Thank you for choosing us for your prenatal care and delivery. Your health and safety, and that of your baby's, is our highest concern. We are excited to be a part of this exciting life experience!

CONTACT INFO

Timothy Leach MD, FACOG, MSCP
110 Tampico Ste 210
Walnut Creek Ca 94598
Phone 925-935-6952
Fax 925-935-1396

Our website www.leachobgyn.com has this manual and more information about list of providers and office support staff

I ONLY deliver babies at John Muir Hospital in Walnut Creek.

John Muir Labor & Delivery

1601 Ygnacio Valley Rd 3rd floor
Walnut Creek Ca, 94598 L&D Phone: 925-947-5330

John Muir Walnut Creek does NOT offer in person tours at the hospital but now has virtual tour of John Muir Walnut Creek Labor and Delivery on line available by clicking on the hyperlink. John Muir does offer classes including childbirth, breastfeeding, and newborn care. Register for the hospital with your John Muir My chart app

John Muir Tour (make sure to watch to the end) is a video of the entire Walnut Creek Campus.

Park by the Emergency Room but go in the Labor and Delivery Entrance between 7 am and 7 pm. After 7 pm go to the Emergency Room entrance.

Instructions for C/Section

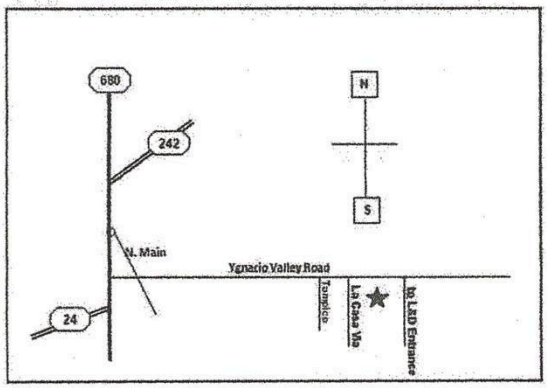
- Pre-register with Admitting prior to 15 weeks or as soon as possible prior to delivery or planned admission.
- Nothing by mouth at least 8 hours prior to scheduled surgery time.
- Call 2 hours prior scheduled surgery time to confirm there are no delays.

Instructions for Induction of Labor

- Pre-register with Admitting prior to 15 weeks or as soon as possible prior to delivery or planned admission.
- Eat a light meal prior to coming to hospital
- Call 2 hours prior to scheduled arrival time to confirm there are no delays

Instructions for NST

- Pre-register with Admitting prior to 15 weeks or as soon as possible prior to delivery or planned admission.
- Call 1 hour prior to scheduled arrival time to confirm there are no delays
- Eat a light meal or snack prior to coming to hospital

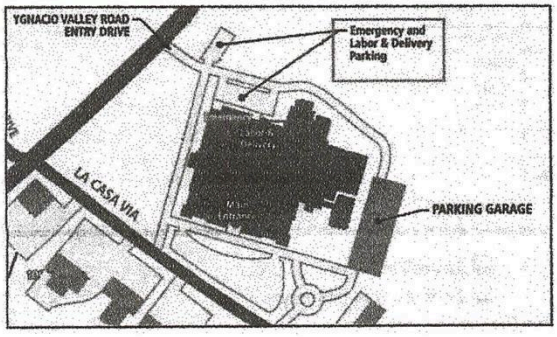


From 680 South, take N. Main exit
Turn left on Ygnacio Valley Road

From 680 North, take Ygnacio Valley Road exit
Turn right on Ygnacio Valley Road

From 24, take Ygnacio Valley Road exit
Turn right on Ygnacio Valley Road

From Ygnacio Valley Road
Turn right AFTER La Casa Via
towards the Emergency/L&D



Go to the **L&D entrance** and take the elevator to the 3rd floor

Outside the L&D doors, call ext. 35330 and identify yourself for entry.

Go straight towards L&D and check in with the Unit Secretary

TABLE OF CONTENTS

- Labor signs
- Administrative questions: disability, breast pumps
- Postpartum after vaginal and cesarean deliveries
- Nipple pain
- Postpartum Baby Blues and depression
- Reasons to call the office 24/7 postpartum

If I need to talk to a doctor...

A doctor or certified midwife is on call 24-hrs a day, 365 days a year. You do not need to call an anonymous advice nurse or ask Dr. Google. Urgent or emergent questions need answers. Please call our office main phone number 925-935-6952 or ask Alexa or Siri to call Dr. Timothy Leach OB/GYN and a call will be made to the office from an internet phone number. After hours you will get a digital attendant that allows you to leave a voice message and type in your call back number for a provider to return your call within 10-15 minutes. During business hours someone from our office will get back to you. If we cannot answer right away, please leave a message and we'll get back to you during business hours. Do not email pregnancy questions other than for authorizations or scheduling appointments.

Dr Leach delivers ~98% of his patients but will sometimes be out of town in which case one of his colleagues in Dr Wells or Dr's Hanna, Hughes, Katz office will attend the birth of your baby.

If you have an emergency and cannot get in touch with a doctor within a reasonable time, please call John Muir Labor & Delivery at 925-947-5330.

For non-urgent issues you may also email via the John Muir My Chart. Please contact the office if you have questions about setting up your account and we can provide instructions to help you activate your John Muir My Chart. You should never send email regarding medical questions, please call the office 24/7 and speak with on call colleague.

Prenatal Care Basics

Pregnancy is not usually verified until after missing your period. Most home urine tests are reliably positive 4-5 weeks after your last period. If you are uncertain of the result, call the office for additional testing.

Your visits

Your (first office) pregnancy confirmation visit will be at 6-8 weeks after the first day of your last menstrual period to confirm your pregnancy is in the uterus and your baby has a heartbeat.

At 6 weeks gestation we can see a fetus the size of a coffee bean but often without heartbeat

At 7 weeks gestation we can see a fetus the size of edamame bean with/w/o heartbeat

At 8 weeks gestation we can see a fetus the size of an olive with a heartbeat always

It is preferred to have your initial pregnancy confirmation visit close to or after 7 weeks.

Your prenatal visits will be every 4 weeks until about 28 weeks, every 2 weeks until 36 weeks and weekly after 36 weeks until delivery.

It is not safe in my opinion to continue a pregnancy after 41 weeks, so induction of labor is strongly recommended at that time.

You will have a postpartum visit about 6 weeks after your delivery. If you had a cesarean delivery (C-section) you will also have a visit 10-14 days after your surgery.

Your Initial Labs

Labs are drawn outside of our office, most often at LabCorp or Quest depending on your insurance. Initial pregnancy labs are ordered after your pregnancy confirmation visit (when we first see a baby with heart tones) and include tests for blood type, HIV, Hep B, Hep C, Syphilis, Rubella, complete blood count, ferritin, and urine analysis with culture.

If you had a history of gestational diabetes in a previous pregnancy or have history of PCOS, an early screen for gestational diabetes is offered.

If you had a history of gestational hypertension or pre- eclampsia, a 24-hour urine collection along with a comprehensive metabolic screen is added to your initial blood work.

Carrier Screening: “Something you may do once in your life”

At your pregnancy confirmation visit, we will review carrier screening tests for cystic fibrosis, spinal muscular atrophy and fragile X if this has not been done previously. For more information go to HORIZON BY NATERA. This test may be covered by your insurance but a greater cost than simply paying with a credit card. You can call 1-844-778-4700 for cost estimates. If you screen positive, your partner will need to be tested and will be charged the same amount. Self-pay typically costs about $249.00.

natera™ | Horizon™ Advanced carrier screening

Why use Horizon carrier screening?

Horizon uses the latest technologies, including next-generation sequencing, to see if you are a carrier for up to 274 genetic conditions.

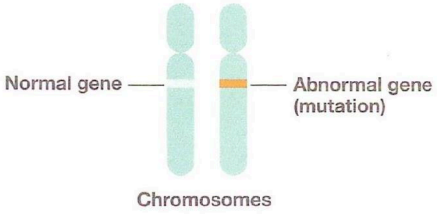
What does Horizon screen for?

Horizon screens for up to 274 autosomal recessive or X-linked genetic conditions, including commonly screened conditions such as cystic fibrosis, spinal muscular atrophy, and fragile X syndrome. Your health care provider will discuss your options and can help you decide the right screening option for you.

What does it mean to be a carrier?

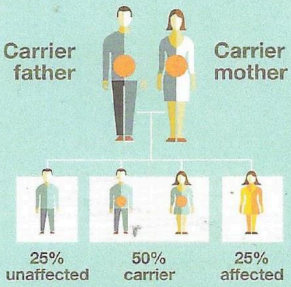
A carrier of a genetic condition has a change (or "mutation") in one gene copy of a pair of genes.

- Most people are carriers of four to six genetic conditions.
- Most carriers are healthy because the other copy of the gene works normally.
- Carriers run the risk of having a child with a genetic condition.



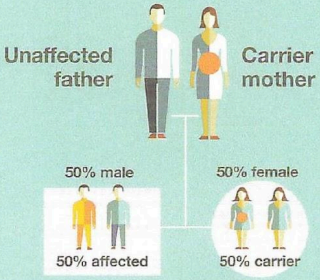
How are genetic conditions passed down from carrier parents to children?

Autosomal recessive inheritance



In cases of autosomal recessive inheritance, carrier couples have a 25% chance with each pregnancy of having an affected child.

X-linked inheritance



In cases of X-linked conditions, a carrier mother has a 50% chance with each pregnancy of having an affected son or carrier daughter.

Disorder	Cystic Fibrosis (CF)	Spinal Muscular Atrophy (SMA)	Fragile X Syndrome (FXS)*
Symptoms	CF is the most common fatal genetic disorder in North America. It causes the body to produce very thick mucus that can damage internal organs. It clogs the lungs—leading to life-threatening infections—and can cause digestive problems, poor growth and infertility. Symptoms range from mild to severe, but do not affect intelligence. On average, CF patients live into their late thirties. About 1 in every 3,500 babies born in the US has the disorder.	SMA is the most common inherited cause of infant death. It affects a person's ability to control their muscles, including those involved in breathing, eating, crawling and walking. SMA has different levels of severity, none of which affect intelligence. However, the most common form of the disorder causes death by age two. About 1 in every 6,000 to one in every 10,000 babies born in the US has SMA.	FXS is the most common inherited cause of intellectual disability. Symptoms cover a wide range, from mild to very severe. About one-third of all people with FXS also have autism. Individuals with the disorder may also have behavioral issues such as hyperactivity, social anxiety and aggression. Females usually have milder symptoms than males. Approximately 1 in every 3,600 boys and 1 in every 6,000 girls is born with FXS.
Inheritance	When both parents are carriers, there is a 1 in 4 (25%) chance the child will be affected.	When both parents are carriers, there is a 1 in 4 (25%) chance the child will be affected.	When only the mother is a carrier, there is *up to* a 1 in 2 (50%) chance the child will be affected.
Carrier Frequency	1 in 24 Ashkenazi Jews 1 in 25 Caucasians 1 in 58 Hispanics 1 in 61 African-Americans 1 in 94 Asians	1 in 35 Caucasians 1 in 41 Ashkenazi Jews 1 in 53 Asians 1 in 66 African-Americans 1 in 117 Hispanics 1 in 50 Other or Mixed Ethnicity	1 in 259 females across all ethnic groups

*Xpansion Interpreter is an available reflex option for patients with 55 to 90 CGG repeats. Xpansion Interpreter provides additional information about reproductive risk for patients.

Natera Patient Services

natera™

East Bay
Lafayette/Berkeley/Oakland

Natera is committed to supporting you before, during, and after your screen

Education resources

- **Natera Women's Health Patient Education Hub:** natera.com/patient-edu

Genetic information sessions

Natera offers complimentary 15 minute information sessions with our board-certified genetic counselors. These appointments are for informational purposes only and are available whether you have questions prior to taking the test, or if you've had any of Natera's screening tests and have questions regarding your results. Appointments are available in English and Spanish. For an in-depth genetic counseling session, please work with your provider for a local referral.

To schedule an appointment, please visit my.natera.com/services/genetic_information OR text **SESSION** to **484848**. You can also schedule an appointment by calling **844.778.4700.**

Phlebotomy services

Natera has arranged phlebotomy options for you to provide a test sample. To use this service, your physician will provide you with a kit and completed order form to bring to your lab appointment. You have the option of visiting a nearby screening location or having a phlebotomist come to you.

1. **Mobile phlebotomy service:** We can send a phlebotomist to your office or home. They will draw your blood and ship it to Natera's labs for testing. To request an appointment with a traveling phlebotomist, simply text **DRAW** to **484848** OR please visit my.natera.com/services/request_mobile_phlebotomy
2. **Nearby screening locations:** If you would prefer to visit a screening location, you can go online to my.natera.com/services/blood_draw

If you have any questions about our phlebotomy services please call 844.778.4700.

Please remember:

- **Bring your screening kit and completed order form**
- **Call the screening location before visiting to determine if the location accepts walk-ins, or if you need to make an appointment**

MED Lab Services
3190 Old Tunnel Rd. Suite B
Lafayette, CA 94549
M-F 8am-4pm *No appt. necessary*
P: (925) 476-5082

Concentra Urgent Care
2850 7th St., Ste. 100
Berkeley, CA 94710
M-F 8am-3pm
P: (510) 845-5170
Natera account #232051

Wellnessmart
1409 Webster St.
Oakland, CA 94612
M-F 9am-5pm, Sat 10am-4pm
P: (510) 722-2552

WOMEN'S HEALTH

Horizon™	Panorama™	Vistara	Anora™	Spectrum™	Empower™
Advanced carrier screening	Next-generation NIPT	Single-gene NIPT	Miscarriage test (POC)	Preimplantation genetics	Hereditary cancer test

201 Industrial Road, Suite 410 | San Carlos, CA 94070 | www.natera.com | 1-650-249-9090 | Fax 1-650-730-2272

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Genetics 101

A normal human cell contains 46 chromosomes of which 50% are derived from your mom and the other 50% from your father. Chromosomal abnormalities can include absent or additional entire chromosomes, as well as deletions, duplications, and translocations of varying sizes. All women regardless of age are eligible for prenatal screening (estimated risk of having a disorder) and/or diagnostic (saying whether your baby does or does not have a diagnosis) tests if appropriate based on family history or maternal age. We will give you an order to schedule ultrasounds and possible diagnostic tests like amniocentesis to be done at Diablo Valley Perinatal (DVP).

If you are over 35 years old, it is the standard of care to automatically offer you a consultation with a genetic counselor at DVP to learn about the different screening and diagnostic testing options. If you have family history of a known genetic or metabolic disorder or have a relative with significant intellectual disability or autism, genetic counseling at any age is appropriate. I respect your decision to have some, none or all the tests described below. The following information is for your review.

Evaluating pregnancies for fetal abnormalities have been the mainstay of prenatal care since with 1960's. From the introduction of amniocentesis for the detection of fetal chromosomal abnormalities to the initial screenings for Tay-Sac's disease and sickle cell disease among individuals of Eastern European Jewish (Ashkenazi) and African ancestries, respectively, the advancement of prenatal screening modalities has sought to develop highly effective screening protocols to identify women and couples who are at increased risk for detectable fetal abnormalities.

A normal human cell contains 46 chromosomes. Aneuploidy is defined as having extra or missing whole chromosomes, and microdeletions and duplications refer to loss or gain of a small portion of a chromosome and are known as copy number variants. Although the risk of aneuploidy increases with advancing maternal age, most children with trisomy 21 (downs syndrome) are born to younger patients because a larger portion of all children are born to younger patients.

