information

www.acog.org/womens-health/faqs/routine-tests-during-pregnancy … *ACOG's list of routine prenatal tests, and questions about the tests*

First Trimester Tests

We took a lot of blood at the first visit, huh? These blood tests are essential to verify a healthy start to the pregnancy. As noted, many are required by North Carolina state law. We assessed you for anemia, the presence of sickle cell disease and determined your blood type. We confirmed your immunity to Rubella. A urine sample was collected to screen

for urinary tract infections. North Carolina requires testing for HIV, Hepatitis B, Hepatitis C, Chlamydia, Gonorrhea, and Syphilis. Some of these tests must be repeated in the third trimester and again upon hospital admission, by N.C. law.

Urine Samples

We needed a urine specimen on your first visit to determine whether you have an asymptomatic urinary tract infection. Pregnant women with bacteria in their urine are likely to develop pyelonephritis – a serious kidney infection.

If more specimens are needed we will ask you to collect your urine in a sterile cup provided by our office. Instructions for obtaining a "clean catch" specimen are posted in the restrooms. The clean catch technique ensures that we avoid contaminating bacteria from your genital skin. Your sample will be sent to an outside laboratory for the urine culture which takes several days to complete.

To obtain the "clean catch" sample:

1. Label your cup with your full name and birth date.
2. Wash your hands with soap and warm water. Carefully remove the lid from the sterile cup. Do not touch the inside of the cup or lid.
3. Spread the labia (folds of skin) apart with one hand and wipe the urethra with the towelette provided. Wipe from the front to the back – from the urethra towards the rectum.
4. Continue holding the labia apart so no urine touches them. As you start to urinate, allow a small amount of urine to fall into the toilet bowl. This clears the urethra of any contaminant.
5. After the urine stream is well established, urinate into the cup. Once the urine fills the cup halfway, remove the cup from the urine stream.
6. Pass your remaining urine into the toilet.
7. Screw the lid on the cup securely, avoiding contact with the inside of the cup or lid.
8. Place the closed cup on the stainless-steel pass-through window, and rotate to deliver the cup to the nursing station.
9. Wash hands!

We do not collect routine urine samples at every obstetric visit! In previous years we analyzed sugar and protein levels but modern research has demonstrated that this is an ineffective way to screen for diabetes and preeclampsia. If your blood pressure is elevated in the third trimester then we will reflexively ask for a urine sample. Women who take antihypertensive medications will still give a urine sample at each visit beginning at 28 weeks.

If you have urinary symptoms or have any concern for an infection, please let the nurse know before you provide a sample. Lastly, if you have a second or third trimester (abdominal) ultrasound scheduled try to preserve as much urine in your bladder as possible.

Lab Testing for Gestational Diabetes

Gestational Diabetes Mellitus (GDM) affects about five percent of pregnancies. Untreated, it can affect both the mother and the baby. Complications for the baby can include macrosomia (too big), hypoglycemia (low blood sugar at birth), jaundice, and difficulty breathing. For the mother GDM can persist as chronic diabetes. Some women are already at increased risk for developing GDM, and we may recommend initial testing after your first appointment.

As you approach 28 weeks a test for GDM is administered to all patients. Although not strictly required, to reduce false-positive testing we ask our patients not to eat or drink anything besides water for 1-2 hours prior to the visit. On arrival you will then drink our glucose-containing solution (Glucola). Many women have anxiety about this drink after hearing stories from well-intentioned friends. It's a refrigerated flat flavored 'soda.' Our brand is BVO free EasyDex. The most common reaction afterwards is, "that wasn't too bad!" If you would like an alternative drink, Labcorp has authorized The Fresh Test drink. You will need to purchase the 50-gram powder or liquid online, and bring it with you to consume at your appointment.

One hour later a blood sugar measurement is obtained. If you pass this initial screen for GDM, as most do, no further testing is necessary. Fifteen percent of women will have an glucose level > 140 mg/dL, and so a confirmatory 3-hour glucose tolerance test is arranged. This should be done in the Arbor office.

If you have two or more abnormal blood glucose values (out of four) in your 3-hour test, you are diagnosed with gestational diabetes. We will arrange consultation at UNC Rex or Duke with a diabetic educator. She will also teach you how to measure your own blood sugar at home with a glucose meter. We will also see you more frequently in the office, approximately every 2 weeks to check on your blood sugars. Some patients are not able to manage their blood sugars with diet alone and will need insulin shots.

If you have just one abnormal value on your 3-hour test you do not have gestational diabetes. However, it does suggest that you may have some degree of insulin resistance due to pregnancy. We will give you a suggested diet to follow to maximize healthy outcomes for you and the baby.

Some women may have more risk-factors for gestational diabetes and require additional 1-hour testing in the first half of pregnancy: obesity, history of GDM, an exceptionally large previous baby, Polycystic Ovarian Syndrome.

Gestational diabetes generally resolves with delivery. You do not need to keep checking your blood sugar after delivery. We will arrange for a 2-hour test after your postpartum visit to screen for persistent insulin resistance/diabetes.

★ More Information

www.govinfo.gov/content/pkg/GOVPUB-HE20-PURL-LPS79951/pdf/GOVPUB-HE20-PURL-LPS79951.pdf … *From the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDKD) introduces gestational diabetes with the PDF pamphlet "What I Need to Know About Gestational Diabetes".*

Rh Factor Screening and RhoGAM

The Rh factor is one component of your blood type: it is the "positive" or "negative" portion. Women who do not have the Rh factor are designated as Rh-negative (e.g. O-neg, A-neg, B-neg). If you are Rh-negative, and if the father of the baby is Rh-positive, there's a 50% chance that the baby will have the Rh factor. If the father is Rh-negative, you should not be concerned. If you are Rh-positive, you also should not be concerned, no matter the father's Rh type.

Rh-negative status is uncommon, and varies by race in the United States: Caucasian (15%), Black (8%), Hispanic (8%), Native American (1%), and Asian (1%).

Your blood and the baby's blood are not designed to mix. Rather, all the nutrients, oxygen, and waste are transferred across the placenta. Some of the fetal blood can leak into your circulation, however. When this happens your immune system can view the Rh factor as foreign. If your immune system reacts to the Rh factor it will remember it and generate antibodies like a vaccination provides. When you become pregnant again your immune system will develop a very strong reaction to an Rh-positive baby. This can cause significant fetal anemia, brain damage, and even fetal death.

Medical prophylaxis for Rh-negative women is by administering Rh immunoglobulin, commonly known by the RhoGAM or Rhophylac brand names. RhoGAM is essentially antibodies that serve as a surrogate antibody against Rh factor, so that your own immune system doesn't need to generate any. Antibodies search for, sequester, and remove any circulating Rh factor in the mother's blood. We administer a shot of RhoGAM at 28 weeks or anytime there is concern for trauma or bleeding. The RhoGAM stays in your blood system effectively for about 12 weeks.

If the mother is Rh-negative, the baby's blood type is tested upon delivery. If the baby is Rh-positive then we recommend one additional postpartum RhoGAM shot to suppress the development of any new antibodies. If the baby is Rh-negative then no additional shot is required. Unfortunately, currently there are no readily available tests to identify the baby's blood type prior to delivery.

Again, we incorporate Rh antibody screening and RhoGAM administration into your 28-week appointment.

** Starting in 2024, we now have the capability to determine your baby's Rh Factor status, via your early NIPT screening test. The Unity Complete test can give us a reliable prediction if your baby is Rh(+) or Rh(-). If you baby is Rh(-) from that test, then you do not need to have any RhoGAM shots at all.

★ More Information

www.acog.org/womens-health/faqs/the-rh-factor-how-it-can-affect-your-pregnancy… *ACOG's FAQ Sheet, "The Rh Factor: How It Can Affect Your Pregnancy".*

www.rhogam.com… *The interesting history of RhoGAM development, and patient information from the manufacturer of RhoGAM.*

Group B Strep and Pregnancy

Group B Strep (GBS) is a normal bacterium that inhabits the vagina and rectum of 25% of pregnant women (Group A Strep is different and causes "strep throat"). GBS is not a sexually transmitted disease. Most women have no symptoms and are simply considered to be 'colonized' with GBS. Rarely, a woman can develop a bladder or uterine infection. GBS colonization levels fluctuate over the woman's lifetime and may become undetectable at some point.

The most serious health concern is that a pregnant woman can pass the GBS to her baby during childbirth. GBS infections in the newborn can be extremely serious, including lung infections, blood infections, and meningitis. Some GBS exposed babies can become ill even after the first week of life. Concerning symptoms at that point include inactivity, irritability, poor feeding, vomiting, and/or high fever. Consult your pediatrician when you are concerned.

To help prevent newborn infections the current recommendation is to test *every* pregnant woman for GBS between weeks 35 and 37. It doesn't matter whether you tested positive or negative in a prior pregnancy. To collect a sample a swab is used along the vaginal walls and rectum. The results will be available in a few days and we discuss them with you at your next appointment or post them to the web Portal.

If the test is positive for GBS we will recommend treatment with intravenous (IV) antibiotics *during* your labor. Antibiotic treatment prior to labor is not helpful. Penicillin is the preferred antibiotic. (If you are allergic to penicillin we have alternative antibiotics available.) This can help significantly reduce the GBS levels in the vagina. The dosing interval is every 4 hours until delivery. Adequate treatment requires at least two doses of the antibiotic.

If your urine had GBS identified during the pregnancy (frequently on our first trimester screening culture), then we presume you have enough GBS present to colonize the vagina. We recommend automatic labor treatment with antibiotics in this situation and so retesting at 35-37 weeks is not necessary. If you have had a previous baby actually infected with GBS you will also receive automatic treatment. Lastly, if you are delivering before 37 weeks and have not had the GBS test, you will be treated. Women who deliver prior to optimal treatment can expect to have their newborn observed more closely by their pediatrician for the first few days of life.

If you have a planned C-Section, you do not need antibiotics for GBS since the baby is not passing through the vagina. Antibiotics are recommended, however, if your water has broken or if your labor has started. Therefore, we perform the GBS test for *every* woman.

In summary, Group B Strep is a <u>normal</u> bacterium inhabiting the lower genital tract of many patients. Only pregnant women should be concerned if they have GBS. It will cause infections in 1 of 200 mothers who are untreated. Adequate antibiotic treatment reduces newborn GBS disease to only 1 in 4,000 chances! Please be aware if you have GBS so that we can be efficient in treating you when you arrive in labor.

★ More Information

www.acog.org/womens-health/faqs/group-b-strep-and-pregnancy … *ACOG's FAQ Sheet, "Group B Strep in Pregnancy".*

www.cdc.gov/group-b-strep/index.html … *From the Centers for Disease Control and Prevention (CDC). Explore the links Screening, Symptoms, and Prevention. All our pregnancy and newborn guidelines for GBS originate from the CDC.*

9. Common Pregnancy Concerns

A good book of pregnancy expectations and advice can be helpful during your pregnancy. As recommended in the earlier, consider *Your Pregnancy and Childbirth: Month to Month*, Revised Seventh Edition 2021, from the authoritative American College of Obstetricians and Gynecologists (ACOG, $19.95) – www.acog.org/store/products/patient-education/books/your-pregnancy-and-childbirth-seventh-edition. Below is a discussion of some of the more common pregnancy discomforts and concerns you may experience and some suggestions we have for relief.

First Trimester Bleeding and Cramping

Vaginal bleeding in pregnancy has many causes. Some are serious and some are not. Bleeding can occur early or later in pregnancy. Slight bleeding often stops on its own. Sometimes, bleeding may pose a risk to you or your fetus. Consider calling us when worrisome bleeding occurs.

Bleeding in the first trimester is quite common. The only way to assess your pregnancy is with an ultrasound exam. If you have not yet had an ultrasound in our office and are bleeding—especially if it is associated with pain—we need to evaluate you for the possibility of an ectopic tubal pregnancy. If you have already had a normal ultrasound you do not need to be concerned for an ectopic pregnancy.

In early pregnancy, unfortunately, there is little to do if bleeding is present or if a miscarriage seems likely. We can only update you on the baby's heartbeat and possibly identify a source for the bleeding. For this reason we encourage you to simply call our office to be seen during regular hours. In the evenings and weekends Rex Hospital requires women with pregnancies less than 20 weeks to be seen in the main Emergency Room by the ER and Radiology staff.

Your cervix is especially sensitive during pregnancy and therefore spotting may occur after a vaginal ultrasound or a pelvic exam. Bleeding of the cervix may also occur during sex or from an infection of the cervix. If you experience bleeding do not have sex again until consultation with the doctor. You may also want to decrease heavy physical activity and

exercise, although most women can continue work and their usual day-to-day activities.

Keeping a record of spotting, bleeding, cramping, and other symptoms can be helpful for your doctor.

Bleeding may be an indicator of an impending **miscarriage**, but it certainly does not always mean that miscarriage will happen. The following signs and symptoms may indicate a miscarriage: (1) vaginal bleeding, (2) cramping pain felt low in the abdomen--often stronger than menstrual cramps, (3) tissue passing from the vagina.

Miscarriage can occur at any time in the first half of pregnancy. Most often it occurs in the first 13 weeks. It happens in about 15–20% of pregnancies. Many women who have vaginal bleeding have little or no cramping. Sometimes the bleeding stops and pregnancy goes on. Other times the bleeding and cramping may become stronger, leading to miscarriage.

Miscarriages cannot be prevented. They are often the body's reaction to a pregnancy that was not normal. There is no proof that exercise or sex causes them. Also, there is no proof that stress or work causes them. Having a miscarriage does not mean you cannot have more children. Less than 5% of women will experience two consecutive miscarriages, and only 1% experience three or more. It does not mean something is wrong with your health.

Morning Sickness, Nausea, & Vomiting

Nausea and vomiting are quite common complaints in early pregnancy and are related to many factors. They usually peak in the 10th week and completely resolve by the sixteenth week or so. Because low blood sugar levels can add to the severity it's wise to eat frequent small meals and even to have a snack when you get up to go to the bathroom in the middle of the night. Avoid greasy high-fat foods and foods with strong odors. Prenatal vitamins sometimes add to the problem, and if so, please discontinue them until you feel better. If you can, try taking at least 800 mcg of Folic acid daily. This usually does not worsen nausea. (We have samples of prescription prenatal vitamins. Try them all to find one that is well tolerated.)

To avoid gastric reflux and heartburn which is increased in pregnancy avoid lying down immediately after eating. To decrease the gag reflex do not brush teeth immediately after eating.

Most pregnant women are appropriately concerned that they eat properly. However, if you are having significant nausea and vomiting this may be difficult. It is far more important that you eat some calories, rather than waiting for something perfectly nutritious. If you can't keep anything down your body will begin to break down muscle tissue to furnish energy. So if you can supply outside energy in almost any form this breakdown can be prevented. Therefore, even food that might be considered less than ideal is much better than throwing up a balanced meal! During the difficult weeks please eat whatever appeals to you and stays down.

If the above suggestions do not work, try:

- **Bonjesta** and **Diclegis** are prescription versions of pyridoxine and doxylamine, and Category-A medicines. Call our office for samples or a prescription. These are the first choice of prescription medications. Diclegis is now available as a generic.
- Vitamin B6 25-50 mg (pyridoxine) every 6 hours, taken with/without Unisom 25 mg SleepTabs (doxylamine), ½ tab at bedtime.
- Claritin (loratadine) 10 mg daily.
- Sea-Band type wristbands (acupressure therapy), *www.sea-band.com* .
- Ginger tea, lozenges.

If your nausea is still severe, prescription medicines such as Phenergen (promethazine), Reglan (metaclopromide), or Zofran (ondansetron) may be recommended.

For a few women, severe morning sickness can become debilitating. We use the diagnosis Hyperemesis Gravidarum for these women, or simply "hyperemesis." Below is a table from the HER Foundation that helps distinguish between the two.

★ More Information

www.helpher.org… *The Hyperemesis Research and Education Foundation. This is great for any women struggling with morning sickness. Click on the "Mothers" heading, and explore!*

COMPARISON OF NAUSEA & VOMITING IN EARLY PREGNANCY.

Morning Sickness	**Hyperemesis Gravidarum**
You lose little if any weight.	You lose 5-20 pounds or more. (> 5% of pre-pregnancy weight)
Nausea and vomiting do not interfere with your ability to eat or drink enough each day.	Nausea and vomiting cause you to eat very little and get dehydrated from vomiting if not treated.
You vomit infrequently and the nausea is episodic but not severe. It may cause discomfort and misery.	You vomit often and may vomit bile or blood if not treated. Nausea is usually moderate to severe and constant.
Dietary and/or lifestyle changes are enough to help you feel better most of the time.	You will probably require fluid hydration through a vein and/or medications to stop the vomiting.
You typically will improve gradually after the first trimester, but may be a little queasy at times during the remainder of your pregnancy.	You usually feel somewhat better by mid-pregnancy, but you may continue to be nauseous and/or vomit until late pregnancy.
You will be able to work most days and care for your family.	You will likely be unable to work for weeks or months, and may need help caring for yourself.

Constipation

Many factors including hormones, activity, the enlarging uterus and others can increase constipation, one of the most frequent complaints of pregnant women. Remember to eat plenty of fruit and vegetables, drink lots of liquids, and use bran-type cereals and other high fiber foods. Exercise is also helpful. You may also try a stool softener such as Colace/Surfak (docusate) or a bulk-laxative such as Metamucil or Citrucel. Miralax and Milk of Magnesia are also okay to use in pregnancy. Try to avoid repeated use of strong stimulant-laxatives, since these can dehydrate you. See the "Safe Medications" table.

Faintness, Dizziness, and Fatigue

Blood vessels and blood pressure react differently during pregnancy and this can cause you to feel faint or dizzy. Dehydration and low blood sugar seem to make the symptoms worse and should be avoided. Being extra warm, standing for long periods of time, and getting up quickly can all increase the problem too. Since anemia can also contribute to fatigue, please let us know so that we can check your blood hemoglobin at the office.

Headaches

Headaches in pregnancy are quite common, but are especially prevalent during the thirteenth through twentieth weeks of pregnancy.

To help decrease headaches avoid dehydration, excessive caffeine, going long periods without eating, noxious fumes, etc. Riboflavin (Vitamin B-2) over-the-counter supplement can help prevent headaches when taken as 200 mg twice each day. Magnesium Bisglycinate 160 mg twice daily can also be helpful in reducing headache frequency and severity.

Headache relaxation techniques such as warm baths, walks in the fresh air, breathing exercises and massages may be helpful. Pain relievers such as Tylenol (acetaminophen) may be used, but don't forget simple measures such as cool compresses to the forehead, or resting in a quiet, dark room. You can take up to 1,000 mg of Tylenol every 8 hours, a total

3,000 mg maximum in 24 hours. Do not take Tylenol for more than a couple of days in a row. Do not take products containing aspirin or ibuprofen, such as Advil or Motrin.

If you are also experiencing sinus pressure over-the-counter cough/cold medicines are safe to take in the second and third trimesters and a cool humidifier may be helpful. If there is green or yellow nasal discharge persisting for more than one week call the office for an appointment. If the headache is accompanied by visual changes or neurologic symptoms such as numbness or weakness, please call. If you are prone to migraines please discuss options for management with one of the providers.

Hemorrhoids and Varicose Veins

Hemorrhoids are caused by the general increase in blood volume as well as relaxation of blood vessels throughout the body, and by pressure from the enlarging uterus on veins in the legs, vulva, and rectum. Constipation and straining most definitely aggravate the problem and should be avoided.

Local applications of Tucks pads, Anusol, or Preparation H may be helpful. Soaking in a warm tub of water or applying warm compresses can help relieve symptoms too. Hemorrhoids usually improve dramatically after delivery.

A sudden and severe increase in pain from hemorrhoids may signal the formation of a blood clot which, although not hazardous, will usually take some time to resolve. Please let us know if this occurs so that we can see you in the office to confirm this disorder and take steps to resolve it or refer you to a local proctologist.