Prenatal testing for chromosomal abnormalities is designed to provide an accurate assessment of a patient's risk of carrying a fetus with a chromosomal disorder. Community Ob/Gyn's have the dual obligations of offering our patients timely aneuploidy screening test that maximizes the chance of detecting an affected fetus and offering the test the minimizes false-positive results. The different tests below can evaluate for structural abnormalities (open neural tube defect and abnormal fluid collections in the head/neck region), whole chromosomal abnormalities (downs

syndrome), and metabolic abnormalities (Tay sacs) but no one test can do it all. It is important that you tell us about any family history of known chromosomal abnormalities, metabolic disorders, and any family members with significant intellectual disabilities so we can help you know if genetic counseling is appropriate as a part of your care.

Screening Versus Diagnostic

Despite the frequent interchange of the 2 words by patients and clinicians alike, understanding the difference between screening and diagnosis is critical to empowering women and couples to make truly informed prenatal care decisions that are right for them and for prenatal information they wish to acquire. Screening is RISK-ADJUSTMENT process through which clinicians can determine whether to offer diagnostic testing to patients. Diagnosis relates to a process that determines the presence or absence of a disease state. Screening results should be communicated as either “positive” or “negative” whereas diagnostic test results are communicated as “normal” or “abnormal.”

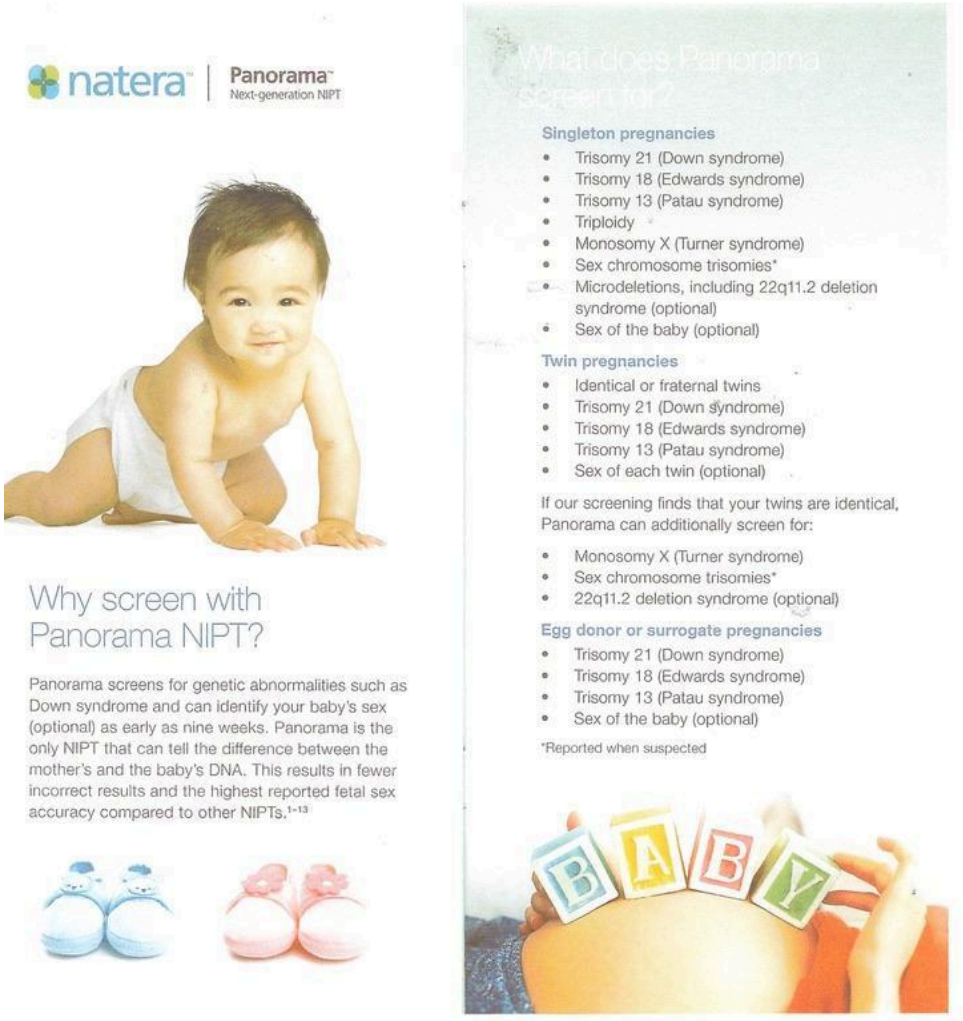
Screening in the First Trimester:

Cell-Free DNA Testing: “Something you are offered in every pregnancy”

Cell-free DNA screens for aneuploidies (chromosomal abnormalities) using the analysis of cell-free fetal DNA fragments in the maternal circulation starting about 9-10 weeks of pregnancy and can be done up until your due date. The fetal component of cell-free DNA is derived from the placenta. Cell-free DNA is the most sensitive and specific screening test for common fetal aneuploidies. Nevertheless, it has the potential for false-positive and false-negative results.

Cell-free DNA testing is not equivalent to diagnostic testing. Cell-free DNA testing is the only laboratory screening test to identify fetal sex and sex chromosome aneuploidies. The most recent meta-analysis evaluating test performance for cell-free DNA screening reports a greater than 99% detection rate for fetal trisomy 21, 98% detection for fetal trisomy 18, and 99% detection rate for fetal trisomy 13 with a combined false-positive detection rate of 0.13%.

Screening for genetic disorders in California has gone to Cell-Free DNA testing protocol as of Sept 2022. First trimester screening with a blood sample must be collected 10 weeks -> term and collected at Natera draw site in Walnut Creek across from John Muir Walnut Creek.



Microdeletion syndromes

Chromosome deletions that span at least 5 megabases (Mb) are usually microscopically visible on chromosome-banded karyotypes. Microdeletions, or submicroscopic deletions, are chromosomal deletions that are too small to be detected by light microscopy using conventional cytogenetic methods. Specialized testing is needed to identify these deletions. Microdeletions are typically 1 to 3 Mb long and involve several contiguous genes. The exact size and location of a microdeletion that causes a syndrome may vary, but a specific "critical region" is consistently involved

DiGeorge syndrome is the most common “micro deletion syndrome”

Also called: 22q11.2 deletion syndrome

OVERVIEW

SYMPTOMS

TREATMENTS

SPECIALISTS

Main Results
A disorder caused by a defect in chromosome 22.

DiGeorge syndrome is a chromosomal disorder that results in poor development of several body systems. Its features vary widely, even among members of the same family.

The syndrome can cause heart defects, poor immune system function, a cleft palate, and low levels of calcium in the blood.

There's no cure, but treatments can usually address critical health concerns.

Rare

Fewer than 200,000 US cases per year

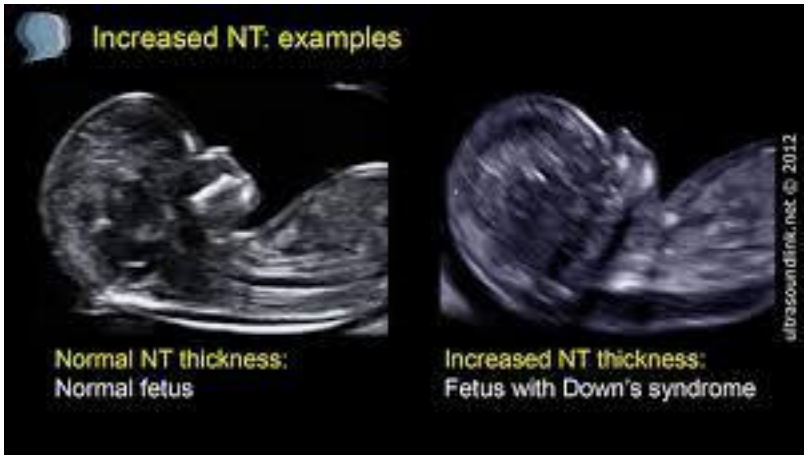
Treatment can help, but this condition can't be cured

Requires a medical diagnosis

Lab tests or imaging always required

Chronic: can last for years or be lifelong

NT (nuchal translucency) is an ultrasound done at a perinatal office like Diablo Valley Perinatology (first floor of our building) that measures the thickness of the nuchal fold between 11-14 weeks. **As of Sept 2022, NT utz is NO longer part of the California screening program which has gone to cell-free DNA testing.** I still recommend that you get the NT utz to make sure your baby is growing and that there are no structural abnormalities with early development of the head/neck and spine.



Screening in the Second Trimester:

A lab slip for AFP (alpha fetal protein) is given to at your first visit once a viable pregnancy is confirmed. This blood test can be drawn by LabCorp or Quest and sent to the state lab 15 □ 21 weeks to evaluate for neural tube defects. Results are not available for blood collected outside this window.

Comprehensive ultrasound: 20-22 weeks at Diablo Valley Perinatal in our office building on the first floor

You will be given an order to have a comprehensive to make sure your baby has a normal anatomical survey. The placenta and cord will be evaluated. If there are any abnormal findings, you will be told about when to get follow up ultrasounds.

The California Prenatal Screening (PNS) Program focuses on detecting birth defects during pregnancy.

The Prenatal Screening Program's Mobile App, (PNS Calculator) is an easy way to find out when to get your prenatal screening tests.

The free app is available at the Apple App store and Google Play store

Diagnostic Prenatal Testing: ACOG

- Chorionic villus sampling (CVS): taking a sample of cells from the placenta between 10-13 weeks
- Amniocentesis (amnio): taking a sample of cells from the amniotic fluid surrounding your baby after 15 weeks

ACOG recommendations (Practice bulletin 226 Oct 2020)

ACOG position statement is that PGT is not uniformly accurate therefore prenatal screening and diagnostic testing should be offered to all patients regardless of previous preimplantation genetic testing.

Aneuploidy screening in patients who have undergone previous preimplantation genetic testing (PGT) as a part of an IVF cycle.

"Screening for Fetal Chromosomal Abnormalities

1. Prenatal genetic screening (serum screening with or without nuchal translucency [NT] ultrasound or cell-free DNA screening) and diagnostic testing (chorionic villus sampling [CVS] or amniocentesis) options should be discussed and offered to all pregnant women regardless of maternal age or risk of chromosomal abnormality. After review and discussion, every patient has the right to pursue or decline prenatal genetic screening and diagnostic testing.

2. Cell-free DNA is the most sensitive and specific screening test for the common fetal aneuploidies. Nevertheless, it has the potential for false-positive and false-negative results. Furthermore, cell-free DNA testing is not equivalent to diagnostic testing.

3. All patients should be offered a second-trimester ultrasound for fetal structural defects, since these may occur without fetal aneuploidy.

4. Patients with positive screening test results for fetal aneuploidy should undergo genetic counseling and a comprehensive ultrasound evaluation with the opportunity for diagnostic testing to confirm results.

5. Patients with negative screen results should be made aware that this substantially decreases their risk of the targeted aneuploidy but does not ensure that the fetus is unaffected.

6. Patients whose cell-free DNA screening results are not interpreted by the laboratory or are uninterpretable (a no-call test results) should be informed that test failure is associated with an increased risk of aneuploidy, receive further genetic counseling and be offered comprehensive ultrasound evaluation and diagnostic testing.

Table 1. Chromosomal Abnormalities in Second-Trimester Pregnancies Based on Maternal Age at Term

	Trisomy 21	Trisomy 18	Trisomy 13	Sex Chromosome Aneuploidy (XXX, XY, XYY, 45, X)	Microarray or Rare Chromosomal Abnormality	All Chromosomal Abnormalities
Age 20	8 per 10,000 1 in 1,250	2 per 10,000 1 in 5,000	1 per 10,000 1 in 10,000	34 per 10,000 1 in 294	37 per 10,000 1 in 270	82 per 10,000 1 in 122
Age 25	10 per 10,000 1 in 1,000	2 per 10,000 1 in 5,000	1 per 10,000 1 in 10,000	34 per 10,000 1 in 294	37 per 10,000 1 in 270	84 per 10,000 1 in 119
Age 30	14 per 10,000 1 in 714	4 per 10,000 1 in 2,500	2 per 10,000 1 in 5,000	34 per 10,000 1 in 294	37 per 10,000 1 in 270	91 per 10,000 1 in 110
Age 35	34 per 10,000 1 in 294	9 per 10,000 1 in 1,111	4 per 10,000 1 in 2,500	35 per 10,000 1 in 285	37 per 10,000 1 in 270	119 per 10,000 1 in 84
Age 40	116 per 10,000 1 in 86	30 per 10,000 1 in 333	14 per 10,000 1 in 714	51 per 10,000 1 in 196	37 per 10,000 1 in 270	248 per 10,000 1 in 40

Data from:

Srebniak MI, Joosten M, Knapen MF, Arends LR, Polak M, van Veen S, et al. Frequency of submicroscopic chromosomal aberrations in pregnancies without increased risk for structural chromosomal aberrations: systematic review and meta-analysis. Ultrasound Obstet Gynecol 2018;51:445–52.

Hook EB. Rates of chromosome abnormalities at different maternal ages. Obstet Gynecol 1981;58:282–5.

Gravholt CH, Juul S, Naeraa RW, Hansen J. Prenatal and postnatal prevalence of Turner's syndrome: a registry study. BMJ 1996;312:16–21.

Snijders RJ, Sebire NJ, Nicolaides KH. Maternal age and gestational age-specific risk for chromosomal defects. Fetal Diagn Ther 1995;10:356–67.

Snijders RJ, Sundberg K, Holzgreve W, Henry G, Nicolaides KH. Maternal age- and gestation-specific risk for trisomy 21. Ultrasound Obstet Gynecol 1999;13:167–70.

Forabosco A, Percesepe A, Santucci S. Incidence of non-age-dependent chromosomal abnormalities: a population-based study on 88965 amniocenteses. Eur J Hum Genet 2009;17:897–903.

Crider KS, Olney RS, Cragan JD. Trisomies 13 and 18: population prevalences, characteristics, and prenatal diagnosis, metropolitan Atlanta, 1994–2003. Am J Med Genet A 2008;146A:820–6.

Irving C, Richmond S, Wren C, Longster C, Embleton ND. Changes in fetal prevalence and outcome for trisomies 13 and 18: a population-based study over 23 years. J Matern Fetal Neonatal Med 2011;24:137–41.

If you want to have **HORIZON carrier screen** done at the same time on the same sample of blood as the **PANORAMA Cell free DNA prenatal screen,** this is possible, but you will need a separated lab slip for the HORIZON carrier screen and this typically will cost you $249.00.

Second Trimester labs at 24-28 weeks

Labs to rule out gestational diabetes, hemogram to evaluate for anemia, ferritin to look for iron deficiency, and repeat testing for syphilis are done at this time. If you are Rh neg, we will order and antibody test and when the results are available, you will be given Rho gam at your next visit.

Third trimester lab at 36 weeks

This is a Q-tip swab of the vagina and perineum for Group B streptococcus (GBS). While this is a part of the normal microbiome of a woman's vagina, GBS bacteria may be harmful to babies who are being delivered vaginally. If you're a carrier for GBS, you will receive intrapartum antibiotics to protect your baby.

Group B *Streptococcus* (GBS or *Streptococcus agalactiae*) is an encapsulated Gram-positive coccus that colonizes the gastrointestinal and genital tracts of 15 to 40 percent of pregnant women. It is a normal part of the microbiome that lives on our bodies. Although GBS colonization is asymptomatic in these women, maternal colonization is a critical determinant of infection in neonates and young infants (less than 90 days of age), in whom GBS is the most common cause of bacterial infection. Vertical (mother-to-infant) transmission primarily occurs when GBS passes from the vagina into the amniotic fluid after onset of labor or rupture of membranes but can also occur with intact membranes and during passage through the birth canal.

In the mid-1980s, randomized and controlled clinical trials demonstrated that intrapartum intravenous administration of Penicillin G or Ampicillin to GBS carriers protected their newborns from developing early-onset disease (ie, GBS infection at zero to six days of age). Based upon this evidence, the Centers for Disease Control and Prevention published updated guidelines for prevention of neonatal GBS disease in 2002 and 2010, and the American College of Obstetricians and Gynecologists (ACOG) has taken on this role since 2019. The key intervention in these guidelines is intrapartum parenteral antibiotic prophylaxis of women whose infants are at risk of developing early-onset GBS infection because a maternal GBS culture was positive in the weeks before delivery or because of maternal characteristics that increase the risk of early-onset GBS disease in their offspring. The risk of transmission in mom's who are GBS positive if not given antibiotics is about 1 in 400 vs those given intrapartum antibiotics to about 1 in 4000.

We will call you for labs that deserve your attention and may need follow up. Normal lab results will be reviewed at your next scheduled visit.
Many of your lab results are visible online if you have a MyJohnMuirHealth account.
If you have any questions about your labs, you can call the office and speak with support staff or ask at your next scheduled visit.

Ultrasounds

You will have ultrasounds at your first visit to our office, typically 7-8 weeks which we call pregnancy confirmation visit. Your first prenatal visit will include an ultrasound to

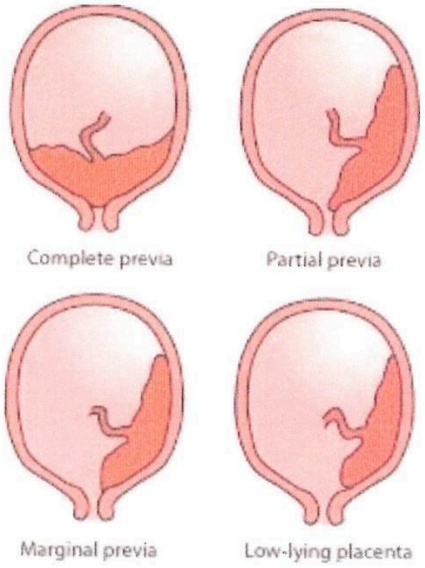
confirm your baby is growing appropriately and has a normal heat rate typically 120-170 bpm.

All women are offered 2 higher level ultrasounds at Diablo Valley Perinatology (DVP) (first floor of our building). The first of which is at 11-14 weeks which is to measure the back of the neck (Nuchal Translucency aka NT screen) for an initial screen for Trisomy 21 (Down's syndrome) and Trisomy 18 (Edwards syndrome) and the second is a comprehensive anatomy scan around 18-20 weeks. This is a detailed anatomy scan and evaluation of the placental location. Sometimes the placenta is close to the cervix. If your placenta is close to your cervix, you should not have any vaginal intercourse as this can lead to bleeding.

Types of Placenta Previa

There are 4 types of placenta previa, classified according to the position of the placenta on the uterine wall.

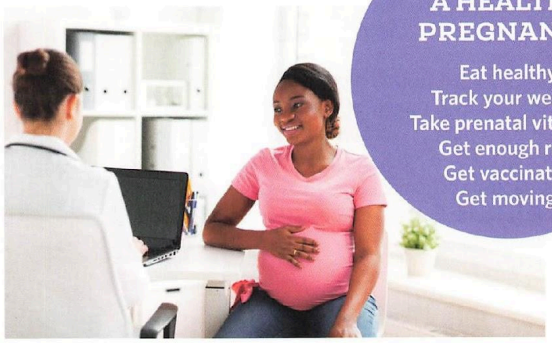
- **Low-lying placenta previa:** The placenta is in the lower part of the uterus but does not reach the internal os of the cervix.
- **Marginal placenta previa:** The edge of the placenta reaches the margin of the internal os of the cervix but does not cover it.
- **Partial placenta previa:** The placenta covers the internal os of the cervix partially.
- **Complete placenta previa:** The placenta lies over the internal os of the cervix, completely covering it.



Adapted from https://gynaeonline.com/placenta_previa.htm

Six Steps to a Healthy Pregnancy

Staying strong and healthy during your pregnancy is the first step toward delivering a healthy baby. If you eat well, have regular prenatal care, and exercise regularly you can help lower the risk of pregnancy complications. Remember, taking good care of your health is also taking good care of your baby's health.



STEPS TO A HEALTHY PREGNANCY

Eat healthy
Track your weight
Take prenatal vitamins
Get enough rest
Get vaccinated
Get moving!

STEP 1 — Eat Healthy

Eating well while you're pregnant is more than just "eating for two." It's also balancing nutrients and calories to maintain a healthy body weight and help your baby grow and develop. According to the FDA you'll need about **300 extra daily calories** to maintain a healthy weight during pregnancy.

For a healthy pregnancy, you need the right balance of proteins, carbohydrates and fats, including a wide variety of fruits and vegetables. And don't forget to drink plenty of water to stay hydrated. Visit ***www.ChooseMyPlate.gov*** to see how many servings from each food group you need every day.

ENJOY

Grains

Include grain products as part of your daily diet. Foods such as bread, rice and pasta are considered grains. Choose foods with a low glycemic index like whole wheat pasta and oatmeal, beans, legumes, and 100% stone-ground whole wheat or pumpernickel bread. Foods that are lower in fat and salt are also better options.

Milk and Milk Alternatives

Drink skim, 1% or 2% milk every day and choose low-fat varieties of yogurt and cheese. Milk and milk alternatives are good for your growing baby because they will give you the high-quality protein, calcium and vitamin D you need but with less fat and calories. Drink fortified soy beverages if you do not drink cow's milk.

Meat and Meat Alternatives

Eating meat and meat alternatives each day will also help you and your baby stay healthy. Choose lean meats and meat alternatives such as dried peas, beans, tofu and lentils that are made with little or no added fat or salt. Fish is a healthy source of protein; try to eat it 2 to 3 times each week.

Fruits and Vegetables

Make half your plate fruits and vegetables. Eating colorful fruits and vegetables is important because they provide vitamins and minerals and most are low in calories. Vary your veggies. Try adding fresh, frozen or canned vegetables to salads, sides and main dishes. Choose a variety of colorful vegetables prepared in healthy ways: steamed, sautéed, roasted or raw.

PREVENTING FOOD POISONING

During pregnancy, both you and your baby are at an increased risk of foodborne illnesses (food poisoning), like listeriosis. Listeriosis is an infection caused by eating food contaminated with bacteria. The best way to avoid listeriosis is to eat foods that are completely cooked, clean and pasteurized.

EATING FISH DURING PREGNANCY

Fish is a lean protein with lots of nutritional value. But certain types of fish contain high levels of mercury and should be avoided during pregnancy. Both the FDA and EPA have issued advice regarding eating fish. Some fish are safe to eat 2-3 times a week, others should be eaten only once a week, while the third group should be avoided while you're pregnant. The chart to the right lists some of the most popular fish and which category they fall in. You'll find the full FDA list at ***www.fda.gov/food/consumers/advice-about-eating-fish***

AVOID

- Raw or undercooked fish (sushi)
- Raw, undercooked or processed meat
- Hot dogs and luncheon meat (unless steaming hot)
- Raw eggs
- Refrigerated paté and meat spreads
- Refrigerated smoked seafood
- Unwashed raw fruits or vegetables
- Unpasteurized milk or soft cheese
- Unpasteurized fruit juice

Best Fish
(2-3 servings weekly)

Atlantic mackerel
Black sea bass
Clam
Cod
Flounder
Haddock
Scallop
Shrimp
Sole
Tilapia
Trout
Tuna, canned light
Whitefish
Pacific mackerel
Salmon
Sardine

Good Fish
(1 serving weekly)

Bluefish
Chilean sea bass
Halibut
Mahi Mahi
Striped bass (ocean)
Tilefish (Atlantic Ocean)
Tuna, albacore (white tuna)
Tuna, yellowfin

Bad Fish
(don't eat)

King mackerel
Marlin
Orange roughy
Shark
Swordfish
Tilefish (Gulf of Mexico)
Tuna, bigeye

OMEGA-3 FATTY ACIDS

Recent studies have confirmed the benefits of including omega-3 fats, especially DHA (docosahexaenoic acid). It's hard to get enough omega-3 and DHA from your diet alone. When you're pregnant or breastfeeding, it's recommended that you get at least 300mg of DHA and a total of 650mg of all the omega-3 fatty acids per day. DHA is important for fetal vision and brain development and can also lower the risk of premature birth.

STEP 2 — Track Your Weight

If you were at a normal weight before becoming pregnant, you'll probably gain about 25-30 pounds before your baby is born. Your weight gain includes the baby's weight and other pregnancy-related changes in your body. You'll gain the most weight during the last two trimesters, up to a pound a week.

How much weight you should gain is based on your body mass index (BMI). Ask your doctor or midwife what your BMI number is and how much weight you should gain to have a healthy pregnancy. The best way to manage your weight is also the best way to stay healthy over the course of your pregnancy by:

- Eating a variety of nutritious, healthy foods
- Exercising about 30 minutes a day
- Getting plenty of rest and sleep

HEALTHY PREGNANCY WEIGHT

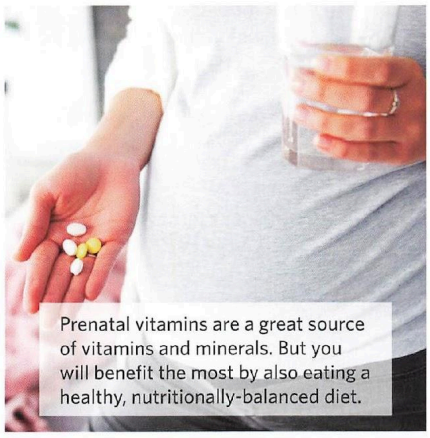
BMI Before Pregnancy	Pregnant—One Baby	Pregnant—Twins
Underweight = <18.5	Gain 28-40 pounds	50-62 pounds
Normal weight = 18.5-24.9	Gain 25-35 pounds	37-54 pounds
Overweight = 25-29.9	Gain 15-25 pounds	31-50 pounds
Obesity = BMI of 30 or greater	Gain 11-20 pounds	25-42 pounds

STEP 3 — Take Prenatal Vitamins

Eating a healthy diet is a great way to take in many of the nutrients, vitamins and minerals you need during pregnancy. But when you're pregnant, you'll need more iron and ***folic acid*** than you would get from just eating the right foods. Your doctor or midwife will probably recommend that you start taking prenatal vitamins for these reasons:

- More iron and folic acid than regular adult vitamins
- Less of certain vitamins that could cause problems for your baby
- Helps prevent anemia and lower the risk of certain abnormalities

If your prenatal vitamins don't contain omega-3 fatty acids, ask your provider if you should also take an omega-3 supplement. Omega-3 fatty acids are important to your baby's brain development. (see previous page)



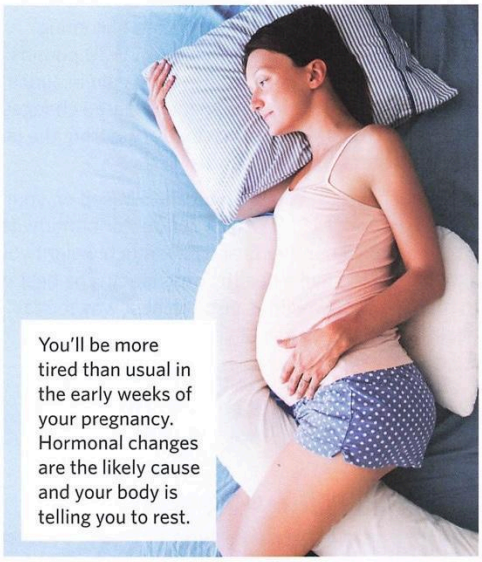
Prenatal vitamins are a great source of vitamins and minerals. But you will benefit the most by also eating a healthy, nutritionally-balanced diet.

STEP 4 — Get Enough Rest

Getting enough sleep is important for your physical and mental health—even when you're not pregnant. The National Sleep Foundation (NSF) recommends getting 7-9 hours of sleep every night. At the start of your pregnancy, it's common to feel more tired so getting enough sleep should be easier.

Later in your pregnancy you may find it harder to sleep because you can't find a comfortable position, or you have to get up several times during the night to empty your bladder. Leg cramps and heartburn can also keep you awake.

Sleeping on your side surrounded by pillows or with a pillow between your legs can be a more comfortable position after 22-24 weeks. Sleeping flat on your back is not comfortable and not recommended. If you can't sleep through the night, take a nap (or several naps) during the day if you can. If you're working, make time for a few 10- to 15-minute rest breaks, spaced evenly through the day.



You'll be more tired than usual in the early weeks of your pregnancy. Hormonal changes are the likely cause and your body is telling you to rest.

Tips for better sleep

- Have a massage or warm bath before bedtime
- Don't drink too many fluids after dinner
- Avoid caffeine—soda, coffee, tea and chocolate
- Turn your thermostat down to 60-67°F
- Read in bed until you feel sleepy
- Try relaxed breathing or visualization

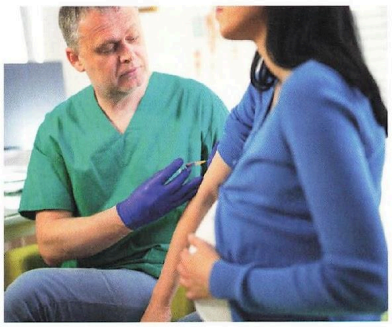
> "Don't take sleep aids without your health care provider's approval. If you're not getting enough sleep, ask your provider for suggestions."

STEP 5 — Get Vaccinated

Vaccines (immunizations) prevent people from catching diseases that can cause serious medical problems. Unless your doctor or midwife tells you differently, the following two vaccines are recommended during pregnancy:

- **Flu vaccine**
- **Tdap vaccine** (tetanus, diphtheria, whooping cough)

Both the flu and Tdap vaccines are considered very safe and can protect both you and your baby during pregnancy. You should not get a vaccine made from live viruses (measles, mumps, and chickenpox) while you're pregnant or within a month of becoming pregnant.



Vaccine Safety

Safe during pregnancy	Not safe during pregnancy
Flu, Tdap, and hepatitis A and B vaccines	Measles, mumps, and chickenpox vaccines

> "Ask your doctor about vaccines required for foreign travel and other reasons."

STEP 6 — Get Moving!

There are many good reasons to be physically active when you're pregnant. It helps with backaches, circulation, insomnia, mood changes, constipation and weight management. Exercise may also lower your risk for pregnancy-related high blood pressure, gestational diabetes, ***cesarean birth*** and depression.

Certain complications during pregnancy might require you to keep a low activity level with little or no exercise. Talk to your health care provider about exercising if you're expecting twins or have high blood pressure, a weak cervix, or any condition affecting your baby's growth and development.

If you were exercising regularly before you became pregnant, you may be able to continue that same workout routine. Be sure to check with your health care provider first. The Center for Disease Control and Prevention (CDC) recommends doing at least 150 minutes (2 ½ hours) of moderate-intensity aerobic exercise every week. You can do this by raising your heart rate and sweating for about 30 minutes a day, most days of the week.

SCAN + PLAY

EXERCISE TIPS

- Start slowly if you haven't been physically active recently
- Drink plenty of water and don't get overheated
- Walk fast enough to carry on a conversation but not get short of breath
- Swimming and stationary cycling are good options during pregnancy
- Riding a bicycle is good early, but you are at greater risk of falling later
- Look for pregnancy-modified classes like water aerobics, pilates or yoga

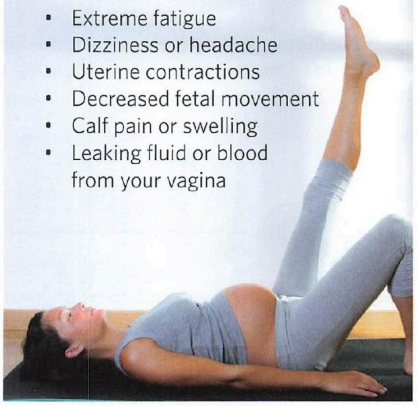
EXERCISES TO AVOID DURING PREGNANCY

- Contact sports like soccer and ice hockey
- Snow skiing, horseback riding and water skiing
- Mountain hiking at high altitude
- Scuba diving, hot yoga and hot pilates

Talk to your health care provider before you run, play racquet sports or do weight training, even if you did them before becoming pregnant.