The best way to manage hemorrhoids is to avoid them. Staying well hydrated, having adequate fiber in your diet and the use of a stool softener can all help prevent the formation of hemorrhoids.

Varicose veins occur during pregnancy due to the increased blood volume and relaxation of blood vessels, combined with an inherited tendency to develop them. They are usually not hazardous but can be uncomfortable. Moderate exercise, elevation of the legs, and full-length support hose can help somewhat. Try to avoid standing for long periods

of time, crossing your legs at the knee, and constrictive clothing. Please notify us if you have severe calf or leg pain, especially if there is a specific area of tenderness or redness.

Vaginal Discharge

Increased estrogen levels cause most women to note increased vaginal discharge during pregnancy, especially in the third trimester. This is normal and not a cause for concern. However, if the discharge develops a foul odor or green color please let us know. If you think you have a yeast infection, over-the-counter creams are okay to use. If your symptoms are not improving you will need to be seen in our office.

Round Ligament Pain

Growing pains! In the second trimester many pregnant women experience sudden, brief pain in their lower abdomen described as "pulling," or sharp in nature, usually worse on one side. These often occur with standing up from sitting, rolling over in bed, coughing, sneezing, or other maneuvers which change the direction of stress on the abdominal wall connective tissue. Anatomically, the "round ligaments" suspend the uterus by exiting the top of the uterus, attaching to the side of the pelvis wall, passing through the groin, and ending in the outer labia. Similar pains can also be traced to hormone-induced changes in abdominal wall muscles and ligaments.

These discomforts represent no hazard to you or the baby but can be quite uncomfortable. Tylenol or a warm washcloth can be soothing. If you have any questions about abdominal pain please let us know.

Shortness of Breath

Shortness of breath is quite common and is due to hormonal changes causing a perceived "air hunger," since the diaphragm is elevated by the enlarging uterus. You will notice that you get tired and out-of-breath more rapidly with exercise as well. Even simple activities such as climbing stairs may now seem an unexpected challenge! In general, taking your time with activities is the best remedy. However, if you notice a

sudden change or that you have significant difficulty breathing, please call the doctor, or seek emergency care.

Leg Cramps and Restless Legs

Leg cramps and nighttime restless legs are common in pregnancy, especially in the second and third trimesters. While not harmful, they can be uncomfortable and disruptive. Magnesium Bisglycinate 160 mg twice daily, may reduce frequency and severity of leg cramps. This supplement is available over the counter. This type of magnesium (bisglycinate) is well absorbed and gentle on the stomach.

Regular calf-stretching exercises may also help. These can be done by standing at arm's length from a wall, placing both hands on the wall, and stepping one foot back to stretch the calf muscle. Keep the heel on the ground and knee straight. Hold for 20 seconds and repeat three times, four times daily for one week, then twice daily as needed.

Swelling of the Legs

Some swelling of the legs and feet is perfectly normal especially during the third trimester. By itself swelling is uncomfortable but not hazardous. If you are not too uncomfortable no measures need be taken. Elevation of the legs, slightly reducing salt intake, and increasing fluid intake help.

While swelling is almost always innocent you should let us know if it becomes severe or is accompanied by facial swelling, headache, visual changes or nausea. We will need to at least check your blood pressure if these occur since it could be related to the disease Preeclampsia (Toxemia). If swelling is one-sided or associated with pain in the deep muscles of the leg this could be a blood clot. Please call our office to arrange an evaluation.

Skin Changes

You may notice just a few, or many skin changes during the pregnancy. Most of the cosmetic changes will be resolved completely within a few months of delivery. Some pigmentation changes such as the linea

nigra (dark line) on your abdomen will persist to some degree. You may also notice darkening of the nipples and areola.

Please let us know about any rashes you develop. Some are completely benign but others can be associated with important viruses (varicella, parvovirus) that can be dangerous for your developing fetus. Severe itching of the palms and soles without a rash can be indicators of a concerning condition called cholestasis. Follow the ACOG link below for other common skin conditions during pregnancy.

★ More Information

www.acog.org/womens-health/faqs/skin-conditions-during-pregnancy… *ACOG's FAQ Sheet, "Skin Conditions During Pregnancy".*

Disability During Pregnancy and After Delivery

The great majority of expectant mothers can continue to work until late in pregnancy without any problem. On occasion, however, the physical changes of pregnancy or the demands of a woman's job can create workplace difficulties. Please let us know if you have any concerns in this regard. We can suggest simple steps to deal with fatigue, morning sickness, or aches and pains that can be particularly challenging while you are at work.

If you have more serious symptoms or concerns about potential workplace hazards to you or your baby, we will help evaluate this as well and try to coordinate a plan with your employer.

When medically appropriate we will recommend that a pregnant woman be placed on disability leave from her job. Such leave is rarely required, however, and in the absence of a serious condition that would endanger the health of the mother or baby medical ethics prevent us from making such a recommendation. Handicap or special parking permissions are not issued by Arbor. We will, however, do everything we can to reduce or eliminate pregnancy-related difficulties you may be having at work. Again, this includes contacting your employer when appropriate to recommend helpful adjustments or alterations to your duties.

10. Life's Activities: Safe vs. Unsafe?

It's common to be concerned that your customary activities might cause harm to your growing baby. We have compiled this list to help define safe activities during pregnancy. If you don't see your concern or question listed below, call our office or ask the provider at your next visit. Women with medical complexities or pregnancy complications may have additional restrictions.

These are generally considered **safe**, for women with uncomplicated pregnancies:

- Manicure, pedicure, facial, bikini wax, mud bath, salt scrub, seaweed wrap, massage (be aware that some skin types become more sensitive in pregnancy)
- Having your teeth cleaned, whitened, filled, crown applied, root canal
- Having your hair permed/relaxed or colored (with good ventilation)
- Taking a warm bath (not Hot!)
- Swimming in a chlorinated pool, lake, or ocean (watch out for big waves!)
- Carrying your toddler
- Benzoyl peroxide and salicylic topical applications for acne
- Using soothing skin balms like Icy-Hot or Vicks Vapor Rub
- Acupuncture, Chiropractic, and Physical Therapy services—but make sure your clinician is aware of your pregnancy
- Working on a computer or with cell phones
- Raising your arms above your head
- Applying topical self-tanning lotions and sunscreen
- Applying topical essential oils (but not ingesting them)
- Sexual activity (if you are not at risk for placental bleeding)
- Traveling through airport security, body scanners, metal detectors
- Wearing a seat belt … please do!

These are generally considered **safe, with reasonable accommodation**:

- Moving furniture (limit 35 pounds is reasonable guidance)
- Having your home exterminated, walls painted, hardwood floors refinished (with good ventilation)
- Using Mosquito sprays or DEET use (small amounts on exposed skin or clothing only)

These are generally considered **safe, BEFORE 20 weeks of pregnancy**:

- Sleeping on your back or stomach; up to 24 weeks is fine
- Sit ups and abdominal crunches
- Breastfeeding

These activities should be considered **UNSAFE during your pregnancy**, or there is such limited safety information available that the activity cannot be recommended at this time:

- Drinking alcohol, smoking, vaping, or using recreational drugs
- Participating in sports or activities that expose you to a risk of being struck in the abdomen
- Ice skating, rollerblading, water skiing, snow skiing, horse riding, or participating in activities that expose you to a risk of falling
- X-rays, CT scans, MRI, unless approved by your physician
- Deep heating ultrasound
- Using a hot tub, sauna, steam room, Hot Yoga, or very hot bath soak
- Using a tanning bed
- Laser hair removal with the use of associated topical anesthetics
- Cleaning out your cat's litter box (wear gloves if necessary)
- Contact with rodents and their excrements, including guinea pigs and hamsters
- Blood donation
- Getting a tattoo
- Using acne medicine containing retinoic acid or derivatives
- Firearms training, use, or exposure (lead and noise toxicity)
- Scuba diving
- Air Travel in non-pressurized (non-commercial) aircraft

11. Vaccines and Infectious Diseases

It's time to consider whether your immunizations are up-to-date. Some of your childhood immunizations may no longer be effective, or you may have missed newer vaccines or important booster shots.

Vaccination is one of the most important things that you can do for yourself and your baby. Vaccines help protect you and your baby from diseases that you both are at risk of and can make you each seriously ill.

Many vaccines are perfectly safe to give during pregnancy, while some should be delayed until after delivery. Your Arbor providers all agree that immunization is a safe way to protect your health and the health of your baby. Some excellent resources are listed below.

★ More Information

www.cdc.gov/vaccines/adults/rec-vac/pregnant.html … *From the CDC, guidelines and information for the vaccination of pregnant women.*

wwwnc.cdc.gov/travel/yellowbook/2024/family/pregnant-travelers … *Guidance from the CDC for Pregnant Travelers. Recommendations for overseas immunizations.*

www.cdc.gov/vaccines/hcp/vis/current-vis.html … *From the CDC, up-to-date Vaccine Information Statements (VIS), including influenza, Tdap, RSV and MMR.*

Covid-19

The coronavirus pandemic has had unimaginable impact on our lives since March 2020. We have moved into the endemic phase, where the disease is milder and vaccines and therapeutic drugs have dramatically reduced serious illness, hospitalization, and death. Pregnant women are a higher-risk population and should take extra effort to avoid Covid. Medical information about Covid-19 is evolving. We keep our arbor-obgyn.com website updated with the most current and relevant information for pregnant women and include links to reliable information sources. We very much appreciate the commitment of our patients and our staff to personal responsibility and to keeping one another safe.

Covid vaccination is recommended for all adults, and especially those women who are pregnant or planning for pregnancy. The vaccine is safe, and effective against severe illness, hospitalization, and death. It does not cause infertility, increase the risk of miscarriage, or increase any prenatal complications. It is compatible with breastfeeding as well. Please review our Obstetrics-Covid page on the Arbor website for up-to-date information.

Respiratory Syncytial Virus (RSV)

According to the CDC, respiratory syncytial virus (RSV) is a common respiratory virus that usually causes mild, cold-like symptoms but can also affect the lungs. Symptoms of RSV infection may include runny nose, decrease in appetite, coughing, sneezing, fever, or wheezing.

Anyone can become infected by RSV, and almost all children get an RSV infection by the time they are 2 years old. While most children recover from an RSV infection in a week or two, RSV infection can be dangerous for infants and some young children, causing difficulty breathing, low oxygen levels, and dehydration. In the United States, RSV is the most common cause of bronchiolitis (inflammation of the small airways in the lungs) and pneumonia (infection of the lungs) in children younger than 1 year of age. Children who get sick from RSV may need to be hospitalized, and some might even die.

In 2023, the FDA approved an existing RSV vaccine for administration to pregnant women. **Abrysvo** is a single injection vaccine given to pregnant women at 32 through the 37th week gestational age, if your due date is in September through January – RSV season. The vaccine is primarily given to help your newborn baby, by causing you to develop RSV antibodies that will pass through the placenta. It is indicated for the prevention of lower respiratory tract disease (LRTD) and severe LRTD caused by respiratory syncytial virus (RSV) in infants from birth through 6 months of age. The most commonly reported side effects of the vaccination are: pain at the site (40%), headache (31%), muscle aches (26%), and nausea (20%). We will give you a detailed information handout when you are eligible.

At this time, the CDC does not recommend repeat RSV vaccination in future pregnancies, regardless of RSV season. If you received the Abrysvo

vaccine during a prior pregnancy, you will not be re-vaccinated during this pregnancy. This recommendation is based on current data and may change as more evidence becomes available. If maternal vaccination is not given, your newborn may be eligible to receive a preventive antibody injection after birth.

If you don't receive the Abrysvo, there is an alternative for your newborn. The RSV preventive antibody (generic name nirsevimab, trade name **Beyfortus**) is a shot that prevents severe RSV disease in infants and young children. Traditional vaccines are immunizations that stimulate the recipient's immune system to produce antibodies. However, Beyfortus is an immunization that provides antibodies directly to the infant.

Infants born during the RSV season (typically fall through spring) should receive a single dose of the RSV Immunization within 1 week after birth. Most infants whose mothers got the RSV vaccine don't need to get nirsevimab, too. Both protect infants from severe RSV by providing antibodies, either from the mother to the infant or directly to the infant. Most infants will likely only need protection from either the maternal RSV vaccine or nirsevimab (not both). Please check with your pediatrician.

★ More Information

abrysvomaternal.com … *Pfizer's RSV vaccine for pregnant women, Abrysvo.*

beyfortus.com … *Sanofi Pasteur's RSV immunization for infants, Beyfortus.*

Influenza

Annual flu shots (inactivated influenza vaccine) are an effective and safe way to protect you and your baby from serious illness and complications of the flu. Pregnant women can get much sicker from the flu than other adults. Immunization with the flu shot during pregnancy also will help protect your newborn who will be too young to be vaccinated and have no other way of receiving influenza antibodies. The flu shot has been given to millions of pregnant women over many years, and flu shots have been shown to be safe for pregnant women and their babies.

The flu shot can be given in any trimester during pregnancy. Pregnant women are advised to get vaccinated as soon as possible once it's available. We order a supply of the influenza vaccine each season exclusively for our pregnant patients. Unfortunately, we don't have the inventory to also immunize family members and so they should speak with their primary care provider or local pharmacy.

You cannot get the flu from receiving the flu vaccine since there are no live particles in the injection. Pregnant women should not receive the nasal spray vaccine because it is made with the live flu virus. Family members can receive the nasal spray.

Preservatives used in trace amounts in vaccines have not been shown to be harmful to a pregnant woman or her baby. Even so, some pregnant women may be concerned about exposure to preservatives such as thimerosal and mercury. To alleviate these concerns Arbor provides an influenza vaccine that are labeled 'Preservative Free.'

Getting your flu shot is the most important step in protecting yourself and your baby against the flu. In addition, breastfeeding your baby and making sure other family members and caregivers receive the flu vaccine will further protect your baby.

Influenza vaccines can be given to breastfeeding mothers if they were not immunized when they were pregnant. Breastfeeding women can receive either the flu shot or the nasal spray. Breastfeeding mothers pass antibodies through breast milk, which may also reduce the infant's chances of getting sick with the flu.

Please be aware that a small number of immunized women can still acquire influenza. If you develop flu-like symptoms (high fever, muscle

aches, respiratory changes), contact the office so that we can test and treat you with antiviral medication such as Tamiflu. If a close contact or household family member has confirmed Influenza A, we will consider providing you with prophylactic antiviral medication to reduce your chance of becoming ill.

Tdap: Tetanus, Diphtheria, Pertussis (Whooping Cough)

There is a significant resurgence of whooping cough in North Carolina. Tdap is an important vaccine available to protect you and your baby.

Pertussis (whooping cough) is a highly contagious infection of the respiratory tract. Common initial symptoms of pertussis may include runny nose, sneezing, low-grade fever, and mild cough. The cough gradually becomes severe, leading to a "whooping" sound when trying to breath between coughs. Infected individuals who do not have visible symptoms can still spread the disease to others. There are currently no pertussis vaccines licensed or recommended for newborns at birth. The best way to prevent pertussis in a young infant is by vaccinating the mother during pregnancy.

Tetanus is the only vaccine-preventable disease that is not transmitted between persons; it enters the body through a break in the skin. Most people are familiar with the concerns for contaminated dirt and rusty nails. Tetanus causes painful muscle spasms and can cause lockjaw, preventing an infected individual from swallowing.

Respiratory Diphtheria presents as a sore throat with low-grade fever and an adherent membrane of the tonsils, pharynx, or nose. Neck swelling is usually present in severe disease. The lining on the throat can lead to breathing difficulties.

The vaccine for Tetanus and Diphtheria is a combination vaccine, Td, or given with the acellular Pertussis vaccine, Tdap. A Pertussis-only vaccine is not available.

In October 2012, the Advisory Committee on Immunization Practices (ACIP) at the Centers for Disease Control (CDC) voted to recommend that pregnant women should receive a dose of Tdap during each pregnancy, irrespective of the woman's previous history of receiving Tdap. Newborn

vaccines are not given until 2 months of life. However, antibodies developed by you from the vaccination can be passed on to your baby prior to birth. This can help prevent pertussis infection in the newborn, until he/she get the first vaccination.

Although it is safe to receive after 20 weeks gestation, the optimum timing for Tdap administration is between 27 and 36 weeks. The best immunity happens if your delivery is at least two weeks after vaccination. At Arbor, we administer the vaccine during your 28-week appointment when screening for gestational diabetes – you're here for an hour anyways!

Getting your Tdap shot is the most important step in protecting yourself and your baby against whooping cough. It is also important to make sure all family members and caregivers are up to date with their vaccines and, if necessary, that they receive the Tdap vaccination at least 2 weeks before having contact with your baby. This creates a safety "cocoon" of vaccinated caregivers around your baby.

If you needed the vaccine and you were not vaccinated with Tdap during this pregnancy you should receive your Tdap shot immediately after your baby is born. It can be given in the hospital or at our office. A Tdap shot can safely be given to breastfeeding mothers even if they did not get the vaccine while they were pregnant.

There is no elevated frequency or an unusual occurrence of adverse events among pregnant women who have received Tdap vaccine, or in their newborns. Women with certain acute and chronic medical conditions should not receive the vaccines – these are reviewed on our consent form.

The Tdap vaccine given in our office (Adacel brand) does not contain thimerosal or mercury. Still, you should know that thimerosal (a type of mercury) has not been shown to be harmful to pregnant women or unborn babies and it does not cause autism. The benefits of preventing life-threatening illnesses in a mother and child far outweigh any potential risks of the vaccine.

A Td (tetanus/diphtheria) booster will be recommended 10 years after your last Tdap vaccine.

Rubella

Measles, mumps, and rubella vaccinations are typically given in childhood with the combination vaccine known as MMR. We are most concerned about rubella during pregnancy and test your immunity status as part of your first-visit blood work. Immunity can wane as you age.

In adults and children rubella infection causes high fever and a diffuse rash lasting several days.

The primary objective of rubella immunization is to prevent fetal rubella infection and subsequent congenital rubella syndrome (CRS) in newborns. Fetal infection with rubella may lead to spontaneous abortion, fetal death, or preterm delivery. The syndrome causes more damage in early gestation when organ systems are developing. CRS defects can include deafness, serious vision difficulties, cardiopulmonary defects, growth abnormalities, and intellectual disabilities.

Congenital rubella is rare. However, due to its contagiousness you should stay away from any infants suspected of CRS.

The MMR vaccination is not safe to give during pregnancy. If you are not immune to rubella we recommend re-immunization with MMR during your postpartum hospital stay. Be aware that measles and mumps have resurfaced in North Carolina and Virginia; stay away from anyone with respiratory illnesses if possible.

If you are just planning to get pregnant you should not become pregnant for at least four weeks following the MMR vaccine.

Varicella (Chicken Pox)

Varicella is a highly infectious virus spread through inhalation of respiratory droplets. As you probably know the Chicken Pox rash starts off as flat red areas and then transitions to bumps and blisters. Prior to widespread varicella vaccine availability in the mid-1990s most children experienced the actual rash and disease. Chicken Pox is very rare today as a result of widespread immunization.

Varicella infection is uncommon in pregnancy but is associated with serious maternal, fetal, and neonatal effects. Adults tend to get more ill

than children with chicken pox. In pregnancy, varicella may be transmitted across the placenta resulting in congenital or neonatal chickenpox. The risk of congenital varicella syndrome is limited to exposure during the first 20 weeks of gestation. Newborn varicella infection is associated with a high death rate when maternal disease develops from 5 days before delivery up to 48 hours postpartum.

We can evaluate your immunity with a blood test. This isn't necessary for everyone, but may be useful for women at higher risk of exposure such as teachers, nurses, and daycare workers.

If you are not immune to varicella you should avoid contact with individuals who are suspected of having chicken pox. (If you have other children, their vaccinations should not be delayed because of exposure concerns to your current pregnancy.) If you do become exposed please contact our office immediately. Administration of varicella-zoster immune globulin (VZIG) may reduce your chances of developing chicken pox.