Call your provider or seek emergency care immediately if you have:

- Shortness of breath
- Chest pain
- Uneven heart rate
- Extreme fatigue
- Dizziness or headache
- Uterine contractions
- Decreased fetal movement
- Calf pain or swelling
- Leaking fluid or blood from your vagina



Easy Exercises

These three stretching and toning exercises don't take any special preparation, space or equipment. Almost anyone can do them anywhere.

SQUATS

This exercise will help your back, and is good practice for properly lifting heavy weights, like your newborn. Always lift heavy objects by keeping your back straight, squatting down and using your leg muscles to push yourself up. There are two types of squat exercises. Try to do both types 3-4 times a day.

Standing squat

Stand with your lower and upper back against a wall. Keep your feet hip-width apart and parallel while pressing your heels flat against the floor. Lower your body slowly down the wall, with your hands against it, until you are in a squatting position. Hold for 3-5 seconds. Slowly raise yourself back up. Repeat 5-10 times.

Squat variation

Hold on to a heavy piece of furniture that will not tip over. Slowly squat down, keeping your feet hip-width apart, your heels flat on the floor, and your back straight. Let your knees spread open. Hold for 3-5 seconds. Slowly raise yourself back up. Repeat 5-10 times.

PELVIC ROCK

Pelvic rocking helps relieve a sore back by stretching your lower back muscles. It's the most common exercise taught in childbirth classes because it's very effective. Doing the pelvic rock during pregnancy can help support your growing baby. Doing it after pregnancy can help tone your abdominal muscles. You can do the pelvic rock lying on your back, standing up, or down on your hands and knees.

Start by doing ten of these 3-4 times a day. Work yourself up to about 40 stretches 3-4 times a day, including once before you go to bed. This helps your baby get into a good position.

Lying down

Lie flat on your back, hands on the floor at your sides. Rock your pelvis up by drawing your belly button (naval) in and slightly raising your tailbone (pelvic area). Return to starting position. This is a small movement. Don't stress your back. If you feel dizzy, try another position.

Standing up

Keep your back straight, tighten your buttocks, bend your knees slightly, and rock your pelvis back and forth. This is a belly dancing move called the hinge. Try putting on some music and slowly walking around while doing this exercise. Your abdomen and bottom should work like a hinge, while the rest of your body stays upright.

Hands and knees

This is like the cat's stretch yoga pose. Get down on your hands and knees with your arms shoulder-width apart and your knees hip-width apart. Pull your buttocks down and slightly arch your back, tilting your pelvis forward. Then push your buttocks out and back, tilting your pelvis back. Keep these movements small to keep your back mostly flat.

KEGEL EXERCISES

Kegel exercises tone the muscles in your pelvic area and improve circulation to the vaginal and rectal areas. Continue to do kegels after you've given birth to help speed healing, improve the muscle tone of your vagina, and help prevent urinary leaks. Your goal is to control and relax three different sets of pelvic muscles, one set at a time.

- **First set.** Contract your muscles like you are holding back the flow of urine, then relax.
- **Second set.** Tighten your muscles like you are holding back a bowel movement, then relax.
- **Third set.** Contract your vaginal muscles, then relax.

It may take some practice to work each of these sets of muscles individually. But keep practicing. Relax and contract each set of muscles separately, contracting them more firmly and longer each time.

Exercises During Pregnancy

Repeat all exercises 4 to 6 times.

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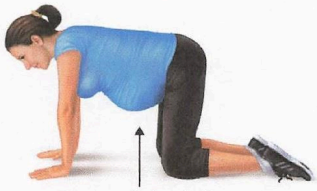
1 4-Point Kneeling

Strengthens and tones the abdominal muscles.



1. Kneel on all fours. Position your hips directly over your knees and position your shoulders directly over your hands. Your back should be straight.
2. Inhale deeply. Then exhale. As you exhale, pull your abdominal muscles in. This is called engaging your abdominal muscles.
3. Do not hold your breath. Keep your back straight.

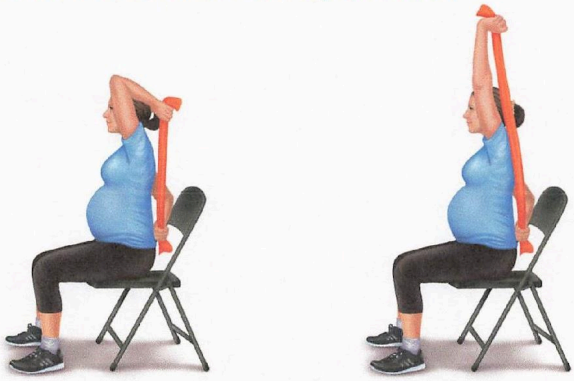
2 Seated Leg Raises

Strengthens abdominal muscles and helps with balance and stability.

1. Sit on a chair, keeping your back in a neutral position. Your feet should be flat on the floor, about as wide as your hips.
2. Engage your abdominal muscles. Keep your arms and tailbone relaxed. Do not hold your breath.
3. Raise your left foot off the ground by extending your knee. At the same time, raise your right arm. Hold for a few seconds.
4. Repeat with your right leg and left arm.

3 Seated Overhead Triceps Extension

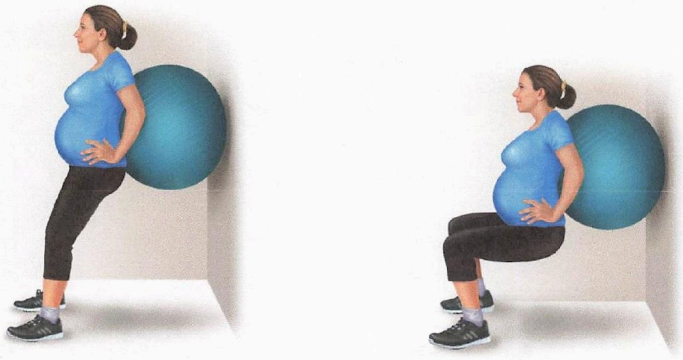
Stretches and strengthens the triceps (upper arm muscle) and chest muscles. Also works abdominal and hip muscles.



1. While seated, keep your back straight and your feet flat on the floor.
2. Hold a resistance band in your right hand and raise your arm, then bend it at the elbow. Reach your left hand behind your back and hold the other end of the resistance band at the back of your waist.
3. With your elbow close to your head, raise and lower your right arm by bending your elbow. Keep the other end of the resistance band anchored behind your waist.
4. Repeat with the opposite side.

4 Ball Wall Squat

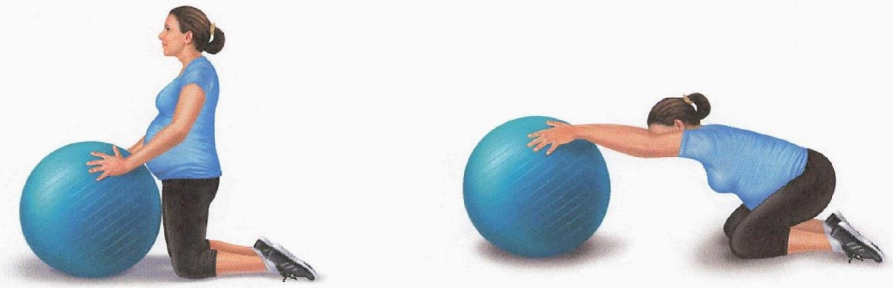
Stretches the muscles of the legs and buttocks. If you have any knee pain, do not do this exercise. If you can, work up to repeating this exercise 10 to 12 times.



1. Place exercise ball against wall. Stand and firmly press the ball into the wall using your lower back.
2. Distribute your weight between both feet. With a slow, controlled movement, squat down while firmly pressing against the ball. Do not let your knees collapse inward. Keep your feet flat. Maintain an open chest and avoid rounding your shoulders. Start with squatting halfway if you cannot squat all the way down.

5 Ball Shoulder Stretch

Stretches the upper back, arms, and shoulders.



1. Kneel on the floor with the exercise ball in front of you. Put your hands on either side of the ball.
2. Move your buttocks back toward your hips while rolling the ball in front of you. Keep your eyes on the floor. Do not arch your neck. Go only as far as comfortable to feel a gentle stretch. Hold for a few seconds.

6 Seated Side Stretch

Eases tension on the sides of your body and stretches your hip muscles.

1. Sit up tall on a chair, keeping your back in a neutral position and your abdominals pulled in. Your feet should be flat on the floor, about as wide as your hips. Put your left hand on your right knee.
2. Raise your right arm and bend it toward your left side until you feel a gentle stretch. Breathe normally. Do not hunch down or round your shoulders. Hold for a few seconds.
3. Repeat with the opposite side.

7 Kneeling Heel Touch

Tones muscles of the upper back, lower back, and abdomen.

1. Kneel on an exercise mat.
2. Using a slow, controlled movement, rotate your torso to the right. Bring your right hand back and touch your left heel. Extend your left arm above your head for balance.
3. Repeat with the opposite side.

8 Standing Back Bend

Helps counteract the forward bending that happens during pregnancy as your uterus grows.

1. Stand with your palms on the back of each hip.
2. Slowly bend back about 15 to 20 degrees. Hold for 20 seconds.

ACOG
The American College of Obstetricians and Gynecologists

409 12th Street SW
Washington, DC 20024-2188

Macronutrients

Protein — The fetal/placental unit utilizes approximately 1000 g of protein during pregnancy, with the majority of this requirement in the last six months. To fulfill this need, the National Academy of Medicine recommends a dietary reference intake for pregnant women of 1.1 g/kg/day protein, which is moderately higher than the 0.8 g/kg/day recommended for nonpregnant adult women.

Use of special protein powders or high-protein beverages should be discouraged. In women who are undernourished, protein supplementation does not improve clinically important pregnancy outcomes. In women who likely have adequate protein intake, there is evidence of possible harm from high-protein supplements.

Carbohydrate — Carbohydrate requirements increase to 175 g/day in pregnancy, up from 130 g/day in nonpregnant women. The focus should be on consuming several servings of whole foods (fruits, vegetables, and whole grains); highly processed carbohydrates should be minimized to help manage weight gain. Fiber intake of 28 g/day is recommended for pregnant women, which, along with adequate fluid intake, may help prevent or reduce constipation.

Fat — The optimal types and quantity of fat intake in pregnancy is unclear. Variations in the quantity and type of fat intake have been associated with variations in birth weight, gestational age and length, and neurodevelopment; however, available data are limited and studies have reported mixed results.

Trans fatty acids (TFA) are transported across the placenta in proportion to maternal intake. TFA may have adverse effects on fetal growth and development by interfering with essential fatty acid metabolism, by direct effects on membrane structures or metabolism, or by replacing maternal intake of the cis essential fatty acids. TFA should be minimized or avoided given their adverse effects on cardiovascular outcomes, possible adverse pregnancy effects, and lack of beneficial effects.

Lipid-based nutrient supplements (LNS) are a good source of macro- and micronutrients and have been used to address nutrient requirements in areas where maternal undernutrition is prevalent. In a systematic review of randomized trials of this intervention in nonemergency settings in low- and middle-income countries (Bangladesh, Burkina Faso, Ghana, Malawi), LNS supplementation had a slight, positive effect on weight at birth and length at birth, and a slight decrease in small-for-gestational-age and newborn stunting compared with iron/folic acid supplementation. No benefit was observed compared with multiple-micronutrient (MMN) supplementation. Data were limited, and the effect sizes were too small to draw clear recommendations for practice.

Micronutrients — Recommendations for daily intake of vitamins and minerals during pregnancy and lactation are shown in the table.

Well-nourished women may not need MMN supplements to satisfy these daily requirements, but in the absence of a careful evaluation by a nutritionist, we believe that it is prudent to recommend them. Individual adjustments should be made based upon the woman's specific needs.

MMN supplement content varies depending on the product used. At a minimum, the daily supplement should contain key vitamins/minerals that are often not met by diet alone, such as:

- Iron – 27 mg
- Calcium – at least 250 mg (elemental calcium 1000 mg/day)
- Folate – at least 0.4 mg (0.6 mg in the second and third trimesters)
- Iodine – 150 mcg
- Vitamin D – 200 to 600 international units (exact amount is controversial)

In addition to these key ingredients, pregnant women need to get adequate amounts of vitamins A, E, C, B vitamins, and zinc.

In the United States, the IOM and the Centers for Disease Control and Prevention (CDC) recommend MMN supplements for pregnant women who do not consume an adequate diet. In high-income countries, such as the United States, groups at increased risk for micronutrient deficiencies include women carrying a multiple gestation, heavy smokers, adolescents, complete vegetarians (vegans), substance abusers, women with history of bariatric surgery, women with gastrointestinal conditions that cause malabsorption (e.g., Crohn disease, bowel resection), and women with lactase deficiency. These groups may benefit from consultation with dietitians who specialize in maternal or women's nutrition. In the United Kingdom, the National Institute for Health and Care Excellence and Royal College of Obstetricians and Gynecologists recommend that women take folic acid each day, from before pregnancy until the end of the first trimester, and vitamin D daily throughout pregnancy and breastfeeding; other supplements are not recommended for routine use.
In a Cochrane review of randomized trials in low- and middle-income countries where micronutrient deficiencies are high, MMN supplements in pregnancy appeared to modestly reduce rates of low birth weight (risk ratio [RR] 0.88, 95% CI 0.85-0.91) and small for gestational age (RR 0.92, 95% CI 0.88-0.97), and possibly preterm birth (RR 0.95, 95% CI 0.90-1.01) compared with iron supplementation with/without folic acid. Maternal anemia was reduced when compared with placebo but not when compared with iron supplementation with/without folic acid. There was no demonstrable benefit for several other maternal and pregnancy outcomes: miscarriage, congenital

anomalies, maternal mortality, perinatal mortality. Most trials of MMNs have been conducted in low-income countries and are not generalizable to high-income countries. Because of a lack of high-quality evidence of the efficacy of MMNs in well-nourished women, national health authorities in the United Kingdom do not recommend them for all women.

Specific micronutrients are discussed in more detail below.

Iron — Iron is necessary for both fetal/placental development and to expand the maternal red cell mass. Prevalence of iron deficiency in pregnant women in the United States is estimated to be 19 percent, ranging from 7 percent in the first trimester to 30 percent in the third trimester. Iron deficiency is present in approximately 50% of women. Iron deficiency anemia is more prevalent among Mexican American and non-Hispanic black pregnant women, and among grand multiparous women.

Iron deficiency is diagnosed by checking a ferritin level which is the storage form of iron in the body. It is possible to be iron deficient and not be anemic.

Iron plays a critical role in maternal health and fetal development independent of its role in red blood cell formation. In the fetus, iron plays an important role in myelination of nerves, dendrite arborization, and synthesis of neurotransmitters.

When maternal iron stores are low and a woman is anemic, this is associated with higher rates of pre-eclampsia, cesarean birth, and postpartum hemorrhage and greater risk for blood transfusion. Postpartum anemia can be correlated with higher rate of postpartum depression. In Sweden between 1987 to 2010 in 532,232 nonadopted children, maternal anemia was associated with a higher risk of autism spectrum disorder (4% vs 3.5%), attention-deficit/hyperactivity disorder 9.3% vs 7.1%) compared to moms who were not anemic.

There are two dietary forms of iron: heme and non-heme. The most bioavailable form is heme iron, which is found in meat, poultry, and fish. Non-heme iron, which comprises 60 percent of iron in animal foods and all of the iron in plant foods, fortified grains, and supplements, is less bioavailable. Absorption of non-heme iron is enhanced by vitamin C-rich foods or muscle tissue (meats, poultry, and seafood) and inhibited by consumption of dairy products and coffee/tea/cocoa.

Experts recommend an increase in iron consumption by approximately 15 mg/day (to approximately 30 mg/day) during pregnancy to prevent iron deficiency anemia; this amount is readily met by most prenatal vitamin formulations and is adequate supplementation for non-anemic women. The CDC recommends that all pregnant women take a 30 mg/day iron supplement by the first prenatal visit. Intermittent iron

supplementation (one to three times per week) appears to be as effective as daily supplementation for preventing anemia at term and is better tolerated.
A 2015 systematic review for the United States Preventive Services Task Force observed that routine iron supplementation had inconsistent effects on a variety of pregnancy outcomes but noted a consistent reduction in the frequency of iron deficiency anemia at term (RR 0.29, 95% CI 0.17-0.49; four trials). Iron is important in fetal brain development, and it has been proposed that screening for and treatment of iron deficiency before anemia develops may benefit neurodevelopmental outcome.

Normal iron stores and iron insufficiency are indicated by ferritin levels 45 to 150 ng/dl and 30 – 44 ng/dl respectively.

Women with iron deficiency anemia (first- or third-trimester hemoglobin [Hb] <11 g/dL or second trimester Hb ≤10.4 g/dL and low serum ferritin [<40 ng/mL]) should receive an additional iron supplement (30 to 120 mg/day) until the anemia is corrected. One option is 65 mg of elemental iron (325 mg) every other day. Iron absorption decreases with increasing dose, thus larger supplementation amounts are best split into several doses during the day. In women who do not tolerate oral iron, iron can be administered intravenously.

HEMAX Bi-Layered Caplets are a good source of extra iron. If you call my office, my staff can help you buy this for less than you can off the internet. An OTC iron supplement that is commonly used is Slow Fe. Taking an iron supplement at a separate time of day then your prenatal vitamin is recommended.

I will order a ferritin level with your initial prenatal panel and repeat testing at 24-26 weeks.

With 100% Bioactive Folate

HEMAX™

NOW AVAILABLE ONLINE

GENTLY & QUICKLY REPLENISH IRON STORES*

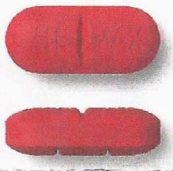
DEAR HEALTHCARE PROVIDER,

To help you provide the very best care for your patients, we are pleased to offer you samples of **HEMAX™**, a high potency iron supplement to improve the nutritional status of iron deficiency.*

Now available online, HEMAX™ is easy to recommend and shipped directly to your patient's home.

PRODUCT HIGHLIGHTS:

- 150mg Carbonyl Iron, plus Vitamin C to enhance iron absorption*
- Contains Vitamin B-12 plus copper and biotin
- Also contains a more bioavailable folate (L-Methylfolate) to help red blood cells develop*
- EZY-DOSE Caplets (option to size the caplet to your preference)
- Slow-release caplets allow for exceptional tolerability*



WHY HEMAX™?

Iron deficiency anemia, or IDA, is a common type of anemia in which the blood lacks an adequate supply of healthy red blood cells. As the name suggests, IDA results from insufficient iron. The body needs iron to make a substance called hemoglobin, which is what enables red blood cells to carry oxygen to tissues and cells. Some of the more commons reasons for low iron are heavy menstrual bleeding, pregnancy (when the need for iron is especially high), as well as chronic gastrointestinal bleeding and malabsorption syndromes. Now you can offer your patients **HEMAX™**, an effective iron deficiency supplement without the negative side effects.*

- Contains well-tolerated carbonyl iron, almost 98% pure iron
- Gradual and gentle absorption of iron to help reduce common side effects of iron supplementation
- Advantageous to patients with enzyme issues, such as an MTHFR mutation
- Trusted by hematologists/oncologists for years, now available online
- New look, same unique and well-trusted ingredients

Rev. 06/22 PRO135-HCPL

Screening for Iron Deficiency and Iron Deficiency Anemia During Pregnancy

Some pregnant individuals have low iron levels, which may lead to iron deficiency anemia.

Iron Levels and Anemia During Pregnancy

Iron is a necessary ingredient for the body to make hemoglobin, a protein that transports oxygen throughout the body. In some people, iron deficiency can lead to low hemoglobin levels, known as iron deficiency anemia. Up to 1 in 5 pregnant individuals in the US have low iron levels, and approximately 5% have iron deficiency anemia. Severe anemia during pregnancy may be linked to poorer maternal and infant health outcomes such as preterm birth, preeclampsia, and low birth weight, although a definite cause-and-effect relationship has not been proven.

Iron deficiency anemia is treated by increasing intake of iron-fortified foods and/or taking iron supplements, either orally (as pills or liquid) or through an intravenous infusion into the bloodstream.

Screening for Iron Deficiency and Anemia

The term *screening* means looking for a condition or illness in individuals who do not have specific symptoms or concerns related to that illness.

Screening for iron deficiency and iron deficiency anemia is typically done with blood tests, which can check for levels of iron, ferritin (a protein that stores iron), and hemoglobin in the blood.

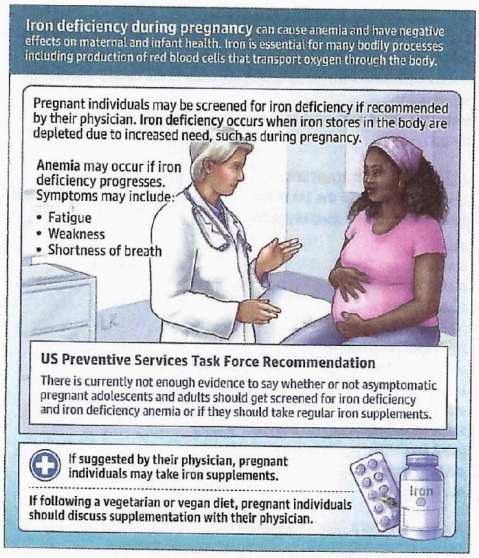
Pros and Cons of Screening for Iron Deficiency and Anemia During Pregnancy

Pros of screening may include detecting and treating iron deficiency and anemia earlier during pregnancy. However, no studies have shown that detecting iron deficiency or iron deficiency anemia helps prevent poor maternal and fetal outcomes linked to iron deficiency anemia. Similarly, studies on treating screening-detected iron deficiency anemia with iron have found inconsistent results regarding benefits for maternal and fetal outcomes.

Cons of screening are mainly related to treatment of iron deficiency and iron deficiency anemia with iron supplements, which may include gastrointestinal side effects such as nausea, vomiting, abdominal pain, and constipation.

Should Pregnant Individuals Be Screened for Iron Deficiency and Anemia?

According to the US Preventive Services Task Force (USPSTF), there is not enough evidence to say whether asymptomatic pregnant individuals should be screened for iron deficiency and iron deficiency anemia. There is also not enough evidence about whether treatment with iron supplements is helpful in prevention of poor maternal and fetal health outcomes linked to iron deficiency anemia.



FOR MORE INFORMATION

US Preventive Services Task Force

To find this and other JAMA Patient Pages, go to the Patient Information collection at *jamanetworkpatientpages.com*.

Author: Jill Jin, MD, MPH

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Calcium and vitamin D — Low calcium and vitamin D levels have been associated with adverse health outcomes in mother and child, but it is unclear whether low levels are the causal factor or a marker of poor health.

●**Calcium** – Fetal skeletal development requires approximately 30 grams of calcium during pregnancy, primarily in the last trimester. This total is a relatively small percentage of total maternal body calcium and is easily mobilized from maternal stores, if necessary. Intestinal absorption and renal retention of calcium increase progressively throughout gestation.

The RDA for elemental calcium is 1000 mg/day in pregnant and lactating women 19 to 50 years of age (1300 mg for girls 14 to 18 years old). The dietary recommendation for calcium is the same for nonpregnant women of the same age. The Dietary Guidelines Scientific Report estimated that 24 percent of United States pregnant women consume less than 800 mg/day. Calcium content of selected foods can be found online from the United States Department of Agriculture (USDA) National Nutrient Database.

For women with low baseline dietary calcium intake (particularly in non-United States populations), high-dose calcium supplementation may reduce the risk of developing a hypertensive disorder of pregnancy. Calcium supplementation does not appear to reduce this risk in healthy, nulliparous women in whom baseline dietary calcium intake is adequate. Although there may be a benefit for preeclampsia prevention in high-risk populations, further study is required since available information is based upon small numbers of women and diverse study populations.

In a 2015 systematic review, calcium supplementation did not reduce the risk of spontaneous preterm birth or low birth weight.

Calcium is not found in prenatal vitamins, rather it is obtained thru dietary sources.

●**Vitamin D** – For routine supplementation, the 2010 IOM report suggests an RDA of 600 international units of vitamin D for all reproductive-age women, including during pregnancy and lactation. In a 2011 ACOG committee opinion, ACOG recommended routine supplementation with the dose in a standard prenatal vitamin until more evidence is available to support a different dose. Most prenatal vitamins contain 400 international units of vitamin D, but some preparations contain as little as 200 or as much as 1000 to 1200 international units.
Many commercial nonprescription products labeled "vitamin D" (multivitamin supplements, fortified milk, and bread) contain ergocalciferol (D2) rather than cholecalciferol (D3). D3 is more readily converted to active forms of vitamin D and

is more effective at increasing serum 25-hydroxyvitamin D. Supplements often specify the type of vitamin D they contain. Most prescription prenatal vitamins contain D3, but some contain D2, and some contain a mixture.

The safe upper limit of vitamin D has not been well studied but was conservatively set at 4000 international units in the most recent 2011 guidelines. Since then, studies have investigated high-dose supplements in pregnant patients. These studies have had relatively small sample sizes and have evaluated potential benefits, such as reduced incidence of autism (up to 5000 international units daily to achieve 25-hydroxyvitamin D levels between 40 and 60 ng/mL), preeclampsia (up to 4000 international units daily to achieve 25-hydroxyvitamin D levels at least 32 ng/mL), and asthma (4400 international units daily to achieve 25-hydroxyvitamin D at least 30 ng/mL). Notably, no adverse events have been observed at these high doses of vitamin D.

The value of routine vitamin D supplementation above the RDA in pregnancy is an active and controversial area of investigation, but there is no clear evidence of a reduction in adverse pregnancy outcomes (e.g., preeclampsia, stillbirth) or several adverse offspring outcomes (e.g., neonatal death, allergy, low bone mineral content). Meta-analyses of randomized trials of vitamin D supplementation during pregnancy have found reduced risks of birth of a small for gestational age infant (RR 0.72, 95% CI 0.52-0.99) and wheeze/asthma in offspring (odds ratio 0.72, 95% CI 0.56-0.92). However, the magnitude of the favorable effect on birth weight varied widely and may be clinically insignificant. Insignificant effects on eczema/atopic dermatitis and food allergies were also noted. There was no increase in risks of fetal or neonatal mortality or congenital abnormality.

The trials differed in several aspects, such as the population studied, outcomes chosen, clinical setting, timing of the intervention, and the dose of vitamin D administered during pregnancy. More rigorous and sufficiently large, randomized trials in women with and without vitamin D deficiency are needed to confirm the effects of vitamin D supplements above the RDA on pregnancy outcomes. Additional data are presented and reviewed separately.

Folic acid

For neural tube defect prevention — The United States Preventive Services Task Force recommends that women take a supplement containing 0.4 to 0.8 mg of folic acid one month before and for the first two to three months after conception to reduce their risk of having a child with a neural tube defect. An RDA of 0.6 mg is recommended thereafter to meet the growth needs of the fetus and placenta. Continuing folic acid supplementation after the first trimester prevents the decline in serum folate and rise in homocysteine concentrations that occur when supplementation is discontinued.

Although most women in the United States take folic acid-containing supplements during pregnancy, the proportion taking them during the first trimester is lower (55 to 60 percent) than that during the second (76 to 78 percent) or third (89 percent) trimesters. Non-supplement users were more likely to be under 25 years old, have less education, and be unmarried compared with supplement users. Thus, women with these characteristics may benefit from emphasis on the importance of taking folic acid preconception and in the first trimester.

Folic acid recommendations are higher for women in certain high-risk groups, which are reviewed separately. Issues related to folic acid intake and supplementation in pregnancy, including nutritional sources of folic acid (fortified foods) and folate (citrus, dark green leafy vegetables, nuts, liver) and their role in prevention of neural tube defects, are reviewed in detail separately.

Choline — Choline is an essential nutrient that is transported at high rates from mother to fetus. Choline availability is crucial for the development of the central nervous system, with evidence of effects on cognitive function in infants. Most United States women consume far less choline (mean intake 260 mg/day) than the 450 mg/day that is recommended [70].
Pregnant women should consume adequate choline from food and supplemental sources, although choline in often absent or low in prenatal vitamins. Eggs, meats, fish, and dairy are good sources of choline; plant sources, such as navy beans, Brussels sprouts, broccoli, and spinach also contain choline.

Zinc — Zinc is essential for normal growth, severe zinc deficiency has been associated with growth restriction, and observational studies have suggested that zinc supplements can increase birth weight. However, a 2015 systematic review of 21 randomized trials of zinc versus no zinc supplementation in pregnancy found that zinc supplementation did not improve any pregnancy outcome, except for a 14 percent reduction in preterm birth in trials that primarily involved low-income women (RR 0.86, 95% CI 0.76-0.97) and without a statistical reduction in low birth weight (RR 0.93, 95% CI 0.78-1.12). Multiple social, nutritional, and medical factors may have been responsible for the preterm births in low-income women and these issues are probably more important targets for intervention than zinc intake.

Contemporary data for zinc intake among pregnant women in the United States are not available; the last report by the National Health and Nutrition Examination Survey 1988 to 1994 indicated a mean intake of 9 mg/day from food alone, and a total intake of 22 mg/day from food plus supplements, which meets and safely exceeds the requirement.

Management of women who are at risk for severe zinc deficiency (e.g., active inflammatory bowel disease, acrodermatitis enteropathica, pica) is discussed separately.

Iodine — Iodine deficiency has potentially harmful effects, such as maternal and fetal/neonatal hypothyroidism. The National Academy of Medicine recommends daily iodine intake of 220 mcg during pregnancy and 290 mcg during lactation; the World Health Organization (WHO) recommends iodine intake of 250 mcg for both pregnant and lactating women.

United States data indicate that, among pregnant women, 56 percent had urinary iodine concentrations that were indicative of inadequate intake. Non-Hispanic black women were particularly likely to have low levels. Similar results have been found in the United Kingdom and in Sweden.

Declining intakes of iodine may be related to increased intake of non-iodized salt from processed foods and in the home (such as sea salt, which contains less iodine than iodized salt). Pregnant women should be encouraged to use iodized salt (contains 95 mcg iodine per one-quarter teaspoon) and/or consume seafood that is naturally rich in iodine to attain adequate intake. A Cochrane systematic review found insufficient data to reach any clinically useful conclusions on the benefits and harms of routine iodine supplementation preconception, during pregnancy, or postpartum. Another systematic review came to a similar conclusion regarding iodine supplementation for pregnant women residing in areas of mild-to-moderate iodine deficiency, presumably because they are able to physiologically adapt to mildly low iodine intakes and draw from intrathyroidal iodine stores to maintain fetal euthyroidism and enable normal neurodevelopment. However, given the lack of definitive data, the American Thyroid Association recommends that women who are planning pregnancy, are pregnant, or are lactating supplement their diet with a daily oral multivitamin supplement that contains 150 mcg of iodine in the form of potassium iodide; it should be noted that many prenatal vitamins contain no iodine.