If you are just planning to get pregnant you should not become pregnant for at least four weeks following the varicella vaccine.

Other Vaccines

At the time of publication, **Covid-19** vaccinations and booster are available for pregnant women. Most medical authorities find that the vaccine is safe and effective in pregnant women, and can reduce the chances of severe disease, hospitalization, and death. Arbor ObGyn supports use of the Covid vaccine in our pregnant women. If you have had Covid disease, please discuss with the clinician the appropriateness and timing of booster shots.

The vaccine for **Human Papillomavirus (HPV)** is given to women between the ages of 9 to 26 years. If you have not completed the three-shot series you should delay your next shot until after delivery.

Vaccines for **Hepatitis A**, **Hepatitis B**, and **Pneumococcus** are rarely needed, but can be given during pregnancy if necessary.

The CDC recommends that if you are planning international travel you should talk to the doctors at least 4 to 6 weeks before your trip to discuss any special precautions or vaccines that you may need. Many vaccine-preventable diseases that are rare in the United States are still common in other parts of the world. See the CDC's weblink at the beginning of this section for more information about travel vaccinations.

12. Nutrition, Weight Gain, and Exercise

Everyone knows that "you are what you eat." Well, your baby knows it too! The healthiest pregnancies happen when you already have great dietary habits and start at a healthy weight. Even if you're not where you want to be, making a commitment to a nutritious pregnancy is possible and will benefit both of you.

★ More Information

www.choosemyplate.gov/browse-by-audience/view-all-audiences/adults/moms-pregnancy-breastfeeding/nutritional-needs-during-pregnancy … *U.S. Department of Agriculture (USDA), Choose My Plate website – remember the old food pyramids? Comprehensive nutrition and weight site for pregnancy and breastfeeding women. See the Moms/Moms-to-Be link.*

www.fda.gov/Food/FoodborneIllnessContaminants/PeopleAtRisk/ucm312704.htm… *The FDA's guide to Food Safety in Pregnant Women. Download the pdf booklet – it is a great resource!*

www.fda.gov/Food/FoodborneIllnessContaminants/Metals/ucm393070.htm… *"Fish: What Pregnant Women and Parents Should Know." The FDA and EPA's (draft) updated advice on appropriate dietary intake of fish for pregnant women, updated in 2021.*

www.acog.org/womens-health/faqs/nutrition-during-pregnancy… *ACOG's FAQ Sheet, "Nutrition During Pregnancy".*

www.acog.org/womens-health/faqs/obesity-and-pregnancy… *ACOG's FAQ Sheet, "Obesity in Pregnancy".*

Nutrition

How Much to Eat?

Women with normal weight before pregnancy (BMI 20-25) only need an extra 300 Calories per day. You're right, that's not much! Doesn't sound like "eating for two" does it? Supplementing healthy snacks throughout the day is a great way to get those extra calories, while simultaneously quelling hunger pangs and nausea.

Your meal plan will vary by trimester with larger food volumes permitted in the 2nd and 3rd trimesters. The table below shows USDA recommendations for the amounts of each food, per day. If you are struggling with weight, consider using a measuring cup and digital scale. We all underestimate portion sizes!

What Should I Eat?

You already know which foods are healthy choices– now, stick to it! A balanced diet has vegetables, fruits, whole grains, low- or no-fat dairy, and lean proteins. Eat a variety of fruits, vegetables, and proteins to keep from getting bored. Consider switching to low-fat or skim milk.

Consider registering at the Choose My Plate website listed (above) for a personalized menu plan. If you struggle with nutrition and choices we would be glad to offer you a referral to a nutritionist.

The FDA has updated recommendations about fish intake for pregnant women. There are beneficial links between eating fish in pregnancy and a child's growth and development. Previously they recommended that you have no more than two 6-ounce servings of fish per week, citing concerns over mercury levels. We now recommend that pregnant women eat <u>at least</u> 8 to 12 ounces of a variety of low-mercury fish per week. High-mercury fish to avoid include: shark, swordfish, king mackerel, orange roughy, marlin, Gulf of Mexico tilefish (golden or white snapper), and bigeye Tuna. Canned tuna, albacore, skipjack, and yellowfin tuna are fine. A nice table of preferred fish for consumption is on the FDA website at the weblink above.

Drink at least 64 ounces of fluid daily (mostly water). Tap, well, and bottled water are all fine. Be careful though because you can actually

drink too much water and become "water intoxicated", throwing off the balance of water and sodium in your blood. Symptoms can include nausea, vomiting, headache, confusion, and muscle weakness—which are similar to early-pregnancy symptoms! Strive to keep your urine pale yellow in color (not crystal clear, not dark) and you will be fine. You may also drink or eat items with artificial sweeteners, such as sucralose (Splenda) or aspartame (NutraSweet).

If you are a vegetarian you will need to supplement with vitamin B12, vitamin D, and especially iron. We'll work together to find a good protein source, depending on your particular restrictions. Whey protein is a good choice as a protein supplement.

What about Vitamins and Minerals?

We recommend that all women take a **prenatal multivitamin** daily throughout the pregnancy. You'll need more of certain nutrients, especially folic acid, iron, and calcium. Most prenatal vitamins are essentially identical and so we don't favor a particular generic or brand. Some may be marketed to women with certain difficulties such as constipation, nausea, or anemia. We have brand name samples to try and are glad to give you a prescription for the one you find most tolerable. Please don't take supplemental vitamins or minerals in addition to your prenatal vitamin since it's possible to develop toxic levels for you or the baby. Eating foods rich in nutrients/vitamins/minerals will not cause an overdose, however.

Many women ask about taking **omega-3 fatty acids** during pregnancy and lactation, often listed on the prenatal vitamin bottle as DHA (docosahexaenoic acid) or EPA (eicosapentaenoic acid). Both have been shown to have beneficial effects including fetal brain development and the child's subsequent neurodevelopment. Fetal brain growth accelerates during the second half of pregnancy and continues for the first several years. Omega-3 requirements are increased during pregnancy to support fetal growth, particularly of the brain and eyes. At this time there is enough research to support the use of DHA/EPA during your pregnancy.

Essential fatty acids such as omega-3 and omega-6 cannot be synthesized within the body and must be ingested. Unfortunately, most American diets tend to have too few of omega-3s. Some prenatal vitamins have DHA/EPA incorporated and others offer it as a separate capsule.

Pregnant women are recommended to take 200 mg of DHA per day to support fetal health. If you already eat the recommended amount of fish each week then a supplemental capsule may not be necessary. Fish oil capsules are low in mercury contaminants and are a good alternative. Other sources include flax seed oil, vegetable oils, and DHA-enriched eggs.

Pregnant women also need extra folic acid and iron. Any basic prenatal vitamin provides an adequate amount of **folic acid**, 400-800 mcg (0.4-0.8 mg). Most will contain 800 mcg. Breastfeeding women need 500 mcg of folic acid, so you should continue your prenatal vitamin even after delivery. Avoid taking more than 1,000 mcg per day; i.e. don't take a folic acid supplement in addition to your prenatal vitamin unless reviewed with the doctors. Folic acid is also found in leafy vegetables, citrus fruits, whole grains, and fortified cereals and breads. Folic acid helps to prevent neural tube defects in the fetus, such as spina bifida. These defects happen very early in the pregnancy, so it's best to take a prenatal vitamin with folic acid while you are attempting to conceive.

Iron in your blood cells helps carry oxygen to your organs and to the baby. Since your blood volume will expand considerably during pregnancy you'll need more iron than you can typically obtain through healthy dietary choices alone. Prenatal vitamins have some iron. Women who are anemic at the beginning of pregnancy—and we checked with all that blood work! —may need to take an iron supplement as well. We check for anemia again at week 28. Iron rich foods safe for pregnant women include cooked beef, cooked turkey, canned sardines, fortified breakfast cereals, dark chocolate (!), dark leafy greens, tofu, and cooked beans.

Pregnant and lactating women should intake about 1,200 mg of **calcium** each day. Most prenatal vitamins have less than 300 mg since calcium adds substantially to the tablet size. You'll need to get the rest of your calcium from leafy vegetables and dairy products. Calcium rich foods include skim milk (300 mg / 8 oz.), low fat yogurt (400 mg / 8 oz.), low fat cottage cheese (150 mg / 1 cup), and broccoli (175 mg / 1 cup). Orange juice can be fortified with calcium for an additional 300 mg per 8 ounces. If none of these items appeal to you consider taking an over-the-counter calcium supplement.

WHAT FOODS SHOULD I LIMIT OR AVOID?

Just as important as food safety is limiting "empty calorie" foods. These are foods that are high in sugars and solid fats but don't provide very much nutritious value. The main source of excess weight gain we see are from these "empty calories." Examples include sweets, fried foods, ice cream, sodas, candy, artificially sweetened juices, and good old fashioned southern sweet tea.

Although hydration with water is best some women will want flavoring to make it more palatable. Consider adding some lemon or a piece of fruit to your water bottle. Soda and sweet tea are packed with unnecessary calories. Save those calories for something tasty and filling!

Caffeine can be safely consumed in moderation. Limit your intake to less than 200 milligrams per day, which is equivalent to 16 ounces of coffee. Caffeinated sodas tend to have about 45 milligrams of caffeine per twelve ounces. If you have sleep difficulties try not to have caffeinated beverages or foods (like chocolate!) after midday.

Herbal teas are made from berries, flowers, roots, seeds and leaves of various plants – not from actual tea plant leaves. While herbal teas are naturally caffeine free there is limited knowledge about the safety of some of these herbs. Also, since not all herbs or contaminants may be on the label we feel it's prudent to just avoid herbal teas altogether. For your information, herbs likely to be safe are red raspberry leaf, peppermint leaf, ginger root, and lemon balm. Unsafe herbs or herbs with unknown safety include yellow dock, alfalfa, rose hips, nettles, chamomile, and dandelion. **Non-herbal teas** are made from the leaves of real tea plants and are safe to consume in pregnancy. The antioxidant properties can be helpful but be careful to limit your caffeine exposure.

FOODBORNE ILLNESS

The effects of foodborne illness tend to be worse when you're pregnant. You and your family should adhere to basic food handling guidelines. As a reminder, wash your hands and cooking surfaces often. Keep uncooked meats separate from other foods and prep areas. Wash your fruits and vegetables. Use a thermometer to achieve proper cooking temperatures. Refrigerate food promptly after use.

Foodborne illness is more likely with certain foods. Examples include unpasteurized (raw) milk, cheese, and juices. Also problematic are raw or undercooked animal foods such as seafood, meat, poultry, eggs, and raw sprouts. Avoid eating these foods during your pregnancy. The Food Safety Service of the U.S. Government provided the tables below (and see the weblink at the top of this section).

Listeria is a harmful bacterium that can grow even in refrigerated foods. Pregnant women are 10 to 20 times more likely to get listeriosis than the general population. Signs of the disease listeriosis include fever, chills, muscle aches, diarrhea, and vomiting. Please let us know if you are having these symptoms. In pregnant women, listeriosis can result in miscarriage, premature delivery, and severe sickness to the baby.

Avoid these foods and beverages:

- Hot dogs, luncheon meats, or deli meats unless they are reheated until steaming hot.
- Refrigerated pâté or meat spreads from a meat counter. Canned or shelf-stable meat products are fine.
- Refrigerated smoked seafood unless it is an ingredient in a cooked dish. Canned or shelf-stable fish are fine.
- Unpasteurized milk, or foods made with unpasteurized milk.
- Prepared grocery store salads such as ham, chicken, egg, tuna, or seafood – due to long shelf times.
- Soft cheeses (feta, queso, queso fresco, brie, blue) unless it states "Made with Pasteurized Milk".

Toxoplasmosis is an infection caused by a parasite found in soil, sand, and raw meat. Only a small percentage of women infected by toxoplasma will have the symptoms of swollen glands, fever, headache, muscle pain, and/or a stiff neck. If you become infected while pregnant (or just before pregnancy) you can pass an infection to your unborn child, even if you are not ill. The best way to protect your unborn child is by protecting yourself against toxoplasmosis. Follow these tips from the USDA:

- Wash your hands with soap and water after touching soil, sand, raw meat, or unwashed vegetables.
- Cook your meat, poultry, and seafood to a safe minimum internal temperature. Do not sample meat until it is cooked.

- Wash all cutting boards and knives with hot soapy water after each use.
- Cats can spread this parasite. Have someone else change the litter box if possible. If you must change it, wear disposable gloves and wash your hands thoroughly with soap and water afterwards. Clean the litter box daily – the parasite doesn't become infectious until one to five days after it is shed in the feces. Keep cats off surfaces where food is prepared!
- Wear gloves when gardening or handling sand from a sandbox. Cats may use gardens or sandboxes as litter boxes. Keep sandboxes covered when not in use. Wash hands afterward.

FOODS TO AVOID DURING PREGNANCY.

Don't Eat These Foods	Why	What to Do
Soft CHEESES made from unpasteurized milk, including Brie, feta, Camembert, Roquefort, queso blanco, and queso fresco	May contain *E. coli* or *Listeria*.	Eat hard cheeses, such as cheddar or Swiss. Or, check the label and make sure that the cheese is made from pasteurized milk.
Raw COOKIE DOUGH or CAKE BATTER	May contain *Salmonella*.	Bake cookies or cake. Don't lick the spoon!
Certain kinds of FISH, such as shark, swordfish, king mackerel, orange roughy, bigeye tuna, marlin and tilefish from the Gulf of Mexico (golden or white snapper)	Contains high levels of mercury.	Each week eat at least 8 to 12 ounces fish and shellfish that are lower in mercury, such as shrimp, salmon, pollock, and catfish.
Raw or undercooked FISH (sushi)	May contain parasites or bacteria.	Cook fish to 145° F.
Unpasteurized JUICE or cider (including fresh squeezed)	May contain *E. coli*.	Drink pasteurized juice. Bring unpasteurized juice or cider to a rolling boil and boil for at least 1 minute before drinking.
Unpasteurized MILK	May contain bacteria such as Campylobacter, E. coli, Listeria, or Salmonella.	Drink pasteurized milk.
SALADS made in a store, such as ham salad, chicken salad, and seafood salad.	May contain *Listeria*.	Make salads at home, following the food safety basics: clean, separate, cook, and chill.
Raw SHELLFISH, such as oysters and clams	May contain *Vibrio* bacteria.	Cook shellfish to 145° F.
Raw or undercooked SPROUTS, such as alfalfa, clover, mung bean, and radish	May contain *E. coli* or *Salmonella*.	Cook sprouts thoroughly.

FOODS TO EAT CAUTIOUSLY DURING PREGNANCY.

Be Careful with These Foods	Why	What to Do
Hot dogs, luncheon meats, cold cuts, fermented or dry sausage, and other deli-style meat and poultry	May contain *Listeria.*	Even if the label says that the meat is precooked, reheat these meats to steaming hot or 165° F before eating.

Eggs and pasteurized egg products	Undercooked eggs may contain *Salmonella*.	Cook eggs until yolks are firm. Cook casseroles and other dishes containing eggs or egg products to 160° F.
Eggnog	Homemade eggnog may contain uncooked eggs, which may contain *Salmonella*.	Make eggnog with a pasteurized egg product or buy pasteurized eggnog. When you make eggnog or other egg- beverages, cook to 160°F
Fish	May contain parasites or bacteria.	Cook fish to 145° F.
Ice cream	Homemade ice cream may contain uncooked eggs, which may contain *Salmonella*.	Make ice cream with a pasteurized egg product.
Meat: Beef, veal, lamb, and pork (including ground meat)	Undercooked meat may contain *E. coli*.	Cook beef, veal, and lamb steaks and roasts to 145° F. Cook pork to 160° F. Cook all ground meats to 160° F.
Meat spread or pâté	Unpasteurized pâté or meat spreads may contain *Listeria.*	Eat canned versions, which are safe.
Poultry and stuffing (including ground poultry)	Undercooked meat may contain bacteria such as *Campylobacter* or *Salmonella.*	Cook poultry to 165° F. If the poultry is stuffed, cook the stuffing to 165° F. Better yet, cook the stuffing separately.
Smoked seafood	Refrigerated versions are not safe, unless cooked to 165° F.	Eat canned versions, which are safe, or cook to 165° F.

Weight Gain

Everyone gains weight during pregnancy—it's a fact! But weight gain is one of the few things about pregnancy that you do have some control over. Years ago the recommendation was for every woman to gain 35 pounds. Nowadays your recommended weight change is primarily based on your pre-pregnancy body mass index (BMI). To calculate your own BMI, multiply your weight (lbs.) by 703. Then divide by your height (inches); then divide again by your height. A simple-to-use chart is shown below. We recognize that BMI doesn't take into account body composition; for example a lean but very muscular man or woman may have a high BMI.

	Weight (pounds)													
Height	100	110	120	130	140	150	160	170	180	190	200	210	220	230
58 in.	21	23	25	27	29	31	33	36	38	40	42	44	46	48
59	20	22	24	26	28	30	32	34	36	38	40	42	44	46
60	20	21	23	25	27	29	31	33	35	37	39	41	43	45
61	19	21	23	25	26	28	30	32	34	36	38	40	42	43
62	18	20	22	24	26	27	29	31	33	35	37	38	40	42
63	18	19	21	23	25	27	28	30	32	34	35	37	39	41
64	17	19	21	22	24	26	27	29	31	33	34	36	38	39
65	17	18	20	22	23	25	27	28	30	32	33	35	37	38
66	16	18	19	21	23	24	26	27	29	31	32	34	36	37
67	16	17	19	20	22	23	25	27	28	30	31	33	34	36
68	15	17	18	20	21	23	24	26	27	29	30	32	33	35
69	15	16	18	19	21	22	24	25	27	28	30	31	32	34
70	14	16	17	19	20	22	23	24	26	27	29	30	32	33
71	14	15	17	18	20	21	22	24	25	26	28	29	31	32
72	14	15	16	18	19	20	22	23	24	26	27	28	30	31
	Underweight				Optimal					Overweight			Obese	

"Optimal" BMI is between 18.5 and 24.9. The following table for weight gain recommendations from the Institute of Medicine has been adopted by all the obstetric authorities. Make special note of the weight gain per week in the second and third trimesters (28 total weeks). This means optimal BMI women will gain less than five pounds in the first trimester!

In addition to the weight of your newborn, the rest of your pregnancy weight gain expectation is from enlarged breasts (1-3 lbs.), enlarged uterus (2 lbs.), placenta (1.5 lbs.), amniotic fluid (2 lbs.), increased blood volume (3-4 lbs.), increased fluid/swelling (2-3 lbs.), and fat tissue for energy storage (6-8 lbs).

Following these guidelines can help ensure a more normal pregnancy with fewer chances of obstetric interventions, complications and C-Section. Excessive weight gain increases your risk of preeclampsia, gestational diabetes, a large baby, difficult and longer labor and delivery, and a higher chance of C-Section.

If you are overweight or obese before pregnancy your weight gain goal should be around 15 pounds. Weight gain of greater than 25 pounds if you are already overweight also increases your risk for preeclampsia, gestational diabetes, a large baby, difficult delivery, stillbirth, and a higher chance of C-Section. Excessive weight gain in pregnancy doubles your risk of having a baby larger than 9 pounds, and may also increase the risk of childhood obesity.

WEIGHT GAIN RECOMMENDATIONS FOR PREGNANCY

Pre-pregnancy Weight Category	BMI	Recommended Range of Total Weight Gain	Recommended Rates of Weight Gain in the 2nd and 3rd Trimesters
Underweight	< 18.5	28 – 40 lbs.	1 lb./week (1 – 1.3)
Optimal	18.5 – 24.9	25 – 35 lbs.	1 lb./week (0.8 – 1)
Overweight	25.0 – 29.9	15 – 25 lbs.	0.6 lb./week (0.5 – 0.7)
Obese	> 30	11 – 20 lbs.	0.5 lb./week (0.4 – 0.6)

Don't be discouraged if you weigh more by the end of pregnancy than you ever have in your life. The physiological changes associated with pregnancy (baby, placenta, fluid, increased blood volume) will add up to 15-20 pounds alone by the end of pregnancy. And don't be too discouraged if you see your weight going up faster than it ought to. We are happy to work with you to try slowing the weight gain and may refer you to a nutritionist. We don't want you skipping meals or dieting. The best way to avoid gaining too much is to be conscious of calorie intake and participate in a regular exercise activity. Normal pregnancy calorie goals are an additional 100-300 Calories per day. As you can see from the table this equates to gaining only a pound or less per week in the second and third trimester.

It can be a challenging for some women to gain weight slowly. You may be shocked by big jumps in your weight between visits. It is best to check your weight at home on a regular basis. Daily checks can help keep you accountable to yourself. Adjust your eating and fitness routines as the pregnancy progresses. A good calculator tool and chart can help keep you on track. See the links below.

If you are pregnant with twins, weight gain goals are approximately 35-45 pounds for women with an optimal pre-pregnancy baseline. This equates to approximately an extra 600 Calories per day.

Please use the online CALCULATOR below.

★ More Information

www.calculator.net/pregnancy-weight-gain-calculator… *Online calculator for your expected weight gain in pregnancy. Enter your weight prior to pregnancy, and print out the chart to keep track for the rest of the pregnancy.*

Exercise

Adequate exercise in pregnancy is helpful, both physically and mentally. Some forms of exercise are discouraged for obvious safety reasons (no water skiing, jumping horses, kick boxing, etc.), and others for comfort. Low impact activities are great. You should take care to stay well-hydrated and to not overheat during exercise. Avoid saunas and hot tubs. There may be times when you will be asked to forgo exercise for other reasons during your pregnancy.

In general, moderately vigorous exercise can and should be continued during pregnancy. Even if you were not exercising regularly before pregnancy you can still be active with intentional walking. Exercise doesn't have to be strenuous to be beneficial! Please talk to a provider before beginning any new exercise.

Women with a high level of fitness and activity level prior to pregnancy are encouraged to continue their regimen (with some modification) throughout this pregnancy. Most fitness centers (Pilates, yoga, barre, cross-fit, bootcamps, Lifetime, Rex Wellness) have programs just for pregnant women.

Exercise tips when you are pregnant:

- always warm up before exercising, and cool down afterwards
- try to keep active daily: half an hour of walking each day can be enough, but if you can't manage that, any amount is better than nothing
- avoid any strenuous exercise in hot weather
- drink plenty of water and other fluids
- wear a supportive bra
- if you go to exercise class, make sure your teacher is properly qualified and knows how far along you are in pregnancy
- consider swimming

Exercises to avoid:

- don't lie flat on your back for more than a brief time, particularly after 20 weeks because the weight of your enlarged uterus/baby presses on the main blood vessel bringing blood back to your heart—and this can make you feel faint
- don't take part in contact sports where there's a risk of being struck in the abdomen by an opponent
- don't take part in any sports where the ball can strike you in the abdomen, like a soccer goalkeeper
- don't take part in horse-riding, downhill skiing, ice hockey, gymnastics or cycling, because there's a risk of falling
- don't go scuba-diving, because the baby has no protection against decompression sickness and gas embolism (gas bubbles in the bloodstream)
- don't exercise at heights over 2,500 meters above sea level until you have acclimatized: this is because you and your baby are at risk of altitude sickness

★ More Information

www.acog.org/womens-health/faqs/exercise-during-pregnancy… *ACOG's FAQ Sheet, "Exercise During Pregnancy".*

13. Smoke and Alcohol Use

Tobacco & Vaping

We're delighted that so few of our pregnant women choose to smoke. In fact, in Wake County fewer than 10% of women reported smoking during pregnancy. For those women who continue to smoke, you probably already know how difficult it is to quit completely. Without a doubt smoking is bad for your health, the health of your developing baby, and newborns. Did you know that staying smoke-free can increase your baby's chances of having a normal weight, functioning lungs, delivering at full-term, and going home from the hospital with you? Newborns and children in smoke-free homes have far fewer trips to the pediatrician for respiratory illnesses as well.

Fathers need to quit smoking too. It should be a team effort where you can support one another during this difficult quest to be smoke-free! Don't enable each other by purchasing cigarettes either. Save that money for the baby!

Excuses such as "I only smoke outside," or "I won't smoke around the baby," or "I'll quit once he/she's born," don't add up to good health. The time to quit is now!

The **You Quit Two Quit Project** is implemented by the University of North Carolina Center for Maternal and Infant Health and focuses specifically on healthy moms and healthy babies. The website has great support ideas to start your smoking cessation now.

In addition, consider calling the North Carolina Quitline. **QuitlineNC** provides free, one-on-one smoking cessation support over the phone. You will be paired with an experienced Quit Coach who will help you create a plan and stick to it. QuitlineNC is free, confidential and available 24 hours a day, seven days a week. 800-QUIT-NOW, 800-784-8669.

We rarely use medications for smoking cessation in pregnancy including over-the-counter nicotine replacements. Behavioral support and changes is often enough to get you through the pregnancy.

There is no evidence that vaping and e-cigarette use are any safer to the baby compared to smoking cigarettes. Nicotine is dangerous to the

developing fetus, regardless of delivery method. E-cigarettes can contain other substances as well like formaldehyde which could be dangerous to pregnancy.

★ More Information

https://youquittwoquit.org/pregnant-women-mothers-and-families/ … *North Carolina's support program for women and children.*

www.quitlinenc.dph.ncdhhs.gov … *Website and live help in North Carolina to quit smoking.*

Marijuana and CBD

Since marijuana availability has become legal in many states, we have had more questions about whether it is safe to use in pregnancy. While there is not as much data about the effects of marijuana during pregnancy as there is regarding alcohol and tobacco use, recent studies have shown increased risk of preterm labor, stillbirth, poor fetal growth, placental issues like abruption and admission to the neonatal intensive care unit. Earlier data suggest issues with long term neurologic development, possible increased risk for attention and behavior issues, problems with vision, verbal reasoning and short-term memory. This is important for your partner too, as marijuana use in a male partner can increase the risk of miscarriage. Please share with your provider if you are having difficulty discontinuing use of marijuana or related products such as CBD oil.

Alcohol

Drinking alcohol during pregnancy can cause miscarriage, preterm birth, and stillbirth. It can also cause your baby to have a range of lifelong health conditions.

There is no safe amount of alcohol that you can drink in pregnancy. If you ask us if you can just have "just one," we will continue to emphasize that we don't recognize any safe level of alcohol consumption during pregnancy.

When you drink alcohol during pregnancy, so does your baby. The alcohol in your blood is not filtered by the placenta and quickly passes to your baby through the umbilical cord. ***Essentially, the same amount of alcohol that is in your blood is also in your baby's blood***. Your baby's developing liver isn't designed to process alcohol at these levels.

Alcohol can lead your baby to have serious health conditions called fetal alcohol spectrum disorders (FASD). The most serious of these is fetal alcohol syndrome (FAS). Fetal alcohol syndrome can seriously harm your baby's development, both mentally and physically. FAS is more common in women who binge drink but is also seen in women with lesser alcohol use.

A host of other problems have been linked to alcohol use such as preterm birth as well, low birth weight, learning difficulties, and sleep problems.

Alcohol affects each mother's pregnancy in a different way and it's not predictable whose baby will be most affected. The best way to ensure a healthy baby is to stay away from alcohol altogether. If you're still not convinced, check out the weblinks below!

If you are planning for pregnancy, consider stopping your alcohol intake. If you had an occasional drink before knowing you were pregnant, chances are it probably won't harm your baby. But it's very important that you stop drinking alcohol as soon as you think you might be pregnant to further reduce your risks.

If you or your partner are worried that you have a dependence or addiction to alcohol please speak with one of our providers. We want to assist you and confidentially help direct you to available resources.

★ More Information

www.acog.org/womens-health/faqs/tobacco-alcohol-drugs-and-pregnancy…
ACOG's FAQ Sheet, "Tobacco, Alcohol, Drugs, and Pregnancy".

Other Drugs and Help

If you have a history of drug or alcohol dependence then you are at significant risk for similar challenges this pregnancy. Please be honest with us during your initial appointments so that together we can meet these challenges.

The UNC Horizons Program is an extension of the UNC Department of Obstetrics & Gynecology. Their mission is to move or maintain women through a healthy substance abuse recovery, optimize a healthy birth outcome, and identify women and children with ongoing needs. Please visit www.med.unc.edu/obgyn/horizons for more information.

14. Traveling While Pregnant

Traveling during pregnancy can be fun and even comfortable, especially during the second trimester (13 to 28 weeks) when nausea and fatigue have lessened or ceased. Air and automobile travel are safe throughout most pregnancies provided you follow a few simple rules and your own common sense. During pregnancy blood volume is up, your center of gravity has changed, and your joints are loosening...so take it easy!

Pregnant women can travel throughout the entire pregnancy – this is America and there's healthcare available everywhere! If you want to have your baby with us however, most women will stop long-distance travel during the window of 37 to 42 weeks. We can't predict labor well, but if you must travel at full-term, we can check your cervix and give a well-intentioned opinion on the likelihood of delivery.

If you are planning for overnight travel and you are more than 37 weeks pregnant, if you have a high-risk pregnancy, or traveling anywhere with extreme conditions (heat, cold or high altitude), please discuss with one of the clinicians.

We strongly recommend review of your health insurance coverage before travel outside of the United States. Many policies will not pay for services or hospitalization outside of the country or for emergency evacuation.

Here are some general travel tips you may find helpful:

- Wear loose, layered clothing and comfortable low-heeled shoes. Remember your body temperature is higher than those around you.
- Drink plenty of water to avoid dehydration.
- Carry your own nutritious snacks.
- Walk around every two hours to avoid swelling.
- Place a small pillow under your back to avoid strain.
- Give your body time to adjust to your new temperature, climate, and altitude.
- Metal detectors in airports are safe in pregnancy.

- Avoid drinking the local water in foreign countries unless you know it to be safe for travelers.
- Be aware of the medical care available at your destination, including the name of the nearest hospital.
- Make sure your health insurance is valid while abroad during pregnancy, and that the policy covers a newborn should delivery take place.
- Make sure prenatal visits are not missed.
- Before you start, check to see if there are immunizations you need (yellow fever, typhoid fever, cholera). Also be aware of medications you may need to take to prevent infections such as malaria.
- Consider taking your medical records.
- Know your blood type and other important information.

★ More Information

wwwnc.cdc.gov/travel/yellowbook/2024/family/pregnant-travelers … *Guidance from the CDC for Pregnant Travelers. Topics include healthy preparation, air travel, food and water illness, malaria, travel kits, and immunizations.*

Air Travel

Occasional air travel during pregnancy is generally safe and most domestic commercial airlines allow travel up to 36 weeks gestation. If you must fly after 36 weeks your airline may require a letter stating that you have been examined within 24 hours of travel and that you are medically suitable for flying. You may wish to inquire with your airline regarding specific policies or restrictions for pregnant travelers, particularly if flying overseas.

Noise, vibration, and cosmic radiation contribute only a negligible risk to pregnant women. In the absence of obstetric or medical complications pregnant women can observe the same precautions for air travel as the general population and can fly safely.

Cabin pressure changes and low humidity can make some travelers uncomfortable. Review the weblink above from the CDC to optimize your air travel experience. Other recommendations include:

- Wear your seat belt continuously since severe air turbulence is often unpredictable.
- Avoid gas-producing food and drinks before flights since the expanding gas in your stomach and intestines can be uncomfortable.
- Consider anti-nausea or motion-sickness medications.

Cruises

Emergency prenatal care may be delayed or altogether unavailable when on a cruise ship. Cruise lines do not allow travelers who are pregnant 24 weeks or more. If you are planning a cruise prior to 24 weeks the cruise line will require physician verification of gestational age and that it is safe to travel. Please submit your cruise line's pregnancy certification form to us well in advance of your travel dates.

Seat Belt and Air Bag Use

Your seat belt is as important as ever during pregnancy. Correct usage offers the best protection for both you *and* your unborn child. How do you position the belt? Start by sitting as upright as possible and place the lap belt under your belly and as low on your hips as possible (so it pulls against your pelvic bones, not your abdomen). Then position the shoulder belt so it crosses your chest between your breasts and away from your neck. Fasten and adjust the seat belt so it fits as snugly as possible.

You may also need to adjust the seat itself, moving it as far back as possible. Your breastbone should be at least 10 inches from the steering wheel or dashboard. As your abdomen grows during pregnancy move the seat back to keep as much distance as possible while keeping the pedals within reach.

What if the car or truck has air bags? We recommend that you leave the air bag switch on, and you still need to buckle up. Air bags are designed to work with seat belts, not replace them. Without a seat belt a

pregnant woman can be thrown into a rapidly opening air bag—a movement of such force could injure or even kill the mother and her growing baby.

Your baby is well cushioned by the uterus and amniotic fluid, and your uterus is well protected by your own body. There is no evidence that safety belts increase the chance of injury to the fetus, uterus or placenta. In most accidents the baby recovers quickly from the safety belt pressure. However, even after a seemingly minor accident please contact our office to discuss.

Zika Virus and Travel Update

Zika Virus has been associated with a devastating condition of the fetus called microcephaly. Zika Virus illness was reported in South America in 2015, can be acquired by mosquito bites or sexual activity, and has spread across the Caribbean islands. Medical guidance on prevention, evaluation, and treatment for reproductive age women is constantly updated by national organizations including the Centers for Disease Control (CDC) and the American College of Obstetricians and Gynecologists (ACOG). Below is travel and prevention information available from ACOG at the time of this Book publications. Fortunately, at this time, Zika is much less of a public health threat.

TRAVEL RESTRICTIONS

Pregnant women should not travel to areas where Zika outbreaks are ongoing. Women considering pregnancy should discuss with their obstetric providers the advisability of travel. See the CDC web site for updated lists of affected countries and states. At this time, travel warnings have been released for countries where local mosquito transmission of Zika Virus has been reported.

PREVENTION

Avoiding exposure is best. When traveling to areas where Zika virus has been reported, women should take all precautions to avoid mosquito bites including the use of EPA-approved bug spray with DEET, covering exposed skin, staying in air-conditioned or screened-in areas, and treating

clothing with permethrin. When used as directed on the product label, EPA-registered insect repellents, particularly those with DEET and permethrin, can be used safely during pregnancy.

These protective measures should be followed both day and night as the Aedes aegypti mosquito (which carries Zika virus) bites primarily during the day as well as at dusk and dawn. Reapplication of insect repellant should be practiced as directed on the product label.

Consistently and correctly using condoms during sex or abstaining from sex for the duration of the pregnancy is recommended if you have a sex partner that has traveled to or lives in an area with active Zika virus transmission.

★ More Information

www.cdc.gov/zika/ *… The CDC's up-to-date reference for pregnant women concerned about Zika Virus. Check out your travel destination's warnings.*

.

15. Fetal Health Assessments

Fetal Kick Counts

Because fetal activity is a good indicator of fetal well-being we advise you to begin monitoring your baby's movements in approximately the 28th week of your pregnancy. Before 28 weeks your baby's movements are not a reliable predictor of good health. Nonetheless, always call us if you are unsure what to do.

We recommend the "Count to 10" method for fetal kick counts. Identify the time of day your baby is most active. On a daily basis, see how long it takes for your baby to make the first 10 movements during his/her active time. Most women will experience all ten movements within twenty minutes; but up to two hours is normal as well.

Your growing baby sleeps a lot! Don't try to record your kick counts during his/her quiet time; aim for the typically active time of day. Many women find this time to be shortly after an evening meal. Remove distractions while you are counting such as television, chores, and family. Using a smartphone app makes recording kick counts easy and efficient, and maintains a log. Many free or inexpensive apps are available for your smartphone.

If you don't achieve 10 movements in two hours try walking around for a few minutes or drinking something cold and sweet. Try again for another hour.

Call our office if:

- You felt less than ten kicks in two hours, at the time of the day when your baby is usually active.
- Your baby has not moved for almost half of the day – do not wait until the next day to call.
- Your baby has kicked less and less over the course of a few days, or if you feel too little activity.

If you call with decreased fetal movement we typically will recommend that you come to the office right away for further assessment. This includes a Non-Stress Test (see below), blood pressure check, and sometimes an ultrasound to look at the amount of fluid around the baby. We

cannot assess your baby over the phone, so anticipate a recommendation that you come to the office or hospital for evaluation!

Your perception of your baby's movement and health is the most important tool we have. Be vigilant! We would much rather see you for a false alarm than miss something wrong.

Non-Stress Tests & Electronic Fetal Heart Rate Monitoring

During routine appointments we listen to your baby's heart rate with our small Doppler detectors. A normal heart rate is between 110 and 160 beats per minute. Similarly, our electronic fetal heart rate monitor observes and records the baby's heart rate, but in a continuous fashion. We have two stations in our office for continuous monitoring—with soft reclining lounge chairs!

Two monitors with elastic belts are placed around your abdomen. The lower monitor tracks the fetal heart rate, and the upper monitor observes contractions.

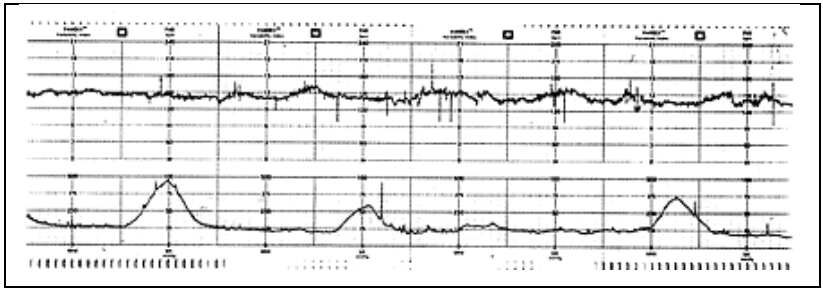
A Non-Stress Test (NST) monitors the baby's heart rate for at least twenty minutes, and we evaluate the heart-rate pattern. It's called "non-stress" because the stress of contractions is not often present. Different than a steady adult heart rate, the fetal heart rate jumps around quite a bit. The fetus is also very sensitive to external sounds and touches as well as his/her own movements. We typically see the heart rate increase a few times during these stimuli. This is your baby "reacting", and when we see this encouraging pattern, we refer to it as a "Reactive NST".

While you are resting during the NST you will have a button to press each time you feel a fetal movement – which will record a mark on the NST paper as well.

The fetal monitor also records your contractions. It is a mechanical strain gauge and senses the presence of the uterus gradually tightening. Baby kicks can change the graph abruptly, but real contractions have a gradual bell-shaped curve.

A normal NST is highly predictive of a baby that is doing well in the womb and that you are extremely unlikely to experience a stillbirth in the

upcoming week. An abnormal (flat) NST does not necessarily mean that you have an unhealthy baby, but it does mean that we should do further assessment.



Biophysical Profile

A Biophysical Profile (BPP) is a more advanced and time-consuming test than the NST. It is primarily done by ultrasound. We use the BPP when the NST isn't normal, when an NST would be insufficient, if we need to look at the amniotic fluid, or if you are already having an ultrasound for another reason.

To assess fetal health, the BPP evaluates the fetal heart rate, fetal breathing movements, fetal body movements, fetal muscle tone, and amniotic fluid volume. This exam can take up to 30 minutes to complete. Two points are given for each metric, and so 8-of-8 is a perfect score for the Ultrasound BPP. Once the test is scored and we feel confident the baby is doing well then you can be sent home with confidence. Otherwise, we will make recommendations for further evaluation, or we plan for delivery.

16. Other Doctors

Pediatricians

There are many excellent pediatricians in the Triangle area. We are glad to give you suggestions for offices that are geographically convenient for you. Your best reference source, however, will be friends and colleagues who also have newborns and toddlers.