Excessive iodine intake is also harmful (discussed below).

Vitamin A — Vitamin A requirements increase slightly during pregnancy, from 2640 international units (800 retinol equivalents) per day in nonpregnant women to 3300 international units (1000 retinol equivalents) per day in pregnant women, because of its role in cell division, fetal organ and skeletal growth, maintenance of the immune system, and development of vision in the fetus as well as maintenance of maternal vision. A pregnant woman with moderate deficiency is at higher risk for night blindness, particularly in the third trimester when fetal growth is accelerated, because the fetus will obtain sufficient vitamin A at the expense of maternal stores. In some developing countries, vitamin A deficiency is a concern; in addition to maternal night blindness,

deficiency puts women at risk of maternal xerophthalmia, anemia, and susceptibility to infection. By contrast, in developed countries, excessive intake of vitamin A is the primary concern.

Where vitamin A deficiency is endemic, such as Southeast Asia and sub-Saharan Africa, a daily supplement less than 10,000 international units (3000 retinol equivalents) or a weekly supplement less than 25,000 international units (8500 retinol equivalents) appears to have some maternal and fetal/neonatal health benefits (e.g., reduction in maternal anemia and night blindness) with no evidence of teratogenicity, but does not reduce maternal or perinatal mortality, which was suggested by some early studies. Vitamin A supplementation is unnecessary where habitual vitamin A intake exceeds three times the RDA (i.e., 8000 international units or 2400 mcg retinol equivalents).

OBTREX Soft gel **PNV's are a good source for your daily PNV.** It is important to take a daily prenatal vitamin and it is ideal if you have been taking it prior to getting pregnant. If you call my office, my staff can help you get this PNV for less than is available off the internet. Insurance does not typically cover PNV Rx's an a good PNV costs about $1.00/day. A good investment in your baby's future.

OBTREX With 100% Bioactive Folate ONE

OBTREX With 100% Bioactive Folate DHA

PRENATAL VITAMINS SPECIFICALLY FORMULATED TO HELP REDUCE THE UNPLEASANT EFFECTS ASSOCIATED WITH PREGNANCY*

DEAR HEALTHCARE PROVIDER,

To help you provide the very best care for your patients, we are pleased to offer patient starters of **OBTREX™ ONE, all-in-one softgels**; and **OBTREX™ DHA, small and well-tolerated combo pack**, premium prenatal multi-vitamins and minerals.

Available only online, OBTREX™ ONE and OBTREX™ DHA are easy to recommend and are shipped directly to your patients' home.

PRODUCT HIGHLIGHTS:

OBTREX™ ONE

- Small size — **easy to swallow,** reduces gag reflex
- **100% L-Methylfolate (5-MTHF)** as the improved source of folate
- Well tolerated, highly bioavailable **Carbonyl Iron**
- **Plant-based DHA** — non-fish
- **Vitamin B6** to help relieve morning sickness and minimize fatigue*

OBTREX™ DHA

- Small-sized **soft gel** and **caplet** are **easy to swallow**
- Includes **100% Bioactive L-Methylfolate** as the improved source of folic acid
- Contains **40mg of Vitamin B6** to help relieve morning sickness and minimize fatigue
- Offers **350mg of DHA** in small enteric-coated soft gel
- Enteric coating prevents vitamin after-taste and burp-back
- **Slow-release iron** helps with tolerability

Prenatals are known to cause an upset stomach, but **OBTREX™ ONE** and **OBTREX™ DHA**, contain a combination of essential vitamins and minerals that help the body stay comfortable: Carbonyl Iron, to minimize the gastric upset often caused by other forms of iron; Omega-3, to help with fetal brain, retina, and nervous system development; and Vitamin B6, which help with the morning sickness; all in a non-constipating formulation*.

† These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

Rev. 06/22 PRO144-HCPL

Early Complications of pregnancy

Bleeding: About 25% of women will spot or bleed in the first weeks of pregnancy. Most of these women will go on to have a normal pregnancy and delivery.
If your blood type is negative (Rh or Rhesus negative) and you have bleeding, let us know as you may need a Rhogam injection. If you do not know your blood type call the office and we will check your record or ask you to get a blood test done.
Heavy bright red bleeding is something you can have evaluated 24/7 by calling our office.

Nausea & vomiting: Nausea and vomiting of pregnancy (NVP) is quite common and affects 50-80% of pregnancies. Pregnant women can have nausea at different times of the day. Most often these symptoms resolve by 14-16 weeks. Some women can control their nausea by eating small, frequent meals, eating bland foods, and avoiding 'trigger foods.' Ginger (tea, cookies, ginger ale, candies) can reduce nausea. Some women need medication. First line treatment is Bonjesta a Rx with doxylamine and Vit B6 in a timed-release capsule taken 2x a day. If Bonjesta is not covered by your insurance, a Rx can be sent to a specialty pharmacy and the cost is approx. $60.00/month. The two components in Bonjesta are available OTC: doxylamine (25 mg found in the OTC med called Unisom) and vitamin B6 (50 mg). Doxylamine is a sedating antihistamine and is taken at bedtime because it may put you to sleep.

Treatment	Benefit	Adverse Effect	Fetal Risk
Ginger	Cohort studies show improvement	GERD	None
Sea bands	Cohort studies show improvement	Cost	None

Pyridoxine and Doxylamine	RCT proven to decrease N/V	Drowsiness, dizziness, dry mouth	None
Reglan	RCT proven to decrease N/V	Drowsiness, dry mouth	Population studies of 3000+ women found no increase in birth defects
Zofran	RCT proven to decrease N/V	Constipation	

Options for severe nausea and vomiting can include out-patient IV fluids to correct the bodies dehydration.

Abdominal Pain. Some pelvic cramping or discomfort is quite normal as your uterus grows and stretches. It may improve with position change. You should call for severe pain or pain associated with bleeding. Tylenol is considered the preferred pain medicine while pregnant. You are discouraged from using Motrin, Advil, Naprosyn, Ibuprophen.

Medications in Pregnancy:

Many medications are safe to use in pregnancy. When treating a medical problem, it is often safer to continue medications than it is to stop. For example, medications are typically continued for asthma, high blood pressure, seizures, diabetes, and thyroid problems in pregnancy.

Continue all your scheduled medications once you find out you are pregnant unless you have been instructed to stop. Call if you have questions.

It is preferable to only take medications when medically indicated in pregnancy to reduce the chance of harm to your baby. Because of how rapidly your baby changes, a

few medications may be safe in one trimester, and should be stopped or changed in another.

For medications that are considered safe in pregnancy you can take medications at the same dose you would if you were not pregnant - such as Tylenol, heartburn, and constipation medications.

Colds & allergies.

Pregnant women get sick too. Avoid cold remedies that contain alcohol. Also avoid the decongestants pseudoephedrine and phenylephrine, which can affect blood flow to the placenta.

For allergies:

- you can try several non-medication options: nasal saline sprays, Neti pot with sterile/distilled water, nasal strips at night.
- Many allergy medicines are safe in pregnancy: Allegra (fexofenadine), Claritin (loratadine), and Zyrtec (cetirizine) are all safe to take daily if needed.
- You can take Benadryl (diphenhydramine) for congestion.
- Sudafed (pseudoephedrine) is safe in pregnancy after the first trimester, as long as you do not have a problem with *high blood pressure* (hypertension). Pseudoephedrine is preferred to phenylephrine.

Rest and time are often the best medication for colds. Most colds are viral and do not improve with antibiotics.
Avoid cold remedies that contain alcohol.

For cough and cold:

- Sore throat: throat lozenges with benzocaine (Cepacol, Halls, Vicks VapoRub).
- Fever, aches & pains: acetaminophen (Tylenol).
- Cough: dextromethorphan (Robitussin DM) decreases coughing
- Thins mucous by increasing water in mucous/Expectorant: guaifenesin (Mucinex)
- AVOID products with pseudoephedrine (Sudafed) and phenylephrine which can alter blood flow to the placenta

Many cough and cold products may have acetaminophen in them - be careful not to take more than the daily recommended dose which is no more than 1000 mg in 24 hours.

Occasionally antibiotics are needed for respiratory infections, such as bronchitis. If you feel like your cold is getting worse or lasting longer than it should please contact your primary care doctor or go to Urgent Care.

A saline nasal spray is one of the best things a person can do for any acute or chronic upper respiratory condition in which inflammation plays a role. A nasal irrigation device like a Neti pot can be helpful. Mix 3 teaspoons of non-iodized salt with one teaspoon of

baking soda. Add one teaspoon of this mixture to 8 oz of distilled (or boiled and cooled) water in the Neti pot. Tilt your head over the sink at a 45-degree angle, place with spout in one nostril and gently pour in the salt solution. Repeat in the other nostril. Mayo Clinic Sinus rinsing Video. Steroids are often time prescribed by primary care doctors for upper respiratory illnesses but are not thought to be helpful. Read NYT Steroids Are No Help for Respiratory Issues

Aspirin use in pregnancy to reduce complications

Covid infection while pregnant has been associated with a higher risk for pre-eclampsia. Other risk factors for pre-eclampsia (PreE) include the following:

first time pregnancy
diabetes (regardless of diet/meds)
chronic hypertension
history of PreE
Kidney disease
Maternal age > 40
Maternal BMI > 40
Covid infection while pregnant

Baby ASA 81-150 mg has been shown to decrease the risk for pre-eclampsia. If you have one of the above risk factors, I recommend you start baby asa between 12 -28 weeks (optimally started by 16 weeks) and take thru 6 weeks postpartum do decrease risk for postpartum PreE. Baby ASA at 81 mg will not complicate cesarean sections or getting an epidural.

Antibiotics in pregnancy can be safe.

1. Penicillin and cephalosporins (Keflex) may be prescribe for upper respiratory infections and taken in any trimester.
2. Erythromycin & azithromycin should be avoided in the first trimester only
3. Macrobid for UTI's is safe to take but not typically before 13 weeks and after 36 weeks.

Heartburn is very common in pregnancy. First line treatment is avoiding potential trigger foods (spicy foods) or laying down right after eating. Tums are safe to take during pregnancy. If Tums are not strong enough you can try a stronger medicine. These are available over the counter or you can request a prescription:

1. Histamine blockers: Zantac (ranitidine); Tagamet (cimetidine); Pepcid (Famotidine)
2. Proton Pump Inhibitors: Protonix (Pantoprazole); Prevacid (lansoprazole); Nexium (esomeprazole)
3. Simethicone for gas pains (Gas X, Mylanta, Mylicon)

Constipation & hemorrhoids are common pregnancy concerns.

For hard stools or more frequent bowel movements:

- Increase insoluble fiber (whole grains, vegetables)
- Ensure adequate water intake: 8-10 glasses a day
- Stay active: walking and aerobic activity may decrease constipation
- Add a stool softener: Colace 100mg twice daily
- Some fiber supplements are safe in pregnancy: MiraLAX, lactulose
- You can add milk of magnesia or magnesium supplements: 250mg 1-3 times per day
- If needed, occasional use of a gentle laxative - Bisacodyl.

For relief of symptoms from hemorrhoids:

- Sitz baths. 10-15 min a day 2-3 times daily. With warm water or Epsom salts
- Topical hydrocortisone treatments: Anusol cream, preparation H, or suppositories
- Tucks pads (witch hazel)

For stronger medications or more severe pain please talk to us at your visit - some women do need procedures or prescription medication to treat painful hemorrhoids during pregnancy.

Yeast infections

Over the counter vaginal treatments are safe in pregnancy. The 7-day course is preferred as it is usually more effective (Monistat 7). Diflucan is not used while pregnant but can be prescribed while breast feeding.

Insomnia in Pregnancy

Complaints of insomnia and midcycle awakening during pregnancy is the rule, rather than the exception for many pregnant women, particularly later in pregnancy. There has unequivocally been a worsening of complaints of sleep disruption including insomnia and midcycle awakening during the Covid pandemic that is greater then previously seen. The first thing to consider is whether it is part of an underlying mood disorder. While primary insomnia does occur, it is really important to remember that insomnia can be part and parcel or an underlying mood disorder.

Digital Cognitive Behavioral Therapy for Insomnia (d CBT-I) has a very strong evidence base for effectiveness as a first-line intervention for many. Stanford Health Care and Sleep Foundation are web resources for more education about insomnia and phone numbers for providers. The Dept of Veterans Affairs has a free digital app: Insomnia Coach (see below).

If you have an incomplete response, you may first consider treating an underlying mood disorder like depression or anxiety, if one exists. SSRIs in pregnancy (selective serotonin reuptake inhibitors) like sertraline, citalopram or fluoxetine have good reproductive safety (see the section below on perinatal mental health). Use of sedating antihistamines like doxylamine (OTC Unisom) which is used early in pregnancy for preventing nausea and vomiting is one of the few Category A meds (safe in pregnancy). Next line of treatment can be low dose benzodiazepines (lorazepam of clonazepam) which the majority of data does not support an increased risk of major congenital malformations even when used in the first trimester. Very low doses of tricyclic antidepressants (nortriptyline 10-25 mg at bedtime) have a 40-year history and

at least one pooled analysis showing the absence of increased risk for major congenital malformations when used.

National Center for PTSD

INSOMNIA COACH

Insomnia Coach is a **free, easy-to-use mobile application** created for everyone, including Veterans and Service members, who are suffering from insomnia. It was developed by the Department of Veterans Affairs (VA) in 2020. The app is based on Cognitive Behavioral Therapy for Insomnia (CBT-I)—an evidence-based treatment—and scientific research about how people can change their behaviors and thoughts to improve their sleep. Insomnia Coach is not meant to replace professional care related to sleep problems or mental health conditions, such as PTSD.

LEARN ABOUT INSOMNIA AND SLEEP

Insomnia Coach provides information to help you learn about sleep, insomnia and factors that affect your ability to fall and stay asleep.

- Learn about sleep basics—why we sleep, the stages of sleep and factors that affect sleep
- Get information about how insomnia develops, problems related to insomnia and treatment options

GET IT ON Google Play

Download on the App Store

FOLLOW A TRAINING PLAN TO BETTER SLEEP

Your Training Plan will guide you to better sleep over 5 weeks (and beyond).

- Get started by completing a sleep diary and checking your insomnia symptoms
- Improve your "sleep hygiene"—learn how to set up your sleep environment, limit caffeine intake and work on other habits to improve sleep quality
- After you complete your first week of the plan, the app will help you set time in bed recommendations to help limit time you spend awake in bed

TRACK DAILY AND WEEKLY PROGRESS

Just as sleep problems probably didn't start in 1 night, it's not realistic to expect them to change in 1 night. Seeing how your sleep changes over time will help you stick to your Training Plan.

- Review tips from the Sleep Coach to get personal feedback
- View graphs that show your sleep patterns over time
- Set reminders to visit the app each day to enter a sleep diary, wind down for sleep and more

GET YOUR SLEEP BACK ON TRACK WITH HELPFUL TOOLS

Whether you want to quiet your mind, relax your body or work on sleep habits, Insomnia Coach has 17 tools to help. Just a few minutes a day can have a big impact on your sleep.

NOTE: It's recommended that before using this app you consult a health care professional if you have any of the following conditions, as they may be affected by changes to your sleep habits: sleep apnea or restless leg syndrome; bipolar disorder; seizure disorder/epilepsy; sleep walking; night terrors; excessive daytime sleepiness; or, frailty and risk of falling if getting up at night. This app may not be right for you if you are a shift worker, or if your job requires you to be awake at night.