Consider what's important to you before selecting your pediatrician. If you would like your baby to see the same doctor every visit, you may need a smaller practice. If you will need appointment availability in the evenings and weekends, then a larger practice may meet your needs. If a Family Medicine doctor already takes care of you, he/she may also see newborns. Are you comfortable with a pediatric nurse practitioner (NP), or physician's assistant (PA)? Does it make the most sense for the pediatric office to be near your workplace, home, or daycare? Many women find proximity to be important during your baby's first several years; there is often a well-worn set of tire tracks between your house and the pediatrician's office!

Most pediatric offices offer expectant parents an opportunity (at no charge) to visit their facility and talk with one or more of their doctors prior to your delivery. However, these are not mandatory. Some have open houses while others will simply direct you to their website. When you arrive at Rex Hospital in labor your nurse will ask you which pediatricians you would like to for the baby.

It is unlikely that your chosen pediatrician will register you in their system until AFTER the baby is born (since they do not have a name or birth date). You will telephone the pediatric office the day after birth, to get established with them. This may seem unusual to you, but it is a system that works! Pediatric offices are expecting calls every day for newborn appointments. They will arrange an office appointment for your baby, one or two days after you get home from the hospital.

A pediatrician will not attend the delivery itself but will see your baby soon thereafter, most commonly the next morning. Most pediatricians no longer come to Rex Hospital. If your pediatrician does not come to the hospital at all, Rex has a neonatology/pediatrics team in the hospital 24

hours a day to care for the baby's routine care needs and unexpected emergencies. In case of a problem your own pediatrician will be notified. The hospital pediatrician will also send your newborn's medical record to your new pediatric office.

Dentists

Good dental health before and during pregnancy is essential for both you *and* the baby. Caries/cavities, poor dentitions, and periodontal disease may be associated with an increased risk of preterm delivery. Schedule an appointment if you have not seen your dentist in the past six months. Screenings and cleanings can be performed in any trimester. Don't feel that you should wait until after you have delivered!

Gum bleeding, inflammation, and gingivitis are common during pregnancy due to hormonal changes. Establishing regular brushing and flossing habits can preserve your gums and teeth. Rinsing with mouthwash and using xylitol-containing gum can help reduce bacteria levels in the mouth. Don't forget to eat a tooth-friendly diet, and drink fluoridated water too!

When you visit the dentist please know that dental imaging ("x-rays"), pain medications, antibiotics, and local anesthetics containing epinephrine can be safely used in pregnancy. Even nitrous oxide can be a safe alternative for many women. If your dentist requires it we will provide a letter indicating that you are under our care and direct them to pregnancy specific dental guidelines they may need to assist in your dental care plan. Instead, you may simply share our standard letter with your dentist which is found on the next page.

Dental procedures are optimally timed for the second trimester, but they can usually be performed safely in any trimester. And remember, cleanings can be done at any time!

★ More Information

www.mouthhealthy.org/life-stages/pregnancy… *American Dental Association consumer website, MouthHealthy.org. Dental Healthcare during Pregnancy.*

www.mchoralhealth.org/materials/brochures-consumer … *National Maternal & Child Oral Health Resource Center. Scroll to the bottom and click on "Tips for Good Oral Health During Pregnancy" for a useful two-page handout. Several languages are available.*

.

ARBOR DENTAL LETTER

Dear Colleagues:

Mrs. _____ is under our care for her pregnancy.

Preventive screenings and cleanings can be scheduled throughout the pregnancy. However, most unscheduled dental procedures are optimally performed in the second trimester, weeks 13 through 28.

For specific pharmacologic considerations, we follow the guidance of the National Maternal and Child Oral Health Resource Center. The *Oral Health Care During Pregnancy: A National Consensus Statement* can be found at ***www.mchoralhealth.org/materials/consensus_statement.php***, and includes a reference table for antibiotics, analgesics, and anesthetics. The American Academy of Pediatric Dentistry also has useful clinical guidelines such as the *Guideline on Perinatal and Infant Oral Health Care*, found on their website ***www.aapd.org/policies***.

In general, we support shielded imaging, local anesthetics with epinephrine, and narcotic pain relievers. Aspirin and NSAIDs should be avoided in the first and third trimesters. Nitrous oxide (scavenged) can be considered if other anesthetics are inadequate. Please contact us if the procedure is of significant duration, or if you have specific concerns.

We appreciate this opportunity to partner with you in supporting excellent dental health. We emphasize to our patients that good dental wellbeing before and during pregnancy is essential for both the mother and her developing baby.

Again, please don't hesitate to call if we can be of assistance.

Sincerely,

The Physicians of Arbor Obstetrics & Gynecology

Optometrists

Eye health is an important part of your overall health and is frequently neglected during pregnancy. Keeping up with eye care after delivery is hard too, when life is even busier! Women with normal (uncorrected) vision should continue to have eye exams on their regular schedule. A dilated eye exam is okay while pregnant.

A small proportion of pregnant women who require glasses or contact lenses may experience a slight change in their vision during the pregnancy. These changes usually resolve with hormonal stabilization after delivery and breastfeeding. Please see your eye doctor if you feel a change in prescription is needed. Some offices will even limit lens charges if your prescription changes again within a few months.

If you have diabetes (including gestational diabetes), high blood pressure, or glaucoma, you are more likely to experience vision changes during your pregnancy. The same is often true if you have taken fertility treatments. If you have pre-existing diabetes it is important to have a comprehensive eye exam before pregnancy as well as in the first trimester to evaluate for retinopathy.

Dry eyes are more common in pregnancy and can be easily treated with over-the-counter lubricating eye drops. Light sensitive migraines can also be amplified in pregnancy.

If you are considering corrective surgery such as PRK or LASIK, your eye surgeon will probably ask you to wait until a few months after breastfeeding is stopped to allow for eye shape to return to its baseline.

17. Twin Pregnancy

Pregnancy with twins is an extra challenging journey, often filled with both excitement and anxiety. A twin pregnancy is more than carrying extra weight and delivering twice! Twin pregnancies are considered "complex" or even "high-risk" due to the increased likelihood of complications. Arbor ObGyn delivers between 10 and 20 twin pregnancies each year.

There are many websites and resources devoted specifically to twins. Below is some quick-start information to help on this journey. A couple of online resources are provided at the end of this chapter.

How did this happen?

Whether your twins were conceived spontaneously, or if you had IVF, there is always the question of how it happened this way. The most common way is that two unique eggs were released and fertilized by two unique sperm (fraternal twins). It can also happen if an egg is fertilized by one sperm, and then splits into two (identical twins). Unless they are of different biological sexes, it is usually not possible to tell whether they are fraternal or identical.

Types of Twins

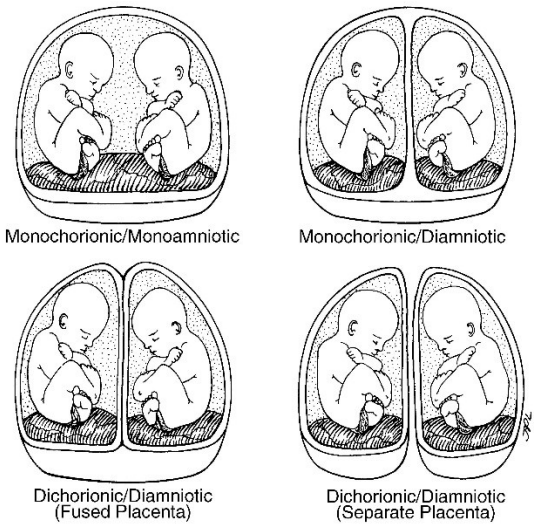
From a medical standpoint, we refer to the twin pregnancy based on the placental support structures: the chorion membrane and the amnion membrane – which are fused together. The chorion binds to the uterine wall, and the amnion encases the baby and its "amniotic fluid". Twin pregnancies have either one (mono) or two (di) chorions and amnions. There are dozens of great explanations on the internet, including:

Di-chorionic/Di-amniotic twins are like two houses in the same neighborhood. Each baby lives in his own house and manages his own resources (two separate placentas).

Mo-chorionic/Di-amniotic twins are like two apartments in the same building. Each baby lives in the same building, but they have their own

private space. They are separated by interior walls and doors, but the exterior of the building is shared (a single shared placenta).

Mo-chorionic/Mo-amniotic twins are like two individuals living in the same room in the same house. They share the resources that come into the space within the same walls (a single shared placenta).



Di/Di twins are by far the most common type and have the fewest complications. Mo/Di twins have the challenge of sharing the placenta, where one baby can receive much less than its share of needed nutrients. Mo/Mo twins can become entangled with each other. If you have Mo/Di or Mo/Mo twins, we will need to transfer your care to a Maternal-Fetal Medicine (high-risk) physician group.

UNC Maternal-Fetal Medicine (high-risk) physicians are available for consultation to us when needed.

Complications

Having a twin pregnancy comes with more complicated situations for the general pregnancy, as well as with the twins themselves. Extra appointments and surveillance are needed to assess for complications.

From the maternal standpoint, anemia is more likely and so iron supplementation will be recommended. Also, you can expect a greater chance of developing hypertension/preeclampsia, gestational diabetes, fatty liver disease, PUPPS, cholestasis, placental abruptions, and thromboembolism.

When considering the babies, all twin pregnancies have a higher likelihood of preterm delivery and lagging fetal growth. More severe complications are seen in the Mo/Di and Mo/Mo twins, and so these are taken care of by Maternal-Fetal Medicine subspecialty doctors.

Appointment Schedule

Twin pregnancies require more frequent appointments once you enter the second trimester. We will see you every 4 weeks starting at 18 and then every 2 weeks from 24 weeks on. Weekly visits are typical after 34 weeks. At Arbor ObGyn your appointments will almost always be with the physicians only. This allows us to complete a quick bedside ultrasound and continue to develop the prenatal and delivery care plan with you.

The babies are checked for their growth by ultrasound every four weeks. We need to make sure that they are both growing, and that they are both growing at similar rates. Physician visits in-between these appointments will include a brief ultrasound to verify individual heartbeats, look at the fluid, and observe the positions of the babies.

Arbor ObGyn refers the 18-week anatomy ultrasound to either UNC Rex or Duke MFM, and this will replace your customary ultrasound at our office. All other ultrasounds can be done at Arbor ObGyn in conjunction with your regular appointment.

Delivery Options

Uncomplicated Di/Di twin pregnancies are recommended to be delivered between 37+0 and 38+6 weeks. Development of fetal growth restriction, new hypertension, or other complexities may warrant earlier delivery.

The decision to attempt a vaginal birth or cesarean birth is largely a personal decision for the mother, and we will respect your choice. Studies have not found any difference in early childhood outcomes based on delivery type for twins. To pursue a vaginal attempt, the first baby must be headfirst (cephalic/vertex). Eighty percent of twins are in this position.

If you pursue a vaginal delivery, the second twin may require a breech delivery or external-cephalic-version. There are additional risks with this, and ultimately you may require a cesarean section for the second twin. See the My Baby Is Breech chapter later in this book. Many of the delivery decisions are based on the ease of your labor and the relative sizes of the babies.

If you choose a C-Section, it will be scheduled during the typical delivery window. Special preparations are made to have adequate medical personnel present for the birth.

Common Questions about Twin Pregnancy

How much weight should I gain? Recommendations are based on your pre-pregnancy Body Mass Index. If BMI 18.5-24.9 (normal), gain 37-54 lbs. If BMI 25.0-29.9, gain 31-50 lbs. If BMI >30, gain 25-42 lbs. Most of your weight gain should occur after twenty weeks.

What are nutrition recommendations? If you would like to meet with a nutritionist, we are glad to send a referral. Your total Calcium should be 1500mg/day in the first trimester and 2500mg/day in the rest of the pregnancy. Prenatal vitamins have very little calcium, and so you should take a supplement. Take two multivitamins or prenatal vitamins daily in the second and third trimester will provide you with the rest of the needed nutrients. Calories should be increased gradually throughout the pregnancy. Normal BMI women typically consume 2,200 to 2,900 calories per day. Increase by 340 calories in the second trimester,

and 450 calories in the third. This isn't much .. be careful of rapid weight gain!

Can I exercise? In early pregnancy, women with uncomplicated twin pregnancies can generally follow the same physical activity recommendations as other pregnant women. As the pregnancy progresses, you will find some limitations to mobility and endurance due to the natural physical changes.

★ More Information

www.acog.org/womens-health/faqs/multiple-pregnancy… *ACOG's Patient information about Twin Pregnancies.*

www.twiniversity.com/… *Twiniversity. A very practical website for all things Twin, including classes, downloadable guides, and information about twins After the birth. A smartphone app is available as well.*

18. Rex Hospital and Preparing for Birth

A trip to the hospital and delivery may seem like a long time away (maybe even next year!), but it will come before you know it. Some of the information in this chapter is time sensitive and you may need to act soon, such as registering for birth classes. ***Consider getting the UNC REX Pregnancy & Baby app for your cell phone***, available free at your mobile app store. Please explore all the weblinks in this section, even if this isn't your first pregnancy.

About Rex

As you know, we deliver our babies in Rex Hospital. (Rex is fulling integrated with the University of North Carolina Health System and you may see the system name formally as UNC REX HealthCare). We also perform gynecologic surgeries there and treat our ill patients. Rex has the best reputation among birth centers in the Triangle. Nearly 500 babies are born in the Rex Women's Center each month and yet it still feels like the small intimate experience most mothers-to-be crave. Rex has a full complement of neonatal physicians, anesthesiologists, lactation specialists, and nurses to accommodate nearly every newborn situation. The labor nurses will be supporting your ideas about childbirth. Remember, they are experts in their craft and know how to achieve a safe and successful labor and delivery. Likewise, the postpartum nurses are experts in your baby's care during the first few days. The administrative staff streamlines the complexities of hospital admission, insurance, and birth certificates as well. We *love* working at Rex!

We are not employed by UNC Rex, however. We are independent from Rex and independent from the other ObGyn practices in our clinical decision making and advocacy for our Arbor patients. UNC Rex now owns the Obstetric Hospitalist / OB Emergency room program, and operates a small practice that delivers in Holly Springs. UNC Hospital in Chapel Hill obstetricians and residents do not practice at Rex or train at Rex. The multiple ObGyn groups that deliver at Rex comprise the ObGyn Department, which serves as a partner to Rex to ensure the highest quality of care is available to you. Most of Rex's policies for inpatient maternity care were developed in concert with our Department and have your best

health in mind. Hospital delivery is designed to ensure mothers and babies go home together, and go home healthy!

UNC Maternal-Fetal Medicine (high-risk) physicians are available for consultation to us when needed.

★ More Information

www.rexhealth.com/maternity… *Starting point webpage for the Birth Center at Rex! Use this link to pre-register. Under the Maternity heading review these unique resources:*

Pregnancy & Parenting Classes, Pregnancy & Parenting Newsletter, Labor & Delivery, OB Hospitalists & OB Emergency Department, Breastfeeding Support, Neonatal Intensive Care Unit (NICU), Maternal-Fetal Medicine Specialists, Cord Blood Donation, Postpartum Educational Resources, Financial Aspects of your Care, Newborn Photography Services.

Also, download the REX Women's Center Pregnancy Information Packet for additional information about delivering your baby at UNC REX, caring for yourself during and after your pregnancy, and caring for your growing family.

*Consider getting the **UNC REX Pregnancy & Baby app** for your cell phone, link located on their Maternity webpage.*

OB Hospitalists and the OB Emergency Room at Rex

In September 2016, Rex Hospital opened a new OB Emergency Department in the Women's Center dedicated exclusively for pregnant women. Although previously contracted with an agency, UNC Rex now employs the clinicians treating women there. These clinicians provide high-quality care to their own patients, and emergency care to those arriving in Labor and Delivery and our OB Emergency Department. Rex's goal is for you to have the same high-quality care experience in the OB Emergency as you would in the Main Emergency Department.

What are the benefits? Rex Hospital previously did not have the capability to provide emergency care when your Arbor obstetrician was out of the hospital or attending to another patient. In the past "any available

obstetrician in the hospital" would be paged to run to your room and try to help. With this new service you can be assured that a board-certified obstetrician will be available to see you when you arrive at the hospital, or during an unexpected emergency when your Arbor physician is not immediately available. In short, this is an added layer of safety for you and your baby.

Will Arbor ObGyn still be my doctor? Absolutely! It is our full intention to attend to you during your hospital admission, labor, delivery, and postpartum. We are not asking the Hospitalists to provide any care management for you except on your initial arrival and in an unexpected emergent situation. We will be there during your labor and to deliver your baby.

How does this change the Hospital evaluation/admission process? Almost all patients who think they may be in labor, have their water broken, or have another pregnancy related concern will be evaluated in the second floor OB Emergency Department – in the Women's Center adjacent to the Labor & Delivery Unit. Bright red signs will direct you to "OB Emergency". The Hospitalists are available and plan to see you in this setting and make an initial assessment. They will provide an initial evaluation and contact your doctor on-call to develop a care plan. We will take over your care at that time. If you do not need admission or further treatment it is possible that you may only see the Hospitalist physician before being discharged. For women who have scheduled inductions of labor, direct admissions to labor and delivery, or planned cesarean sections – all your care will be managed by your regular doctor.

How will the after-hours phone service change? As always, during regular business hours please call our main number so that our nursing team can address your concern. If you have an urgent pregnancy concern after normal business hours or on the weekends, you may still call our main number and follow the phone prompts to be connected to the on-call physician. If you have any symptoms or concerns that require immediate evaluation including but not limited to labor contractions, bleeding, leaking fluid, or decreased baby movements you should simply come directly to the OB Emergency Department at the Women's Center (if you are past 18 weeks pregnant). Because of our ability to always see you, you no longer need to call the on-call obstetrician prior to being seen at the hospital! (Please remember that our ability to accurately diagnose you

over the telephone is extremely limited, and therefore we usually recommend in-person evaluation anyways.) If you are certain your symptoms do not need immediate evaluation, please call Arbor on the next business day and we will make arrangements for you to be evaluated in the office.

Birth Classes & Other Prenatal Classes

If this is your first baby please consider taking a birth class. You will get the most benefit if you take it at Rex since all classes in the Triangle have some information that is specific to the delivery hospital. Birth classes can focus your expectations and are great for partners and coaches too!

Rex offers a variety of other classes including first-aid for babies, breastfeeding, sibling classes, and even prenatal Yoga. A tour is included with the birth class.

It is important to sign-up early for classes. Rex recommends you make reservations early in your pregnancy – although your actual classes will be closer to your due date. Reserving early gives you the greatest flexibility and options of class schedule. Classes offered are available as in-person, live via WebEx conferencing from your home, and self-guided/self-paced online. The UNC Rex maternity webpage has the most up-to-date information.

Pre-Registration

Rex Hospital no longer requires that you "pre-register" to have your baby there. It is important that you have a UNC MyChart account. UNC MyChart is their electronic medical record and billing system. If you have ever been seen by a provider in the UNC HealthCare system, then you probably have a MyChart. Your Arbor ObGyn Portal is not the same. If you don't have a MyChart, follow the Rex Maternity links to get started.

Birth Plans

You expect your family to arrive home with a healthy mom and a healthy baby. That's our job and our commitment. You also will have some expectations about the birth and hospital experience. In almost every case we can achieve both an excellent birth experience and a healthy family. We need to know your wants and wishes so we can support them!

Many patients ask, "Do I need a birth plan?" or "What should my birth plan include?" Deciding to write a birth plan is up to you. Some people like to put their preferences for the labor experience in writing. If you decide to develop a Birth Plan please bring it to our office during one of your prenatal visits for review by a clinician.

Birth plan templates can be found on the internet. Unfortunately, many have out-of-date or simply inaccurate information. Do your best to convey your delivery expectations to us and we'll share our thoughts as well.

Rex is a hospital and as such has policies that are required for safe patient care. For example, we need to have intravenous access in case emergency medicines are needed. Also, the use of some medications requires certain monitoring or assessment for you and/or the baby. Many things are negotiable, however. Just ask!

We want you to have the best experience possible with your labor or cesarean, with the goal of being a healthy mother and a healthy baby after delivery. As you know, unforeseen circumstances may arise that require a deviation from the customary care plan. We'll do our very best to keep you informed along the way.

IMPORTANT:

When selecting Arbor ObGyn you are committing to a hospital-based delivery and are relying on UNC Rex Hospital and the Arbor Obstetricians and partners/colleagues to safely navigate you through the prenatal, labor, delivery, and postpartum care phases. We always have your best health in mind!

You are relying on our considerable years of medical training and our experience delivering thousands of babies to identify and address serious pregnancy issues and ineffective labor. If you are at all concerned that following our medical recommendations will be in opposition to your pregnancy/labor/delivery vision, then let's talk honestly early in your pregnancy. Most often we'll see each other's viewpoint better and recognize where communication can be improved. Some families, however, may find a better fit with another local ObGyn practice and should plan to transfer their care well before the third trimester.

We do offer a "partial care" model: We will not provide your prenatal care if your intention is to deliver at home, with another clinical team, at an outpatient birth center, or at a hospital other that UNC Rex of Raleigh.

Cord Blood Banking

Banking of umbilical cord blood is available at commercial centers and research institutions. Rex participates with the Carolinas Cord Blood Bank (CCBB) which is generally considered a public bank. Extra blood from the umbilical cord, which normally is discarded, is processed and preserved at CCBB. C-Sections are fine too! The young blood cells may be helpful for patients with cancer, leukemia, or other diseases. The blood may also be used for further medical research. Publicly banked blood can be used for anyone in need and is not reserved specifically for your family. You are voluntarily donating your cord blood. You will not have any charges or receive compensation for this donation.

CCBB technicians will interview you on arrival to see if you wish to become—and qualify as—a cord blood donor. A detailed consent form is reviewed if you wish to participate. After delivery of the placenta the tech will return to collect the placenta blood sample. If enough cells were harvested they will come to your postpartum room the following day to complete the donation administrative process.

Please note that there are some days when the CCBB is not collecting at Rex. Also, if you deliver prior to the consent process you will not be able to donate. Last, if not enough cells are not harvested to meet CCBB's requirements you will not be a successful donor.

Private cord blood banks are also available to you, and typically charge for processing and annual storage of the blood. Tissue banking (a portion of the umbilical cord) is also an option. Medical insurance does not cover these costs. Your Arbor obstetricians will gladly collect your cord blood at no charge if you wish to have your blood banked privately. However, if the collection is unsuccessful for any reason we cannot be held liable for any of your expenses or loss. Your blood bank company

will send you a collection kit which you simply bring to the delivery. Let us know you are donating so we have enough time to carefully review the collection instructions for your kit. There are many private banks; three of the largest are CBR, Americord, and Viacord.

★ More Information

www.rexhealth.com/carolinas-cord-blood-bank… *Information from Rex about CCBB. Links to the CCBB website and Be Then Match national donation site.*

19. Labor, Delivery, and Postpartum

Early Labor

In general, we will evaluate your labor after you have been having intense contractions every 5 minutes for at least a few hours, or if you think your water has broken. We will also assess you and your baby if you have vaginal bleeding or decreased fetal movement (see Fetal Kick Counts section). If one of the doctors determines that you are in full labor or leaking amniotic fluid you will be admitted to the hospital. Other circumstances may also require you to be admitted to the hospital.

We prefer not to admit you to the hospital for contractions unless you have had progressive dilation to at least 4 centimeters. Admission prior to 4 cm is associated with stalled labor, the need for oxytocin, and ultimately a higher chance of Cesarean birth.

Upon hospital admission blood will be drawn for evaluation and the baby will be monitored for a period. An intravenous access tube (IV) is started with active labor or labor induction. This does not necessarily mean you will be attached to a bag of fluid, but IV access is required in case of emergency. We do not routinely give enemas or shave the pubic area during hospitalization.

AM I IN LABOR?

Will I know if I am in labor? How do I know if this is really labor or false labor? How do I know if my water breaks?

"Real" labor is experienced in many ways! Late in the pregnancy you may begin labor. Our best advice is to presume labor happens when your contractions have accelerated to about every 5 minutes, last for about a minute, and are of increasing intensity over the course of several hours. If you don't want to carry a stopwatch, just count your total contractions over a two-hour period. Expect about 25 contractions during that time to be typical of real labor. The only way to know for certain is for us to do a dilation exam of your cervix. We can't guess over the phone, so you'll most likely need to come to the office/Rex for an exam. Consider these scenarios as medically meaningful.

- A gush of fluid from the vagina or a constant clear odorless thin discharge requiring wearing a pad.
- Contractions that are generally 5 minutes apart, last for about a minute, and are uncomfortable enough that you don't want to talk through them. "Real" contractions do not go away with rest, and these contractions gradually should be getting stronger and more consistent.

After normal business hours, if you believe you are in labor then come directly to the Rex OB Emergency in the Women's Center for an evaluation (you do not need to call the on-call obstetrician). By the way, 'losing your mucous plug' does not predict if labor is coming soon; please do not call about your mucous plug!

During labor, we will follow your lead with regards to medication administration for discomfort or epidural anesthesia, both of which are easily available at Rex Hospital.

See the section at the beginning of this book titled "How and When to Call the Doctor."

Active Labor

During the early part of labor you will be able to walk around, change positions, use a birthing ball, sit in a rocking chair and basically do whatever makes you comfortable. You may also drink fluids, listen to music and watch TV. On some occasions – if no significant cervical change occurs—we may recommend augmenting your labor by breaking your water or administering intravenous oxytocin (Pitocin is a brand name for synthetic oxytocin). Pitocin is identical to oxytocin, which is the hormone that your body produces to start labor.

The Rex labor nurses are **experts** in instructing and assisting you during all phases of labor. They have considerable experience in managing normal labor patterns, and recognizing poorly progressing labors. They are more valuable that then internet, social media, classes, and well-intended family or friends. Please rely on their advice!

During active labor your nurse and doctor will do cervix exams only as needed to evaluate progress, and only if the information from the cervix exam will change the labor management plan. We might check every few hours in the early stages of labor, and more frequently if labor is progressing quickly. Once you are in active labor your contractions will be much stronger and your cervix will likely change in dilation. Some women may become interested in pain relief through intravenous narcotic medication, inhaled nitrous oxide, or epidural anesthesia. We do not favor one method over the other. We also do not require a minimum dilation for an epidural to be placed. Last, there is no certain 'window' of time or dilation under which an epidural must be placed. It's never too late if you can sit still for the anesthesiologist! If you do request an epidural you will have to remain in the labor bed afterward since your ability to safely stand will be compromised.

Your Arbor physicians prefer to take an observational approach and let your labor progress as naturally as possible. Our labor nurses are experienced and excellent and can guide you through a challenging labor. Because we can all monitor the baby's heart rate and your contractions remotely from the nursing station and lounges, the doctor and nurse can spend as little or as much time in your hospital room as you desire. Throughout the day your Arbor physician is visiting postpartum patients, completing circumcisions, performing cesarean deliveries, and possibly attending to other laboring patients. Even though you may see the doctor for just brief periods throughout the labor, please be reassured that we are constantly evaluating your progress, collaborating with our nurse team, and directing your care plan.

Delivery

At this point you will have reached complete dilation (10 centimeters) and will begin pushing. Often women push while reclining with knees up and slightly out to the side. You may, however, push in any way that is most comfortable and natural. The Rex labor nurses are also experts in instructing and assisting you during this phase. Please rely on their advice!

During the actual delivery most women deliver while reclining. We find this the safest for the baby and easiest for the doctors to control lacerations. We rarely use episiotomies (<3%) but on occasion it's appropriate to reduce tearing. This decision is usually made just as the baby's head is crowning, and we will discuss it with you.

Once the baby has been delivered we place him/her on your abdomen "skin-to-skin." This helps promote bonding and early breastfeeding. As long as the baby is doing well you may hold him/her skin-to-skin as long as you like. Delayed cord clamping is our standard practice, and so you or your partner may cut the cord after a minute or so.

At some point you'll want to know how much your baby weighs! We can weigh the baby in the room and then place it right back on your abdomen. The length is recorded shortly after. You will be able to breastfeed very soon after delivery, usually within the first hour once your newborn shows signs of interest.

Immediate Post-Partum

Ninety minutes after delivery you will move to a different room. Approximately 24 hours after birth the Rex Nursery team will come to your room to bathe the baby in your presence. Expect the baby to remain in your room throughout your hospital stay. Sending the baby to a "respite nursery" is no longer an option. Lactation nurses visit every mother and will have additional visits if there are struggles breastfeeding. Circumcision of your newborn baby boy, if desired, is usually done the following day.

If you have a C-Section you will go to the Birth Center Post-Anesthesia Care Unit (PACU) immediately after the operating room. Most often the baby is doing well and will accompany you. On occasion, your baby will need some assessments in the nursery and will not be able to meet you in the PACU right away. When you've regained some strength in your legs (about an hour), you will move on to your postpartum room with your family. See the C-Section section of this book for additional information.

Hospital Recovery

Rex provides a packet of information to each mom in your postpartum room. Among these pamphlets are resources for nutrition, newborn blood screenings, hearing screening, jaundice, and car seat safety. Rex also provides a wonderful booklet, *A New Beginning – Your Personal Guide to Postpartum Care*. This resource covers physical changes after birth, breastfeeding, and caring for your baby.

Women with a vaginal delivery will stay one or two nights at Rex. This is a time to bond with the baby, get acquainted with his/her needs, and learn (or relearn) how to care for a newborn. The Rex postpartum nurses will help you every step of the way. Postpartum is also a period of significant physiologic changes. Although complications are rare we will do frequent evaluations of your bleeding, blood pressure and pelvic health. The lab will check your blood levels on the first postpartum morning.

Women with C-Section deliveries will stay two to four nights (two or three is most common). You may drink clear fluids shortly after delivery. You may eat regular food 4-6 hours after surgery. Rex uses a room service menu system – just order from your hospital phone. Start with something you know will be easy on your stomach. The next day or two will focus on pain control and mobilization, as well as all those baby needs! In order to be discharged home you'll need to:

- be able to walk around the hospital floor without assistance
- eat regular food
- urinate without difficulty
- not have a fever, severe anemia, or blood pressure concerns
- have your pain controlled with pills only

For all our new moms we offer breastfeeding compatible prescriptions for pain medicines at the time of discharge. These will be for the same medicines used on the postpartum ward: ibuprofen and oxycodone. Continue to take your prenatal vitamins. We will also review which of your other medicines should be continued.

An Arbor doctor will check on you each day of hospitalization. The timing of our visit will be coordinated with our other obligations around the hospital, your need for rest, and your visits from the pediatrician, friends, and the photographer. Sometimes our visit will require a thorough physical exam and at other times may just be a discussion of recovery expectations and recommendations. Our postpartum nurses

provide knowledgeable care for you and will certainly contact us if your recovery is not progressing as expected.

Rex Hospital is a very inviting and comfortable place to stay with excellent care, great food, and dedicated hospital staff. However, it may seem that you have a revolving door to your room with an endless stream of visitors: nurses, nutrition services, obstetricians, pediatricians, anesthesiologists, housekeeping, birth certificates, pharmacy, the nursery, registration/billing, and photographers … not to mention your own family and friends! Enjoy your stay but realize that you will have more control over your schedule once you are at home. Women with vaginal deliveries can go home as soon as 24 hours postpartum, and women with C-Sections can go home after two nights. If you anticipate an early departure please let us and the nursing staff know so we can complete the administrative tasks for you without delay. Plan to leave the hospital by 11:00 a.m. on the day of discharge.

20. Inductions

Sometimes labor does not start on its own and it becomes "medically appropriate" to have your baby. This is when we induce labor—that is, artificially start the labor process. The "appropriate" time to have your baby may be based on your other medical conditions, whether you are overdue, or special logistical circumstances. We are usually balancing the risks to you and your baby by prolonging the pregnancy versus the risks of premature or unanticipated cesarean delivery. We have a detailed handout given to you in the last weeks of pregnancy – look at it now on our webpage (see "More Information" at the end of this chapter for a link).

Rex Hospital allows us to schedule your induction up to one week in advance. Although it may make your planning more difficult, it keeps the scheduling books open by diminishing competition among the Ob-Gyn practices from making 'just in case' reservations. Rex permits five or six inductions each day to allow planning for nurse staffing levels. At Arbor we try to schedule an induction day so that your delivery does not fall into a time that might be covered by our call-sharing partner group.

We feel strongly that your best chance of a successful vaginal delivery occurs when you enter labor on your own!

Inductions are carried out at the Rex Hospital Birth Center. There are several different methods for inducing labor. The method that we choose depends on your cervical dilation and effacement. If your cervix is not very dilated or effaced (thinned) then you will come to the hospital the night before your induction to undergo 'cervical ripening.' There are several methods that we may use with the ultimate goal to dilate and efface the cervix overnight under more restful conditions. Mechanical dilation with a catheter and oral/vaginal medications are two of our most common techniques for ripening. You will stay overnight and continue the induction in the morning.

If you don't require 'cervical ripening' then your induction will most likely start in the morning. A nurse from Rex Labor and Delivery will call you and advise you what time to arrive at the Birth Center. Please have your bags ready and childcare arranged so that you can arrive quickly after being called to the hospital. Once at the hospital you will be taken

to a labor room and be administratively admitted. The Arbor doctor will then see you and get the induction started. The usual method of induction involves giving you oxytocin (Pitocin) medicine through an IV, breaking your water, or both. After this we usually need to increase the oxytocin dosage until your contractions become strong and you progress into early labor. At that point, your labor will be the same as if you had come in for spontaneous labor.

Occasionally, the Rex Birth Center is full and they may have to postpone your induction by a few hours or more. It can even be pushed back a full day. We can advocate for your admission to the hospital, but we do not have the final authority for bed availability.

Medically Indicated Inductions

Several pregnancy-related situations can increase the risk of stillbirth. Examples include preeclampsia, gestational diabetes, lagging fetal growth, and low amounts of amniotic fluid. Certain maternal medical conditions also increase your stillbirth rate, such as hypertension, a previous stillbirth, obesity, age greater than 40 years, or blood clotting disorders. Each condition has a recommended gestational age-range for delivery. Most medically indicated inductions occur between 37 weeks and your due date. We may also want to provide fetal-wellness assessments in our office during the weeks prior to induction.

Overdue!

Keep in mind that your due date is just our best estimate of delivery; only five percent of babies deliver on the actual due date! Labor normally starts between three weeks early and two weeks late. For many years the medical community felt that up until 42 weeks the risk of stillbirth was acceptably small and difficult to reduce further (approximately 1 per 1,000 live births). We still feel that way! If you would like to wait for labor up to two weeks overdue, we support you. In the past 15 years, large studies have found that the C-Section rate doesn't increase for women who are induced at 41 weeks, compared to those women awaiting labor until 42 weeks. So, our contemporary practice is to allow "overdue" inductions after the completion of 41 weeks. If you would like to be induced, we will

discuss logistics as you approach your due date. Our hope is that you'll go into labor, but we can still reserve an induction date with Rex Hospital as a back-up plan. Remember, you must be overdue for at least one full week.

Elective Induction

In general, we discourage inductions without a medical basis since historically this has been thought to increase the likelihood of C-Section. Some newer studies suggest that induction after 39 weeks may be a reasonable course. We do recognize that sometimes it makes the most sense for your baby to be born on your schedule. Common requests include military deployment of a spouse, arranging special needs- or elder-care, workplace restrictions, geographical distances, or mobility limitations. Unfortunately, Rex Labor & Delivery currently restricts our ability to schedule elective inductions in advance.

★ More Information

arbor-obgyn.com/obstetric-topics … *Arbor ObGyn's webpage – see the Induction of Labor tab for information about induction, the logistics, and the process.*

21. Epidurals at Rex Hospital

Labor epidurals (and spinal anesthesia for C-Sections) are performed by anesthesiologists at Rex. Obstetricians at Rex do not place epidurals. The anesthesiologists and assisting nurse-anesthetists may be employed by UNC Rex Healthcare or are part of an Anesthesia team that is contracted to provide services throughout Rex Hospital. Their services and time are billed to you separately from Arbor and Rex. Contact the hospital for specific billing questions.

If you are interested in an epidural an information flyer and consent form will be reviewed during your admission. Patient Controlled Epidural Analgesia (PCEA) is now being used at Rex. It allows you to provide additional dosing of medicine in your epidural for extra relief, by simply pushing a button.

What is an epidural? Many women choose a form of pain relief called an epidural for their labor and delivery. An epidural is a catheter that is placed into the anatomic location known as the epidural space that is between the bones in the lower part of the back. The catheter is very small and allows for delivery of pain medications specifically to the nerves that sense pain in the lower half of the body. The procedure takes place in your labor and delivery room. The catheter is connected to a small pump that continuously provides pain medication throughout labor and delivery.

Who is eligible to receive an epidural? Most women can receive an epidural as soon as they are evaluated to confirm that they are in active labor and have had the appropriate blood tests performed. There are instances when it may not be safe to place an epidural, including in women with hemorrhage or bleeding, those taking blood thinners, those with an inherited bleeding disorder, those with low platelets and those with infection in the lower back. Women with low platelet counts (<70-90,000) are not usually candidates for an epidural; this is uncommon.

Some women may benefit from a consultation with the anesthesia team during the mid-pregnancy. Consultation may be useful if you have had back surgery, for example.

What are the benefits of the epidural? The primary benefit of the epidural is excellent pain relief during labor and delivery. This is achieved by delivering small doses of medicine directly to the nerve roots that transmit the feeling of pain. This minimizes drug exposure to the baby. The epidural can also be used as anesthesia for forceps delivery, caesarean delivery or episiotomy repair. Some patients experience an itching phenomenon while receiving epidural medication. This is a common side-effect and easily treated with medication. Other women may see their blood pressure temporarily drop after placement.

Who places the epidural catheter? An anesthesiologist will place the epidural. You will be asked a series of questions to ensure that you are a candidate for an epidural. Please feel free to talk with your physician about any medical condition or specific concerns you have regarding the procedure.

22. Cesarean Sections

As you probably know, Cesarean Sections can occur as either a scheduled or unplanned event. Even though we perform C-Sections regularly it is still a major abdominal surgery and so we don't take it lightly. For all women who attempted labor with Arbor (spontaneous or induced), our C-Section rate has been less than 13% for several years. We also have the lowest C-Section rate for first-time mothers, among all the private practices delivering at Rex!

Scheduled C-Sections

If you are planning for C-Section expect to deliver in the week prior to your due date. Most commonly you have had a C-Section before and have decided to have a 'repeat' C-Section. Without another medical indication you must have completed 39 weeks at the time of your surgery; that is, not earlier than exactly one week before your due date. This is a Rex and ObGyn Department rule and important to ensure the health and maturity of your baby. Also, consider whether you would want your "tubes tied" for permanent contraception at the time of C-Section.

At Arbor we start to arrange your C-Section date when you are 24-28 weeks along. We generally know the doctors' schedules at that time. Picking a C-Section date involves the coordination of your preferences, Rex's availability, and your due date. If you have a preference of doctor we can let you know his/her schedule and availability at Rex. Planned C-Sections are scheduled Monday through Friday, and Rex limits the number of C-Sections per day. We find that a mid-morning C-Section works best for most families. The hospital and anesthesiologists do not permit us to schedule C-Sections on the weekends.

As you know, one of our doctors is committed to hospital care each day. The doctor at Rex on your day will perform your C-Section. We make sure your last prenatal appointment is with that same doctor so details and expectations can be reviewed with you at this 'pre-op' visit. We also call this a 'long OB' appointment. The appointment is typical in length for you but gives the doctor a bit 'longer' to complete all the necessary administrative tasks for the hospital. We will also arrange a pre-

anesthesia testing (PAT) appointment at Rex Hospital. This is currently administered with Perioperative Care and Surgical Services, and you should come to the "Main Entrance" of the hospital – ***not the Women's Center***. The Main Entrance is where the hospital registration desks are, as well as the principal operating rooms. This is scheduled for you one or two days before the C-Section and involves required administrative and anesthesiology reviews, lab tests for the big day, and instructions for arrival.