National Center for PTSD

For more information, visit:
www.ptsd.va.gov/appvid/mobile

Date Created: May 15, 2020

VA | U.S. Department of Veterans Affairs

Caffeine use in pregnancy is safe if consumed in moderation. Caffeine readily passes the placenta, and the slow caffeine metabolism in the mother and fetus can result in high circulating caffeine levels. Associations with low birth weight have been observed for both coffee and tea and showed a dose-response relationship, without a clear

threshold. About 200 mg/day is safe to consume.

Table 1. Caffeine Content of Commonly Consumed Foods, Beverages, and Over-the-Counter Drugs in the United States.*

Source	Serving Size†	Milligrams of Caffeine
Coffee, brewed, coffee shop	12 fluid oz	235
Americano, coffee shop	12 fluid oz	150
Coffee, brewed	8 fluid oz	92
Coffee, instant	8 fluid oz	63
Espresso	1 fluid oz	63
Decaffeinated coffee	8 fluid oz	2
Black tea, brewed	8 fluid oz	47
Green tea, brewed	8 fluid oz	28
Chamomile or peppermint tea	8 fluid oz	0
Cola soft drink	12 fluid oz	32
Energy drink	8.5 fluid oz	80‡
Energy shot	2 fluid oz	200‡
Dark chocolate	1 oz	24
Milk chocolate	1 oz	6
Over-the-counter drug for alertness	1 tablet	200
Headache medication with caffeine	1 tablet	65

* Information is from FoodData Central.[2]
† To convert fluid ounces to milliliters, multiply by 29.57. To convert ounces of chocolate to grams, multiply by 28.35.
‡ The caffeine content is shown for commonly used versions of energy drinks and shots, but the content may vary, particularly with different brands.

Opiates/ Marijuana/ Alcohol and Pregnancy

ACOG Committee Opinion 711 August 2017: Opioid Use and Opioid Use Disorder in Pregnancy

Opioid use in pregnancy has escalated dramatically in recent years, paralleling the epidemic observed in the general population. Substance use disorders affect women across all racial and ethnic groups and all socioeconomic groups, and affect women in rural, urban, and suburban populations. Opioids may be taken as prescribed by physicians and in a controlled manner or may be used without a physician's knowledge and be associated with opioid use disorder. Opioid use comes with the possibility of becoming physically dependent on opioids and, in the case of pregnant women, the possibility of an infant developing neonatal abstinence syndrome (NAS). Neonatal abstinence syndrome is a drug withdrawal syndrome, seen in about ~80% of neonates exposed in-utero to opioids from chronic maternal opioid use during pregnancy. NAS is characterized by disturbances in gastrointestinal, autonomic, and central nervous systems, leading to a range of symptoms including irritability, high-pitched cry, poor sleep, and uncoordinated sucking reflexes that lead to poor feeding.

ACOG Committee Opinion 722 October 2017: Marijuana Use During Pregnancy and Lactation

Marijuana (Cannabis Sativa) is the illicit drug most commonly used during pregnancy. With the legalization of recreational use of marijuana in several states, the self-reported prevalence of marijuana use in pregnancy ranges from 2% - 5 % in most studies but increases to 15 – 28% among young, urban, socioeconomically disadvantaged women. Notably, 34 – 60% of marijuana users continue to use during pregnancy, with many women believing that it is relatively safe to use during pregnancy and less

expensive than tobacco. Women think marijuana is a “natural” way to reduce the nausea and vomiting that occurs in early pregnancy. Studies using laboratory animals show in utero exogenous cannabinoid exposure can disrupt normal brain development and function. Studies in children exposed in utero to marijuana show lower scores on tests of visual problem solving, visual-motor coordination, and visual analysis compared to children not exposed to in utero marijuana. Additionally, prenatal marijuana exposure is associated with decreased attention span and behavioral problems and is an independent predictor of marijuana use by age 14 years. Marijuana is not felt to cause structural anatomic defects (not teratogenic) in humans unlike alcohol. Pregnant patients whose used marijuana weekly during their pregnancy, were significantly more likely to give birth to a newborn less than 2500gm. There are insufficient data to evaluate the effects of marijuana use on infants during lactation and breastfeeding, and in the absence of such data, breastfeeding is discouraged. Because marijuana is neither regulated nor evaluated by the US FDA, there are no approved indications, contraindications, safety precautions, or recommendations regarding its use during pregnancy and lactation.

ACOG Committee Opinion 496 April 2011: At-Risk Drinking and Alcohol Dependence: Obstetric and Gynecologic Implications

Alcohol is a teratogen. Fetal alcohol syndrome is the most severe result of prenatal drinking. Fetal alcohol syndrome is associated with central nervous system abnormalities, growth defects, and facial dysmorphia (abnormal appearance). However, for every child born with fetal alcohol syndrome, many more are born with neurobehavioral defects caused by prenatal alcohol exposure. Alcohol related birth defects are completely preventable. Even moderate alcohol consumption during pregnancy may alter psychomotor development, contribute to cognitive defects, and produce emotional and behavioral problems in children. The US Surgeon General advised that pregnant women should not drink alcohol as there is no known safe amount.

Weight gain

Maintaining a healthy weight during pregnancy is important for your baby and for your health. Weight gain during pregnancy depends on your starting weight. Here is a general guideline for weight gain with a singleton - for twin’s pregnant women need to gain more weight.

PRE-PREGNANCY WEIGHT	RECOMMENDED WEIGHT GAIN
Underweight (BMI <18.5)	28-40 lbs.

Normal weight (BMI 18.5 - 24.9)	**25-35 lbs.**
Overweight (BMI 25-29.9)	15-25 lbs.
Obese (BMI 30 or more)	11-20 lbs.

Significant weight gain in pregnancy can be an independent variable that leads to a "big" baby called macrosomia. Other maternal risk factors that can predispose to a newborn to macrosomia is preexisting diabetes, gestational diabetes, maternal pre-pregnancy obesity, excessive gestational weight gain, abnormal fasting and postprandial glucose levels, a prior large newborn over 8 lb. 8 oz, and going into labor after your due date. Some variables like exercise and diet are within your control whereas whether you get gestational diabetes is not.

An effective and proven intervention proven to reduce the risk of big baby is regular exercise combining in both aerobic and strength training and a low glycemic diet. Studies have shown that women who regularly exercise can gain less weight and have a 20% lower risk for cesarean.

Back Pain is very common in pregnancy.

Pain can be from changes in shape of the lumbar spine due to a change in your center of gravity, more laxity at the joints, or swelling which compresses the nerves causing sciatic pain, to name a few. Women may report pain in their back, hips, buttocks, upper legs or traveling down to the lower legs.
Please let us know if you have concerns regarding back pain. Options for management include support devices, ice and/or heat, over the counter medications, stretching exercises. Some women with more significant pain may benefit from physical therapy, chiropractic, or prescription medications.

A Sacro iliac belt (SI belt) can be worn under your pants to stabilize the pubic ligament and SI joints. One such belt is called a Serola belt and under the pregnancy tab on our website.

Exercising your Pelvic Floor

All women are encouraged to be physically active throughout their lives and there are even better reasons to continue this commitment while pregnant. Experts recommend that women to participate in at least 30 min of aerobic activity on most days of the week. In addition, they are encouraged to perform strength training 2-3 days per week. A recent large medical literature review has concluded that regular aerobic exercise strengthens the pelvic floor muscles (PFM's) which can then prevent urinary incontinence. A different randomized controlled trial (RCTs is the gold standard for research) found that pelvic floor muscle training during pregnancy increases pelvic floor muscle strength which can prevent urinary incontinence during pregnancy and postpartum. The hypothesis on how regular exercise may improve pelvic floor muscle strength is that a feed forward loop or co-contractions of the PFM's during an increase in intraabdominal pressure, may strengthen the PFM's. However, a sufficient strong and

quick enough co-contraction to counteract the intraabdominal pressure typically occur only if the PFM's have an optimal function. Weak or injured muscles may not be able to react in time or with sufficient strength to prevent leakage. It is the PFM strength that reduces urinary incontinence and not just the regular exercise. Another benefit to pelvic floor exercises are faster labors. A recent systematic review of 12 RCTs involving 2243 primigravid women concluded that PFM training significantly shortened the first (mean 28 minutes) and second stage (mean 10 minutes) of labor. The take-away is that pregnant women are encouraged to do regular strength training of their pelvic floor 2-3x times a week. Correctly performing PFM strength training may be a challenge without good biofeedback. We can help you with know how to perform a pelvic floor contraction but then not doing them is not helpful. A vaginal biofeedback devices (like a "fit bit") devices called the ELVIE pelvic floor trainer helps you correctly you're your pelvic floor muscles while at the same time remind to do your exercises. If interested in getting more information about the Elvie trainer, ask me or any of the staff to text you information about Elvie trainer which includes an easy option to purchase Elvie for about ~$20.00 less than you can buy on the web or thru amazon.

There is another web-based exercise coach that is specific to pregnancy and postpartum called Every Mother. Well respected and motivating to move while you are pregnant while helping to prevent diastasis recti. To register use this hyperlink Every Mother/Dr Leach.

EVERY MOTHER

THE ONLY PROGRAM PROVEN TO RESOLVE DIASTASIS RECTI.

Through proper coordination of the deep core muscles, Core Compressions™ are proven to strengthen and restore the abdominal wall. These revolutionary exercises serve as the foundation of our EMbody Programs.

A study conducted by Weill Cornell Medical School and published in the American Journal of Obstetrics & Gynecology (May 2014) found that 100% of 63 subjects following the EMbody Program fully resolved diastasis recti, a common post-pregnancy condition in which the abdominal muscles separate.

EVERY MOTHER AS SEEN IN

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Getting Started

- Subscribe to every-mother.com
- Download the mobile app
- Follow your customized path and achieve your goals

"EM made it easy to stay interested and dedicated with its wide selection of workout videos, and I never worried about injuring myself like I have with other programs."

-Caroline
Age 36, 1 child

"Every Mother was recommended to me by my physician. It is a great way to get back into working out after having a baby without being too intense too soon. I would recommend over and over again."

-EM member

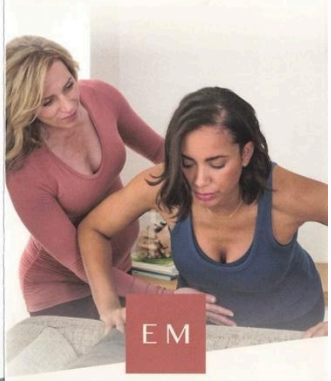
"I love the short, targeted and challenging workouts. I can get a workout and Core Compressions in each day while still keeping up with my 6-month old's demanding schedule!"

-Melissa
Age 39, 1 child

EVERY-MOTHER.COM

Questions about joining the Every Mother™ community? Visit our website or email info@every-mother.com

EVERY MOTHER



EM

EVIDENCE-BASED WORKOUTS FOR EVERY STAGE OF MOTHERHOOD

Endorsed by medical professionals

EM BODY PREPARE

Endorsed by OBs and midwives, the EMbody Prepare Program includes safe prenatal workouts and trimester-specific regimens.

TRAIN FOR AN EASIER LABOR

Prenatal exercise is proven to reduce the duration of active labor by over 1/3.

BE IN CONTROL OF YOUR BODY

Avoid back pain & swelling. Train for a strong birth and recovery.

FEEL SAFE DURING WORKOUTS

Our workouts follow ACOG guidelines for exercise during pregnancy and are endorsed by medical professionals

"...safely addresses the postural changes and muscle imbalances of pregnancy while developing strong core muscles to facilitate a smooth delivery and recovery."

-Geeta Sharma, MD, MFM
Carnegie Hill OBGYN, Mount Sinai Hospital

EM BODY RECLAIM

"The thing that really drew me to this program was the fact that I will learn how to best protect my core all day long, not just during my workouts. It's all about taking a holistic approach to the issue and understanding that my core affects everything."

-Lauren
Age 32, 4 children

The EMbody Reclaim Program provides workouts and training regimens proven to resolve diastasis recti (abdominal separation) while improving core strength and function.

IMPROVE CORE HEALTH AT ANY AGE OR STAGE OF MOTHERHOOD

- Stop leaking when you sneeze, jump or laugh
- Free yourself from back pain
- Reconnect with your core and pelvic floor
- Improve your sex life
- Strengthen and tone
- Resolve diastasis recti (abdominal muscle separation)

"5 years after my second child was born, I was finally able to get rid of my diastasis without surgery."

-Shem Age 43, 2 children

SIMPLIFY YOUR FITNESS

- Proven core exercises
- Efficient full body workouts
- Measurable results in 10-30 minutes per day

GUIDED PATHS

Every Mother offers comprehensive workout regimens with a daily exercise Rx tailored to meet your individual goals.

"I can't believe the progress I'm making. Less back pain, no more leaking, and my belly is going back into place. This program could not be easier to follow. I highly recommend!"

-EM Member

RECLAIM CLASSIC PATH

Our original, evidence-based exercise program

- Resolve diastasis recti
- Improve core strength and function
- Enhance total body fitness

RECLAIM LIGHT PATH

The lighter, gentler version of Reclaim Classic. For women who

- Are new to exercise
- Have taken a long break from exercise
- Prefer a lighter workout regimen

NEW: EARLY POSTPARTUM PATH

Revolutionary, OB-endorsed 6-week program to facilitate recovery during the earliest weeks

- Gentle, safe and empowering
- Boost energy and relieve anxiety
- Sleep better
- Safely ramp up to full activity

Leg cramps

are most common in the second and third trimesters. Decrease your risk of leg cramps by:

- Stretching the calf before bedtime
- Stay hydrated
- Consider a magnesium supplement

If you have a leg cramp you can try stretching the muscle, walking, elevating the foot, a hot shower or warm bath, massage the muscle with your hands or an ice cube.

Shortness of breath

As many as 70% of women have shortness of breath during normal pregnancy.[2] Although the mechanism is incompletely understood, contributing factors include increased blood volume and cardiac output (which peak between 24 to 32 weeks of gestation at 130 to 150% of the pre-pregnancy baseline value[3]), elevation of the diaphragm, decreased functional residual capacity, and progesterone-mediated increase in respiratory drive and minute ventilation. You should not ever feel winded while having a normal conversation. Reactive airway disease (asthma) is typically treated with bronchodilators and inhaled steroids. Your allergist or primary care doctor typically is responsible for managing your asthma.

Mental Health while pregnant is important for you, your baby, and your family.

The American College of OB/gyn recommends that patients be screened for depression at least once during the perinatal period with a standardized, validated tool. The most common screening tool used is called the Edinburgh Postnatal Depression Scale (EPDS) . The prevalence of perinatal depression is a significant cost to individuals, children, and families. In 2011, 9% of pregnant women and 10% of postpartum women met the criteria for major depressive disorder. Untreated depression can be associated with poor maternal infant bonding, breast feeding success and overall health of woman's family. Treatment and support services are available in the community and medications can be safe and even critical for maternal and fetal well-being. Please let us know if you are concerned so we can help.

Under treatment or no treatment of peri-natal depression is associated with preterm birth, low-birth weight neonates,

preeclampsia, impaired infant attachment affecting neurodevelopment, challenges with partner and social support systems, and suicide, among other negative consequences. SSRI and SNRI are the most prescribed medications for perinatal depression. While they are highly effective, depression symptom improvement can take 4-6 weeks. Options for pharmacologic management of perinatal depression

TABLE 1	Options for pharmacologic management of perinatal depression		
Medication	**Starting dose**	**Target dose**	**Maximum dose**
Sertraline	50 mg	150 mg	200 mg
Fluoxetine	10 mg	40 mg	60 mg
Citalopram	10 mg	40 mg	40 mg
Escitalopram	10 mg	20 mg	20 mg
Mirtazapine	15 mg	30 mg	45 mg
Venlafaxine	75 mg	150 mg	225 mg
Bupropion	75 mg	150 mg	300 mg

Travel in pregnancy

For uncomplicated pregnancies you may fly internationally until 34 weeks, and in the United States until 36 weeks. *Check with your airline before you fly to verify their regulations*!
Pregnant women are more prone to developing potentially dangerous blood clots. To reduce your risk: wear compression stockings, walk when it is safe to do so, or do leg/calf stretches at your seat, especially for long flights. Stay hydrated on flights. If you look pregnant while flying, you may want to carry a doctor's note with you - ask at your visit before you travel.