You may have heard about the Enhanced Recovery After Surgery (ERAS) program. This is a national movement with protocols to optimize your care before, during, and after your surgery. All of this will be reviewed with you at the PAT appointment. Some recent highlights of ERAS include providing you with a carbohydrate drink before surgery, loosening restrictions on preoperative fluid consumption, administration of prophylactic pain medication while in the operating room, food consumption shortly after delivery, and pain management protocols to reduce the need for opioids narcotics.

On the day of a scheduled C-Section you will arrive at the Birthing Center two hours prior to your surgery. You will be greeted by our nursing staff and they will verify your identity from the wristband received during your PAT appointment. An IV will be started in your arm and the baby monitored to ensure he/she is doing well. The anesthesia and operating room crew will come and speak with you and our Arbor surgeon will see you as well. Read the following section for General Information about C-Sections.

If you have a C-Section planned but go into labor beforehand just call the office or on-call physician. You will likely have your C-Section at that time with the Arbor physician on call. Please remember that the Rex anesthesiologists are restrictive about food/drink intake to use a spinal anesthetic. Otherwise you may need general anesthesia (put to sleep) for unscheduled C-Sections. Your support companion will not be permitted in the O.R. if you have general anesthesia. If you think you are in labor or your water broken, stop eating and drinking right away – until we can evaluate you and be certain.

We know your friends and family are excited to see you and the baby after delivery. However, the intricacies and logistics of a hospital surgery

will not permit them to see you or the baby right away. We recommend that you tell your visitors that they will be unable to see you or the baby until four hours after your scheduled surgery time. This allows enough time to complete your surgery, recover in the PACU, transfer and orient to the postpartum room, and spend a few minutes adjusting to your new surroundings and new baby. If desired your visitors are certainly permitted to wait in the hospital waiting rooms but there are no viewing areas for the baby. Your support person can relay information to your visitors.

Unscheduled / Intrapartum C-Sections

During labor there are many situations in which the benefits of a C-Section delivery become apparent. The most common reason by far is 'arrested' labor. This means that your cervix won't fully dilate or that after pushing for some time the baby still won't deliver. As physicians we can assist with the strength of your labor by adding Pitocin but sometimes it's still not enough. The geometry of your pelvic bones may not be able to accommodate the baby or your baby may just be too large. Often the baby is oriented in the wrong way (occiput posterior, OP). Birth is designed for the baby to be facing down during delivery, and so if the baby is facing up then the neck may not flex enough to allow full descent through the pelvis and birth canal. Prior to active labor it's not possible to tell the final orientation of your baby. If we suspect he/she is "OP" then our nurse will help change your body position in labor to encourage rotation of the baby.

Other reasons for an intrapartum C-Section include fetal heart monitoring that is not reassuring to the physician. We have your baby's best interest in mind and if he/she isn't tolerating the labor then the only reasonable option is to expedite delivery via C-Section. Lastly, sometimes medical conditions develop during the labor that necessitate a C-Section, such as heavy placental bleeding.

If it is determined—despite your best efforts and our best efforts—that a C-Section is appropriate we can move right to the Birthing Center Operating Rooms from your labor room. Medicine needed for cesarean delivery can be injected using a preexisting epidural.

From this point the cesarean section process is like a scheduled C-Section. Please review the notes in the following section.

If you do have a C-Section during the labor course you will also go to the Birth Center Post-Anesthesia Care Unit (PACU) immediately after the operating room. On occasion your baby will need some assessments in the nursery and will not be able to meet you in the PACU right away. When you've regained some strength in your legs (about an hour) you will move on to your postpartum room with your family.

General Information about C-Sections

Although common, C-Section is a major abdominal surgery and has real surgical risks. But keep in mind that any individual complication is extremely rare. These risks include but are not limited to injury of adjacent anatomic structures (e.g. bowel, bladder, ureters, blood vessels, and nerves), injury to the cervix or uterus, infection of major organs or skin, poor scars/healing, adverse reaction to anesthesia, hysterectomy, and/or death. Also, laceration or injury to the baby may occur during delivery. Infection or breakdown of the skin incision is the most common complication and this happens in approximately 1-3% of surgeries. Potential problems related to recuperation include difficult pain control, blood clots to the legs or lungs (DVT/PE), poor healing, infection of the uterus such as endometritis, disruption of the incision, and/or the need to return to the operating room for additional surgery. All these complications are rare but more likely to occur in patients who have prolonged labors, have coexisting medical conditions, are overweight, and/or have had previous abdominal surgery. It is unlikely to happen but sufficient bleeding can result in anemia or the need for transfusion of blood products. Blood transfusion has its own inherent risks of infection and allergic reaction. Catastrophic bleeding could require a life-saving hysterectomy or other procedures that would limit childbearing in the future.

You might be surprised at how many hospital staff members it takes to run a successful C-section. You will not be alone! A nurse anesthetist and anesthesiologist will be with you and speak to you throughout the procedure. There will also be two surgical techs assisting the doctor performing the surgery. Another nurse is our circulator and her job is to assist you in getting prepared and to assist the surgeon and anesthesia team with any additional equipment needs. She is also in charge of documenting the entire procedure and keeping track of all our instruments

and surgical sponges. The nursery also has a team present to assist with your baby. And, if you're donating your cord blood to the Carolinas Bank then their technician will also be present. We often play music during your surgery so please let us know if you have any song preferences!

You and our operating team will head back to the operating room at your scheduled time (or, if in labor, when the C-Section plan is decided). As a safety requirement we will verify your identity and planned procedure several times throughout your visit. The father of the baby or other support person will be dropped off in an adjacent waiting room and given a pair of disposable 'scrubs' to place over his clothing. Once you are in the operating room you will be asked to sit on the edge of the operating table for placement of your spinal anesthesia. We will ask you to hunch forward, slouching your shoulders and pushing out your lower back to optimize the placement of the spinal anesthesia. One of our techs will support your arms and shoulders and you can lean in against her. Spinal anesthesia is a single dose of medicine designed to make you completely numb to pain from the umbilicus to your toes for approximately two hours.

After we help you lay down on your back on the operating table we will again listen to the baby's heart rate. So that you are not completely flat on your back the operating table may be tilted slightly to your left. You will be able to feel some pressure sensations on your abdomen but nothing sharp. Your arms will be outstretched on padded armrests so that you do not inadvertently touch the sterile surgical areas. A Foley catheter will then be placed through your urethra (you are numb already) into the bladder since you will no longer feel the urge to urinate, and decompressing the bladder makes the surgery safer. Our nurse then uses a sterilizing solution to wash your abdomen. This takes three minutes to dry and then we will place large blue drape sheets over your body and chest to protect you from getting splashed with any liquids. An antibiotic is administered in your IV to reduce the chances of a skin infection. Once we've assembled our equipment then we pinch your abdomen a couple times to verify that the anesthesia is working well and that you don't feel a thing. We will bring your support person into the room once we're certain that you're comfortable. His/her job is to sit next to you, hold your hand, and help relieve any anxiety.

The surgical procedure itself takes about one hour. From the start it takes 10-15 minutes to deliver the baby and the rest of the time is spent putting everything back together the way it is supposed to be! You will feel some pressure on your upper abdomen delivering the baby and light touch as we lean against you—this is normal. We have a see-through drape option so that you may see the baby being born if that is your preference. Because we keep it cool in the operating room, it's not a suitable place for the baby to stay very long. After delivery the nursery attendant takes your baby to a small room next door where they can ensure that he/she is doing well. After a few minutes they will call over your partner to cut the umbilical cord. Your baby is then swaddled and brought back into the O.R. so that you can spend time together. We are usually able to offer moms the opportunity for skin-to-skin bonding while the rest of your surgery is completed! Our goal is for you, your partner, and your newborn to stay together during the entire surgery, transport, and recovery phases.

Your surgery is done in a very standard fashion. Multiple layers of the abdomen are closed individually. All the Arbor surgeons sew the skin shut with a dissolvable suture that you won't be able to see. Staples are very rarely used. Either waterproof skin glue (Dermabond) or Steri-Strip tape pieces may be placed across the incision to give additional support. A protective dressing may be laid on top of it as well. The skin glue will flake off after a week or so. If Steri-Strips are used and do not come off by themselves in one week's time please remove them, otherwise they become grungy and unpleasant.

Prior to leaving the operating room, you may receive additional analgesia. A Quadratus Lumborum (QL) block is an ultrasound-guided anesthetic injection into your flanks. QL blocks are used for pain relief after hip and abdominal surgery, including cesarean delivery. The long-acting analgesic Exparel is used to provide significant relief for the first 24 hours. This reduces the amount of oral narcotic pills you will need. When this medicine wears off, you may experience an increase in pain—this is normal.

In the PACU you will be given ice chips and clear liquids to drink. We prefer you not to try regular food until at least 4-6 hours after delivery. Rex has a telephone menu system and you may simply call the cafeteria to order what you would like. The cafeteria already knows when you are

permitted to eat solid foods. It is not necessary for you to have flatus (pass gas) or walk around before trying solid foods. If you are hungry, eat something! Your first meal should be something palatable and likely to sit well on your stomach. If your family is bringing food to you please ask them to be logical in their choices since you've just had major surgery.

After a C-Section, whether scheduled or unanticipated, the typical hospital stay is two or three nights. In order to leave the hospital you must be without a fever, eat regular food, have your pain adequately controlled with pills, and be able to walk around unassisted. Most women can achieve these goals after two nights and some will stay three nights. In unusual circumstances you might have to stay the fourth night, perhaps if your baby needs additional time at the hospital.

The medicine placed in your spinal will provide some additional pain relief for the first 24 hours. We also give a medication called Toradol (ketorolac) which is like IV ibuprofen. Once you are tolerating solid food we will transition to pills. As part of our ERAS protocol, we will you're your ibuprofen (Motrin) and acetaminophen (Tylenol) on a strict schedule. Any additional pain can be controlled with oxycodone narcotic pills supplemented. A stool softener will be offered to you to counteract constipation from the narcotic. Several medicines will be available to you to help with itching, nausea, constipation, and stomach gas pain—just ask for them! We will review any medications you were on during the pregnancy and those can be restarted at this time as well.

The bladder catheter will be left inside for at least 12 hours, but will be removed by 24 hours following delivery. The catheter should remain until you feel the sensation to urinate. For your safety we do not want you stumbling to the bathroom in the middle the night if your legs are still unstable from the spinal anesthesia. If the catheter is bothersome to you and you can ambulate then please ask the nurse if the catheter can be removed.

If used, the protective dressing will be left on your abdomen for the first one or two hospital nights. This helps allow the skin to heal and reduce the chance of acquiring an infection. Use plain soap and water with a washcloth to **gently wash** your incision. Always wash from side-to-side along the direction of the incision so that you don't put unnecessary strain on it.

On the first morning after surgery we will check for anemia and start to unplug you from everything! Your IV will be removed, your catheter removed, and you will transition to pills for any pain needs. Showering on the first postpartum morning will be magically refreshing! You will then continue to bond with your baby and work on breastfeeding if that's your preference. Lactation specialists will be available to assist you. On the second or third day you will be ready to go home.

We will give you prescriptions for any pain medications or other medications needed for home use. We will order these at the Rex pharmacy, and for convenience will be brought to your room before discharge! Your postpartum visit with the delivering doctor will be arranged for approximately 5 to 6 weeks postpartum.

23. VBAC – Vaginal Birth After Cesarean

Some women who had a Cesarean delivery with their first pregnancy are interested in laboring and attempting a vaginal delivery with their current pregnancy. This preference is a personal decision and you need to weigh the risks, benefits, and likelihood of success. Although we can offer a Trial Of Labor After Cesarean (TOLAC) obviously we can't guarantee a successful VBAC. Going through a long trial of labor and ultimately ending up with a C-Section can be very disappointing. On the other hand achieving a VBAC can speed your recovery and in many cases is highly satisfying.

To be considered a candidate for TOLAC with Arbor you must have had only one previous C-Section.

The likelihood of successful VBAC highly depends on the circumstances surrounding your original C-Section. Women who never attempted labor (e.g. breech, placenta previa) have the highest chance of success approaching 80%. Women who went through labor, pushed for a few hours, and then had a C-Section for a reasonably sized baby will be less successful – less than 50%.

Algorithms predicting success are available based on studies of large populations of women attempting VBAC. Conditions that contribute to success are: younger maternal age, optimal maternal weight, a previous vaginal delivery, and spontaneous labor. Factors that negatively impact a successful VBAC include obesity, older maternal age, black or Hispanic race, failure to dilate or descend in the C-Section pregnancy, and the need for induction of labor.

Because of the limited likelihood of success we do not favor inducing labor for women requesting VBAC. Many women who are interested in VBAC will schedule a planned C-Section "just in case," perhaps a week past the due date.

Please understand that the risk of VBAC includes but is not limited to rupture of the uterus at the site of the previous scar. The risk that the uterus will rupture is approximately one percent. If the uterus does rupture, there is a 30% chance that there will be injury to the baby including

permanent neurological damage or death. There is also an increased likelihood of blood transfusion and hysterectomy. If such complications occur, you may need to undergo additional medical procedures and you and/or the baby may be in the hospital longer.

Women undergoing TOLAC should labor in the hospital (not at home) with the use of continuous electronic fetal monitoring. Conditions can change quickly and you will want to have all emergency options rapidly available. Again, do not plan to labor at home.

We will support your decision to try for a VBAC. However, you are welcome to change your mind and proceed with C-Section at any time. As your pregnancy progresses we may counsel you more toward or away from TOLAC/VBAC.

We will ask you to review and sign a consent form at your prenatal visit indicating that you understand the risks of TOLAC/VBAC.

24. What if My Baby is Breech?

Breech means that the baby's buttocks or feet, instead of the head, are nearest the birth canal. Fortunately, fewer than 5% of babies are breech by the time you reach your last month of pregnancy. In fact, we do not formally assess the position of your baby until you reach the 36th week. By then most babies are fixed in a position and 36 weeks is also the earliest we might consider 'turning' the baby. In most situations we can determine if the baby is breech by an abdominal or pelvic exam. To be certain, however, our current practice at Arbor ObGyn is to do a brief ultrasound (no cost) at your 35-37 week visit.

Planned vaginal birth for breech babies was abandoned in 2006 following large studies of newborn health. The risk of serious injury or death to the baby is higher with vaginal breech delivery than if a cesarean delivery is planned. A vaginal breech delivery can be appropriate if the baby is unexpectedly rapidly delivering or if the breech baby is the second in a set of twins.

C-Section has its own risks as well. Therefore, we encourage an attempted External Cephalic Version (ECV, or Version) if your baby is breech. A Version is done by placing the obstetrician's hands over your abdomen, lifting the baby's buttocks from the pelvis, and rotating the fetus until the head is oriented in the pelvis.

The benefit to attempting a Version is to potentially avoid a Cesarean surgical delivery.

Complications rarely occur with Version. Some examples are: Vaginal bleeding (1 in 300 attempts); abnormal electronic fetal heart rate monitoring, requiring delivery (1:450); rupture of membranes, requiring delivery (1:500); stillbirth (1:1,000); abruption of placenta, requiring delivery (1:1,200); and prolapse of umbilical cord, requiring delivery (1:1,600). Some complications require emergency cesarean surgical delivery under general anesthesia. External cephalic version is moderately uncomfortable but can be a very painful for some women; most procedures are not attempted for more than fifteen minutes.

Delivery on the day of the Version procedure or shortly thereafter may result in a premature birth. Some premature babies will need to stay in

the hospital for an extended period due to underdevelopment of the respiratory, endocrine, and/or neurologic systems. Labor begins in a small fraction of women following the procedure, necessitating delivery. Vaginal and cesarean surgical deliveries each have their own risks. Cesarean deliveries have increased risks for damage to other organs, surgical site infection, reactions to anesthesia, and need for blood transfusion.

Factors that reduce the likelihood of success are a large fetus, maternal obesity, minimal amniotic fluid, no prior vaginal deliveries, limited pain tolerance, and prior abdominal surgery. If ECV is unsuccessful then a cesarean surgical delivery should be scheduled after the 39th completed week of pregnancy.

If you decide against attempting a Version, the alternatives are: (1) await spontaneous conversion to 'head-first,' or (2) schedule a cesarean surgical delivery after finishing 39 weeks; i.e. one week before your due date.

Please be aware that it is not safe for your baby to attempt a breech vaginal delivery. You may enter labor spontaneously at any time. If the baby is not 'head-first' a cesarean surgical delivery will be recommended at the time of hospital arrival. Prolapse of the umbilical cord after rupture of membranes is more common with breech pregnancies and requires an emergency C-Section delivery.

If you would like to try the ECV we will schedule this procedure for you at Rex, mid-morning, with one of the Arbor obstetricians. You should not eat or drink after midnight so your stomach is empty (in case of a need for an emergency C-Section). On your arrival the nurses will draw some blood, establish intravenous access, and monitor the baby's heart rate. The doctor will reevaluate with ultrasound to map the baby's position. An injection of terbutaline is given under your skin helping to relax the uterus. Your heart rate may increase after the terbutaline. The procedure is then attempted, intermittently observing the baby with ultrasound. Regardless of success we monitor the baby's heart rate for at least 30 minutes afterward. Bring someone with you since you may not be comfortable driving home. Plan to take it easy the rest of the day.

If you have a successful Version then your care will resume a routine schedule and await labor. We will verify the position of the baby on each visit. Rarely will a baby return to breech position. If the Version is unsuccessful, our office will help you plan for a C-Section when you reach 39 weeks.

★ More Information

www.acog.org/womens-health/faqs/if-your-baby-is-breech… *ACOG's FAQ Sheet, "If Your Baby is Breech".*

25. Circumcision of the Newborn Boy

Circumcision is the removal of part of the foreskin of the penis – the part of the outer skin of the penis that covers the glans (head) of the penis. Because the risks of circumcision are minimal and the benefits are limited, deciding for or against circumcising your son is a personal choice. Equally strong opinions and advocates exist for both options.

The American Academy of Pediatrics reviewed Male Circumcision in 2012. They concluded that the "evaluation of current evidence indicates that the health benefits of newborn male circumcision outweigh the risks, and the benefits of newborn male circumcision justify access to this procedure for those families who choose it." They also note that "parents should weigh the health benefits and risks in light of their own religious, cultural, and personal preferences, as the medical benefits alone may not outweigh these other considerations for individual families."

Health benefits include the reduction of urinary tract infections, sexually transmitted infections, human papillomavirus (HPV), and penile cancer. Sexual function and sensitivity do not seem to be impacted by circumcision. Care and cleaning of the newborn penis without circumcision is a bit more involved as compared to the circumcised penis. However, care for the newly circumcised penis will require some effort from the parents for the first two weeks.

Just like the benefits of circumcision, the risks are also minimal. Infection, bleeding and damage to the penis rarely occur. Sometimes there are anatomic abnormalities such as hypospadias that require us to stop the procedure and recommend outpatient follow-up with a pediatric urologist.

Circumcision is primarily performed by our obstetricians. Some pediatricians would prefer to do the circumcision themselves and, in such cases we defer to them. After selecting your pediatrician ask them if they have a preference.

We normally use a lidocaine anesthetic injection around the base of the penis to numb the area being operated – also known as a Subcutaneous Ring Block. This carries with it an extremely small risk of a temporary bruise but no other complications. Your son will also be given a few drops

of an oral sugar solution that has been shown to calm newborns during the procedure. Oral Tylenol (acetaminophen) is given after the circumcision. There are several devices used for circumcision; all the Arbor obstetricians all use the Gomco clamp and technique. Others you may hear of are Mogan and Plastibell. We have trained most extensively with the Gomco and find that it is safe, gives a great cosmetic result, and requires minimal aftercare by the parents.

Circumcision is normally done on the first or second day after birth but first requires the pediatrician to perform a complete physical exam and give your son medical clearance for the procedure. The hospital will provide you with a consent form to be signed prior to circumcision. We do not permit family members to watch the circumcision and we feel strongly that a local anesthetic must be used for the newborn's comfort. The procedure takes about 15 minutes to perform and the nursery will observe him for 30-45 minutes afterwards. In general we like to see feedings well established before circumcision is done. For this reason circumcision is often done on the day of your discharge. Do not be concerned that the procedure is done on the same day you are going home.

The nursing staff will help you with care of your son's circumcised penis and during and after your hospital stay. In brief, it is important to use an ointment such as Vaseline on the penis glans to prevent adhesions and sticking to the diaper. You will also want to retract the skin from the glans each day, also to prevent adhesions.

In summary, the decision to circumcise is entirely yours to make. If you know that you want your son circumcised we strongly recommend that you have it done during your hospitalization. Circumcision done after discharge will have to be at the office of a pediatric urologist and in general will become more of a logistical burden for you.

Circumcision is covered by many but not all insurances. It is not part of your maternity care coverage. You will need to add your son to your insurance for us to file a claim. Please let us know your son's new policy number right away.

26. Permanent Birth Control

Permanent birth control (sterilization) is available for both women and men. Sterilization makes a person unable to create a pregnancy for the rest of his or her life. This is a major decision and therefore you should make sure that sterilization is the very best plan for you and your family. Do NOT have sterilization surgery unless you are 100% sure that you do not want to become pregnant again, EVER. Women who regret their sterilization decision are typically those who are younger than 30, feel pressured to have the surgery, or have other concerning medical conditions.

The permanent sterilization method for a man is called a **vasectomy**. This surgical procedure is done under local anesthesia and performed by a family physician or urologist. This surgery does not affect the man's future sexual performance. Vasectomy is easy to perform and carries a low risk of complications.

Permanent sterilization for women is **bilateral tubal ligation** – commonly called a "tubal" — traditionally by cutting, tying, banding, or coagulating (burning) the two fallopian tubes. Our contemporary practice is to actually remove the tubes entirely (bilateral salpingectomy) since fallopian tubes can contribute to cancer of the ovary. The man's sperm and the woman's egg meet in the fallopian tube. After tubal sterilization the tubes are surgically blocked preventing the sperm from reaching the egg for fertilization. Removing the tubes does not affect menstrual cycles or hormones.

Tubal sterilization can be done during childbirth hospitalization. If a woman delivers by cesarean section the procedure can be done during that surgery without additional incisions, and it doesn't to recovery much. If you have a vaginal delivery however, then your procedure is done in the next 24-48 hours through a small incision below the umbilicus (belly button). As a 'non-scheduled' procedure, this surgery requires considerable coordination with the operating room department, anesthesiologist, your obstetrician, your pediatrician, and the nursery. Sometimes your medical conditions or hospital logistics become barriers and the procedure cannot be done during your hospitalization.

If not completed at the time of childbirth hospitalization, tubal sterilization can be done by using a laparoscope (small camera) under general anesthesia. The procedure requires two small incisions, one below the naval and one just above the pubic hairline. The tubes are removed entirely. Discussion and arrangements for this procedure are done at your postpartum Arbor office visit.

Complications following a vasectomy or tubal sterilization are uncommon, but as for all surgeries include bleeding, infection, damage to other organs, and the risks of anesthesia. There will also be some pain but it can be well managed with oral pain medications.

27. Postpartum Instructions – Recovering at Home

Congratulations! Now the hard part's over, right? Let the enjoyment of your expanded family begin! Your discharge paperwork from the hospital will give you some basic guidance from Arbor ObGyn.

Within a few days we will send a letter to your home (and/or to your web portal) for a postpartum appointment with the delivering doctor five or six weeks after childbirth. If you don't like the specific appointment day or time, just call to reschedule. We figure most new moms are generally available and it's one less thing you need to arrange. Please bring the baby with you if possible – our staff loves to see the product of your hard work!

At your appointment we will complete a physical exam, screen for postpartum depression, and discuss contraceptive options. We'll also review the pregnancy, follow-up on any unresolved medical issues, and strategize for optimal care in future pregnancies.

After this appointment we prefer to see you again around 8-12 months later for your regular wellness exam. This is where we address any lingering concerns, update your pap test if necessary, and review family planning. If you already have a gynecologist (who may have referred you to Arbor for the pregnancy) go ahead and schedule this appointment with him/her. If you don't have a doctor we'd love to continue to be your obstetrics and gynecology providers!

We certainly hope that your pregnancy and labor and delivery have gone smoothly and below we offer some additional suggestions to help you get through the next several weeks as easily as possible.

THE FIRST DAYS AT HOME

DIET

- Please eat normally, but be sure to get plenty of water, fiber and calcium.

- If you are breastfeeding, you should drink a glass of water or milk each time you feed the baby, otherwise you may get dehydrated and decrease your milk supply.

- You should have a bowel movement at least once every 3 days. If you become constipated, you may drink prune juice, take a stool softener or a mild laxative.

ACTIVITY

- You may resume most of your usual activities once you feel up to them. If you tire during an activity, stop to rest.

- You may drive when you can comfortably press on a brake pedal and are no longer taking narcotics for pain - approximately one week following a vaginal delivery and 7-14 days following a c/section.

- No heavy lifting more than 35 lbs. for at least six weeks after a cesarean section. (But picking up and hugging older children is always okay!)

- You can walk as far as you want and can also walk up and down steps—even if you had a C-Section.

- Showers are permitted, but if you had a C-Section please do not soak your incision in water. This includes deep tub baths, hot tubs, Jacuzzis and swimming. You may let warm soapy water run over the incision; do not apply powder or lotions over the incision.

-You should put nothing in the vagina until after your postpartum visit—no tampons, no sex. Remember, your vaginal bleeding will gradually decrease, but may last 6-8 weeks. It will change from bright red, to brown, to a yellowish color.

MUST CALL SITUATIONS

If you are experiencing any of the following problems, we would like you to contact our office immediately:

- Red or swollen incision.
- Temperature is greater than 101.0 F (38.3 C) degrees.
- Heavy bleeding that involves changing 1 sanitary pad every hour for 4 hours in a row.
- Pain or burning with urination.
- If either leg becomes warm, red, painful and/or swollen unexpectedly.
- Severe, persistent abdominal pain.
- Persistent nausea and/or vomiting.
- Elevated blood pressure or severe headache (signs of pre-Eclampsia).
- Pain/burning/difficulty urinating.
- Breast mastitis symptoms: Severe redness and pain on one side, a fever, and body/muscle aches.

REPORT ISSUES TO:

- For a life-threatening emergency, call 911.

- Our main office number is 919-781-9555. Please call us during regular Arbor ObGyn business hours for non-urgent issues: Mondays - Fridays: 8:00am - 4:30pm.

- A physician is always available by phone to assist our patients with urgent medical needs. If you need to speak with a physician after-hours, please call our main office number 919-781-9555 and follow the telephone prompts.

REST!

Nothing starts the day better than getting a good night's rest. And nothing keeps you up more than a newborn. Be a little selfish and try to rest when the baby does. **Let others help!** Remember that they'll get to sleep while you're up with the new arrival.

Care of Stitches

If you had an episiotomy or vaginal laceration repair these stitches will dissolve on their own and need little additional care. Keep the area as clean as possible. Warm sitz baths or tub soaks two to three times a day will ease some of the soreness. Use the peri-bottle to rinse off the outer vagina as needed during urination so that there is less urethral and perineal stinging. Sometimes the breakdown of the suture material can give an off-putting odor. If you have a fever or vaginal pus please call the office for an exam appointment.

Cesarean section stitches will likewise dissolve over time. The incision should be kept dry and clean. You may shower or tub bathe after a C-Section. Just pat the incision dry afterward. Only use soap and water on a washcloth gently rubbing *side to side*. No dressing or bandage is necessary. If you have tape strips on the incision remove them one week after surgery, or the incision will get grungy and smelly. Just peel them off; don't be scared! If Dermabond skin glue was used, let it flake off on its own over the first two weeks.

Women with C-Sections should avoid lifting more than 35 pounds for the first six weeks. Limit other abdominal motions or activities that put strain on the abdomen. Consider purchasing an abdominal binder-wrap for extra support. Expect some numbness at the incision line. Also, much of the pain persists approximately one inch above the incision particularly near the corners. This discomfort will be relieved by the time of your postpartum visit.

Bleeding

Vaginal bleeding after your delivery will vary day to day but will end for the most part by three to four weeks postpartum. Spotting can last for eight weeks depending on your activity level. Commonly, some women can expect a single episode of heavy bleeding 7 to 10 days after delivery – from the remnants of the placental attachment. Especially with breastfeeding, however, intermittent and unpredictable bleeding can occur though this will usually not be very heavy or prolonged. If you are breastfeeding regular periods may not begin again until after weaning.

CONSTIPATION

This is a common problem in the postpartum period and should not be ignored. Breastfeeding, narcotic medications, lack of exercise, and episiotomy pain can all make constipation worse. Drink lots of fluids, eat fruits and bran cereals, and if needed use over-the-counter stool softeners containing docusate (such as Colace or Surfak). If a stimulant laxative is needed try a mild one such as Citrucel, MiraLAX, or Milk of Magnesia.

EXERCISE

Begin exercise again gradually but deliberately after delivery; pregnancy and childbirth have probably taken more out of you than you think. You may begin walking and participating in light exercise as soon as you feel comfortable doing so. Sit-ups and targeted abdominal exercises should be deferred until after your post-partum appointment in C-Section patients, but then they are encouraged.

If you do too much activity too soon you may notice increased pain and bleeding. This will resolve with lessening of your activity.

BREASTFEEDING & MASTITIS

If you are breastfeeding remember to drink lots of fluids to replace what is being used for making breast milk. The quantity of your milk may decrease if you are especially tired or dehydrated. Take your prenatal vitamins and DHA while you are nursing, and eat a well-balanced diet including plenty of calcium and protein.

If you are not planning to breastfeed you should wear a very supportive bra day and night for at least the first week or until breast swelling has decreased. Ice packs can be helpful if painful engorgement occurs. Do not do anything to stimulate the breasts such as expressing or pumping milk or even allowing prolonged contact with a hot shower.

Mastitis is an infection of the breast tissue that results in breast pain, swelling, warmth and redness of the breast. The bacteria come from the baby's mouth, so it is okay to continue breastfeeding. If you have mastitis you might also experience fever and chills. Mastitis most commonly affects women who are breast-feeding (lactation mastitis), although sometimes this condition can occur in women who aren't breast-feeding.

In most cases, lactation mastitis occurs within the first three months after giving birth but it can happen later as well. The condition can leave you feeling exhausted and run-down making it difficult to care for your baby. Sometimes mastitis leads a mother to wean her baby before she intends to, but you can continue breast-feeding while you have mastitis.

With mastitis, signs and symptoms can appear suddenly and may include:

- Breast tenderness or warmth to the touch
- Generally feeling ill (malaise) and chills
- Swelling of the breast
- Pain or a burning sensation continuously or while breast-feeding
- Skin redness, often in a wedge-shaped pattern
- Fever of 101 F (38.3 C) or greater

Lactation mastitis tends to affect only one breast — not both breasts. In most cases you will feel ill with flu-like symptoms for several hours before you recognize that there's a sore red area on one of your breasts. As soon as you recognize this combination of signs and symptoms, it's time to contact Arbor ObGyn. We would like to see you for a breast exam to ensure there are no abscesses, and/or prescribe antibiotics. Visit the **arbor-obgyn.com Obstetrics-Mastitis page** for helpful information.

★ More Information

arbor-obgyn.com/mastitis-breast-infection/ … *Mastitis information from Arbor: diagnosis, prevention, tips & tricks, treatment options.*

Also, if you are concerned about medications not prescribed by your obstetrician while breastfeeding, please call your Pediatrician or Lactation Consultant for their guidance.

DRIVING

Our threshold regarding resumption of driving is: you are completely ready to drive well. This is less likely if your stitches are still uncomfortable, if you are requiring pain medication, or if you are exhausted. Pain could cause you to hesitate to switch from the accelerator to the brakes. Therefore, wait until it is totally comfortable to ride -- before actually driving. This may be up to several weeks. Remember, we are concerned not only about you and your new baby's safety but also everyone else on the road. Check with your auto insurance company regarding specific restrictions.

CONTRACEPTION

You should wait until after your postpartum Arbor office visit and exam to resume sexual intercourse. At that time long-term plans for contraception can be made with your doctor. Breastfeeding is usually not a reliable method for contraception. We will review your options at your postpartum visit.

Estrogens can diminish breast milk supply in 10-15% of women. If breastfeeding you may consider a non-estrogenic option. These include:

- progestin only pills, also known as the "mini-pill" (norethindrone, Slynd)
- progestin IUD (Mirena)
- progestin subdermal insert (Nexplanon)
- non-hormonal copper IUD (Paragard)
- injectable progestin (Depo-Provera)
- barrier methods (condom, diaphragm)
- natural family planning / calendar methods

PAIN RELIEF

Generally, Motrin (ibuprofen) is the most effective for cramping pain. Doses up to 800 milligrams three times a day (four of the over-the-counter 200 milligram-strength tablets) may be taken if needed, although you should find that you need less over the first week. Regular and Extra-strength Tylenol (or equivalent acetaminophen) may be used per the package instructions.

If you've had a C-section you will be sent home with a prescription for oxycodone tablets. Use these to supplement the ibuprofen and acetaminophen if you're not finding adequate relief. You should let us know if these suggestions are not diminishing most of the pain.

PREECLAMPSIA

Pregnancy Induced Hypertension (PIH) and Preeclampsia are two of the most common pregnancy conditions, and frequently reasons to be induced. Although delivery is thought to be the 'cure', some women can develop symptoms weeks after delivery. Please notify us right away if you have high blood pressure, chest pain, difficulty breathing, debilitating headaches, or severe abdominal pain.

POSTPARTUM BLUES AND DEPRESSION

Some new mothers feel especially overwhelmed by their new duties. These feelings can be exacerbated by lack of sleep, hormonal changes, and even by well-meaning comments of others. Postpartum "blues" are very common. These feelings may become severe and outside help may be necessary to get things back on track. Thirty percent of women experience a perinatal mood disorder – you are not alone! Do not hesitate to contact us if you think you need help, 919-781-9555.

If you do have a perinatal mood disorder (PMD) we can offer counseling and medication through our office. There are many community services and clinicians who specialize in PMD and we would recommend consultation there as well. If you're just beginning to explore PMD go to the weblinks below for Moms Supporting Moms community group and the UNC Perinatal Mood Disorders Clinic.

★ More Information

safechildnc.org/moms-supporting-moms/ … *Postpartum Education & Support groups. Welcome Baby program, and Moms Supporting Moms program. Very local, very real.*

www.med.unc.edu/psych/wmd/mood-disorders/perinatal … *UNC Department of Psychiatry Center for Women's Mood Disorders. A very well-respected program able to offer multidimensional support including individual and group counseling, and prescription medications.*

forms.hellolunajoy.com/ob-gyn/arbor … *LunaJoy (*hellolunajoy.com*) is one of our preferred postpartum depression/anxiety service provider. They are exclusively web-based. Completing the assessment link on our customized web-form will allow you to have rapid consultation with a postpartum mental health specialist*

Pregnancy Paperwork

Please send employment forms that need our signature to the Arbor Office, with Attention to Billing. This includes FMLA, disability claims, breast pump authorizations, and return to work notices. Make sure that you have completed all your required information on the forms. We will process your forms as fast as possible.

In Conclusion

Once again, congratulations! Parenthood is a challenge but a uniquely rewarding one. With a good helping of common sense and the above suggestions things should go well. In conclusion, have fun, get plenty of rest and take lots of pictures!

Congratulations !!

28. Great Organizations & Resources

www.acog.org/womens-health

American College of Obstetricians & Gynecologists (ACOG) – Start Here!

** The Patient Page for ACOG. Dozens of FAQ sheets are available, and categorized into Contraception, Especially for Teens, Gynecologic Problems, Labor/Delivery/Postpartum, Pregnancy, Special Procedures, and Women's Health. A great place to start exploring!

www.womenshealth.gov/pregnancy/index.html

U.S. Dept. of Health and Human Services, Office of Women's Health

** Topics include Preconception Health, Stages of Pregnancy, getting ready at home for baby, labor, and newborn care. Check out the Mom-to-Be Tools, which have print-and go guides, checklists, and more.

www.cdc.gov/pregnancy

Centers for Disease Control and Prevention (CDC)

** Sections include strategies for optimal health before pregnancy, during pregnancy, and after the baby arrive. These are comprehensive resources written for consumers like you. Many of the specific topics will be cited throughout this booklet. Zika Virus now included!

www.fda.gov/consumers/womens-health-topics/pregnancy

U.S. Food and Drug Administration (FDA)

** Consumer website on Pregnancy related topics: Medicines, Food Safety, Breast Pumps, and more.

americanpregnancy.org

American Pregnancy Association

** A non-profit organization promoting healthy pregnancy, breastfeeding, newborn care, and beyond. The website has a nice week-by-week newsletter option. Pregnancy wellness, common complaints, and postpartum considerations are well organized.

mothertobaby.org/fact-sheets-parent/

Organization of Teratology Information Specialists (OTIS).

** Consumer website from OTIS. Medications and Birth Defects. This link has a fairly comprehensive list of FAQ sheets for prescription and non-prescription medications used in pregnancy and breastfeeding. Also includes herbal products, infections, and other common home and occupational exposures.

healthychildren.org

Parenting website of the American Academy of Pediatrics

** Contains sections on prenatal choices, typical activities of newborns and children, immunization schedules, and symptoms of ill children.

www.marchofdimes.org/pregnancy/pregnancy.aspx#

March of Dimes

** List of articles and questions you may have about pregnancy, newborn baby care, and grief.

29. Your Notes

MY PREGNANCY WEIGHT CHART

Date	Weeks	Weight	Goals
	Before Pregnancy		

MY APPOINTMENTS SCHEDULE

Date	Provider	Notes

Date	Provider	Notes

Questions and Notes _____

Questions and Notes _____

Questions and Notes _____

Questions and Notes _____

Questions and Notes _____

30. Contact Information

Please use our web patient portal as much as possible! You can submit refill requests, non-urgent clinical questions, billing/insurance questions, and update your health and contact information.

If you need medical advice during office hours, please call the number associated with your last name. Plan to leave a message – most calls are returned within an hour. Use the Arbor main office number for other calls, and our receptionist will direct you to the right staff member.

All calls with office administrative and clinical staff are held in secure and private areas of our office, so that we can discuss your medical concerns without other patients hearing you. Our front desk staff does not answer calls directly.

Office telephone hours are 8:00 a.m. to 4:30 p.m., Monday – Friday.

After-hours calls are for pregnancy and surgical emergencies only – messages will be returned by the Arbor/Wilkerson doctor on call.

Main Office Number	919-781-9555
Direct Nurse last names beginning with A-L	919-232-6886
Direct Nurse last names beginning with M-Z	919-232-6885
C/Sections, Surgery Scheduling	919-232-6883
Billing/Insurance	919-232-6881
Fax, Medical Records	919-781-1070
Fax, Billing/Insurance	919-235-4514

Mailing Address:
Arbor Obstetrics & Gynecology
2615 Lake Drive
Suite 201
Raleigh, NC 27607

***If you cannot reach us after hours (i.e. our phone system is broken), you may dial Rex Hospital Women's Center directly, 919-784-3271, and they will find a way to track down the doctor on call. The Women's Center does not provide a nurse-advice call line, however. If for some reason you are unable to reach anyone by phone and you feel you are in labor, please go directly to the Rex Women's Center. Call 911 for any true emergency.

Best Women's Health

Best Ob-Gyn

Best Ob-Gyn

Women's Healthcare

Best Ob-Gyn

arbor
OBGYN