Local (car) travel at the end of your pregnancy depends on many factors - your gestational age, history of fast labor, any pregnancy complications, and how far you will be from a medical facility.
If your water breaks outside of the East Bay Area region you will likely deliver at the closest hospital and not at John Muir.

Virus's and Vaccines while pregnant

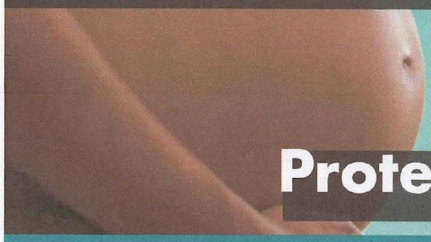
Chickenpox (Varicella): Chickenpox is caused by a virus. Most people contract chickenpox as a child or were vaccinated for it. If you have had it, it is very rare to get it again. Your body has antibodies to help protect your baby. Getting chickenpox for the first time while pregnant, can be affect the baby in different ways depending on your gestational age at time of first infection. If you haven't had chickenpox or the vaccine, avoid contact with anyone who has chickenpox. If you think you have been exposed and don't know if you have had the vaccine or chickenpox, a lab can be ordered to see if you have immunity.

Listeriosis (food poisoning from Listeria) can be a serious infection. It is caused by eating food contaminated with the Listeria bacteria and causes flu-like symptoms like fatigue, chills, fever, and muscle aches. If it is caught early, listeriosis can be treated with antibiotics. The source of listeria bacteria is contaminated food, including unpasteurized milk of cheese, hot dogs, luncheon meats, smoked seafood, and unwashed vegetables. The concern with Listeria is why patients ask if it is ok to eat deli meats. These infections to a newborn can be lethal but also very rare. The incidence of listeriosis in pregnancy is 12 per 100,000 compared with the rate of 0.7 per 100,000 in the general population. The CDC monitors cases of listeria infection and the estimates that there were about 800 cases in 2007. I think eating a deli sandwich is ok but it you want to be extra careful, heat the meat before eating.

(see step 1 to having a healthy pregnancy)

Zika is a new and evolving concern in obstetrics. Most people who get Zika were bitten by an infected Aedes mosquito. Although, less common, infected men can pass the virus to their partner through sexual contact. Aedes mosquito live in tropical, subtropical and temperate climates. The Zika virus is found primarily in South American countries, Puerto Rico, and US Virgin Islands. There have been occasional reports of the Zika virus in the southern United States. The most up to date information on Zika can be found at the CDC website: https://www.cdc.gov/zika/. You can find up-to-date travel information at www.nc.cdc.gov/travel/page/zika-travel-information
We recommend avoiding travel to areas with active Zika transmission (transmission by infected mosquitoes) during and 6 months before pregnancy for you *and your partner*.

ZIKA VIRUS



Protect Yourself.
Protect Your Pregnancy.

There are risks to your fetus if you are pregnant and get Zika virus.

Zika can cause serious birth defects, including microcephaly and other brain abnormalities. Microcephaly can lead to lifelong problems, such as seizures, feeding problems, hearing loss, vision problems, and learning difficulties.

There is no vaccine at this time. Avoiding infection is best.

The Zika virus spreads to humans in the following ways:

- Through a bite by an infected mosquito
- From a pregnant woman to her fetus during pregnancy or around the time of birth
- During sex

Symptoms of Zika virus infection:

- Symptoms usually are mild.
- Symptoms include fever; rash; joint pain; and red, itchy eyes.
- Many people with Zika virus infection do not have any symptoms.

If you want to get pregnant...

- Talk to your health care professional about
  - –your pregnancy plans
  - –the risks of Zika virus infection during pregnancy
  - –your male sex partner's risk of being exposed to Zika virus
- Take strict steps to avoid mosquito bites.

If you are pregnant...

- Take strict steps to avoid mosquito bites.
- Use a condom each time you have sex if your partner lives in or travels to an area where Zika virus is spreading.
- Don't travel to areas where Zika virus is spreading.
- See your health care professional to discuss testing if
  - –you or your sexual partner have traveled or live in an area where Zika is present or
  - –you or your sexual partner have symptoms of Zika virus infection.

Mosquito Bite Prevention

If you must travel to one of the areas where Zika virus is spreading, strictly follow these four steps to prevent mosquito bites:

1. Use EPA-registered bug spray with DEET, picaridin, IR3535, oil of lemon eucalyptus, paramenthane-diol, or 2-undecanone. Used as directed, these sprays are safe for pregnant and breastfeeding women.
2. Wear long-sleeved shirts and long pants.
3. Treat clothing and gear with permethrin or buy permethrin-treated items.
4. Stay in air-conditioned or screened-in areas during the day and at night.

Follow these steps at all times. Mosquitoes are active during the day and night.

The following web sites give the latest information about Zika virus:

- www.cdc.gov/zika
- www.acog.org/zika
- www.immunizationforwomen.org/zika

The American College of Obstetricians and Gynecologists
WOMEN'S HEALTH CARE PHYSICIANS
409 12th Street SW, PO Box 96920
Washington, DC 20090-6920
www.acog.org

CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION

PFS:011: Designed as an aid to patients, this document sets forth current information and opinions related to women's health. The information does not dictate an exclusive course of treatment or procedure to be followed and should not be construed as excluding other acceptable methods of practice. Variations, taking into account the needs of the individual patient, resources, and limitations unique to the institution or type of practice, may be appropriate.

Vaccines recommended while pregnant.

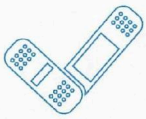
Covid 19 pandemic began in 2019 was understandably a new concern for pregnant moms as not a lot was known about this new virus. Over time it has become clearer that being pregnant increases susceptibility to Covid-19. Many hospitals including John Muir Health instituted universal SARS-CoV-2 screening for individuals presenting to labor and delivery and helping mom's keep their babies safe from horizontal transmission postpartum. Intrauterine transmission has occurred but appears to be rare. A large study from the Centers for Disease Control and Prevention (CDC) provided data showing the increased risk for pregnant women. Among more than the 450,000 symptomatic women of reproductive age with Covid-19 who were pregnant, admission to an ICU, invasive ventilation with intubation, and death were all more likely among pregnant individuals than among non-pregnant women of the same age. Several studies of pregnancy outcomes suggest higher risk for preterm birth 6% vs 16%. Some studies but not all studies have suggested a higher rate of still birth among infected persons who were pregnant then in pre-covid time frames (9.3 vs 2.4 /1000 births). There are hyperlinks to professional societies like ACOG (American College of ObGyn) and SMFM (Society for Maternal Fetal Medicine) and local health departments on our website.

Three vaccines for Covid-19 are now approved and ACOG and SMFM (society for maternal fetal medicine) have endorsed recommendations that pregnant and breast-feeding moms be offered these vaccines while awaiting more studies in pregnant/breast feeding individuals. If you have not received your first vaccine, wait until you are 15 weeks along. If you got your first vaccine and are due for second vaccine at less than 15 weeks, go ahead with getting your second vaccine shot. Until more persons are both vaccinated and or have had Covid-19 (herd immunity), your best protection is not to get the Corona Virus though social distancing, wearing your mask, hand washing, and limiting your exposure to persons you trust are observing these same precautions as close friends and family.

The information below is how John Muir's obstetricians & midwifes, nurses, and support staff are doing everything to keep our unit safe for new moms & dads to enjoy and safe childbirth.

The Pfizer & Moderna RNA and Johnson & Johnson DNA vaccines available as of 2021 may be considered in pregnancy after 15 weeks and breast-feeding moms at high risk of contracting Covid. Please look on the website for most current recommendations.

COVID-19 Vaccine Facts



The vaccines are safe.

Scientists worked for decades to develop the technology used in the vaccines. Millions of people have safely received COVID-19 vaccines.

The vaccines will not make you sick with COVID-19.

The vaccines teach your immune system how to spot and fight off the virus. Some people may have short-term side effects, such as pain in the arm where you got your shot, tiredness, or fever. This means your body is building protection.

The vaccines protect you.

COVID-19 vaccines give you powerful protection against the virus, including variants. Getting vaccinated helps protect you from serious illness and death. The COVID-19 vaccines may give you better protection than even a previous COVID-19 infection.

The vaccines protect you during pregnancy.

If you are pregnant, you are more likely to get seriously ill from COVID-19 than those who are not pregnant. Getting vaccinated can help protect you. Your vaccine may also help protect your baby from the virus after birth.

The vaccines will not affect your fertility.

Vaccinated people get pregnant at the same rates as those who are unvaccinated. Experts recommend COVID-19 vaccines for anyone who wants to get pregnant in the future.

The vaccines are widely available.

You can get a vaccine regardless of your immigration or health insurance status.

Learn more at acog.org/womens-health/covid-19 and check vaccines.gov to find a vaccine near you.

This Resource was supported by the American College of Obstetricians and Gynecologists (ACOG) and the Centers for Disease Control and Prevention (CDC) of the U.S. Department of Health and Human Services (HHS) as a part of a financial assistance award totaling $3,000,000 with 100 percent funded by ACOG and CDC/HHS. The contents are those of the author(s) and do not necessarily represent the official views of, nor an endorsement, by CDC/HHS, or the U.S. Government.

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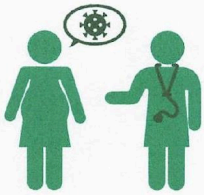


Why should I get the COVID-19 vaccine while I'm pregnant?

Pregnant women have a higher risk of more severe illness from coronavirus (COVID-19) than nonpregnant women. Getting vaccinated may protect you from severe illness. Vaccination also may help protect your fetus.

ACOG recommends that all pregnant women be vaccinated against COVID-19. If you are pregnant and want to know more about the vaccines, talk with your obstetrician–gynecologist (ob-gyn). This conversation is not required to get a vaccine, but it may be helpful.

Risks of COVID-19 infection

It's important to talk about your risk of getting COVID-19 and how the infection can affect your pregnancy. People who work in certain jobs, such as health care, may be at higher risk of getting COVID-19. Certain health conditions, such as diabetes mellitus or high blood pressure, also may increase your risk.

Pregnant women who get sick with COVID-19 are more likely than nonpregnant women to...

need care in an intensive care unit (ICU)

need a ventilator for breathing support

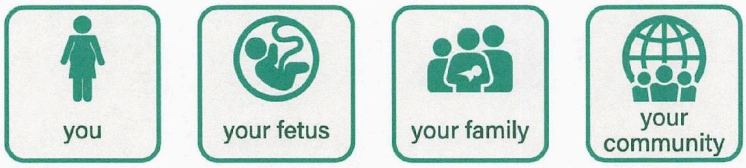
die from the illness

You and your ob-gyn should talk about your risk of severe illness if you get sick.

Benefits to getting vaccinated

The COVID-19 vaccines available in the United States are up to 95 percent effective in protecting against severe illness, hospitalization, and death from COVID-19.

Getting vaccinated during pregnancy may help protect...



Safety and fertility facts

The vaccines cannot give you COVID-19. The vaccines do not use the live virus that causes COVID-19.

COVID-19 vaccines are safe to get during pregnancy. Scientists have compared the pregnancies of women who have received COVID-19 vaccines and women who have not. The reports show that these women have had similar pregnancy outcomes. Data do not show any safety concerns.

After you get vaccinated, the antibodies made by your body may be passed through breastmilk and may help protect your baby from the virus. ACOG recommends that breastfeeding women be vaccinated against COVID-19.

There is no evidence that the COVID-19 vaccines affect fertility. ACOG recommends vaccination for anyone who may consider getting pregnant in the future.

How will I feel after getting the vaccine?

It is common to feel discomfort after getting a COVID-19 vaccine.

Remember:

If you have a fever or other discomfort after getting a shot, you can take acetaminophen. This over-the-counter medication is safe during pregnancy.

If your discomfort lasts more than a couple of days or if you have questions, talk with your ob-gyn.

If you have had a severe allergic reaction to a vaccine in the past, talk with your ob-gyn before getting the COVID-19 vaccine.

Other things to consider

- Some COVID-19 vaccines require two shots to be fully effective. When you get your first shot, you should ask when you need to return for your second shot.
- You may choose to keep wearing a mask even when fully vaccinated. Masks are most important for people at increased risk of severe illness from COVID-19. All fully vaccinated people should still wear masks when recommended by the CDC, your state or local government, and businesses or workplaces.

You are fully vaccinated 2 weeks after the second dose of a two-dose vaccine, or 2 weeks after a single-dose vaccine.

More information

- Other questions about COVID-19, pregnancy, and breastfeeding: https://www.acog.org/COVID-Pregnancy
- More vaccine considerations for people who are pregnant and breastfeeding: https://www.cdc.gov/coronavirus/2019-ncov/vaccines/recommendations/pregnancy.html
- Other COVID-19 vaccine questions: https://www.cdc.gov/coronavirus/2019-ncov/vaccines

I'm Pregnant and Have COVID-19. Now What?

If I'm pregnant and have COVID-19 ...

How sick will I get?

Most people have mild illness, but some people can get very sick. When you're pregnant, you have a higher risk of more severe illness than people who are not pregnant. You may have an even higher risk of severe illness if you have a health condition or if you are not vaccinated.

How can the virus affect my pregnancy?

You may be more likely to give birth too early. You may also be more likely to have other pregnancy complications, such as problems related to high blood pressure.

Who should I call?

Be sure your obstetrician–gynecologist (ob-gyn) knows you have COVID-19. Tell your ob-gyn about any symptoms you develop. If you have any of these symptoms, call 911 or go to the hospital right away:

- Trouble breathing or shortness of breath (more than what has been normal for you during pregnancy)
- Ongoing pain or pressure in the chest
- Sudden confusion
- Being unable to respond to others
- Blue lips or face

Should I ask about treatment?

Yes, talk with your ob-gyn about treatment options. Your ob-gyn may recommend medication to help treat COVID-19, depending on your symptoms and your risk for severe illness.

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What if I'm sick when I give birth?

While you're in the hospital or birth center, you should wear a mask if you have COVID-19. But when you are pushing during labor, wearing a mask may be difficult. For this reason, your health care team should wear masks or other protective equipment.

How can I avoid passing COVID-19 to my newborn?

You can take the following steps while you're in the hospital or birth center and after you go home:

- Wear a mask when holding your baby, including during feeding. Do not put a mask on the baby's face.
- Wash your hands before touching your baby.
- Wash your hands before touching any breast pump or bottle parts and clean all pump and bottle parts after use.

If possible, let someone who is healthy help care for your newborn. The person helping should not be at risk of severe illness from COVID-19. This person can bottle-feed your breast milk to your baby after you pump. They should wear a mask and keep their hands clean.

How can I avoid COVID-19 in the future?

It's possible to get the virus again, even if you already had it. The best way to protect yourself is to get a COVID-19 vaccine and booster.

Remember: Talk with your ob-gyn about your symptoms and treatment options.

Learn more at acog.org/COVID-Pregnancy

ACOG
The American College of Obstetricians and Gynecologists

Vaccines During Pregnancy

Vaccines are recommended during pregnancy to protect against three serious illnesses: the flu, whooping cough, and COVID-19.

These vaccines can keep you healthy and help protect your baby after birth.

The flu vaccine is

- Safe for you and your fetus during any trimester of pregnancy
- Effective at preventing severe flu illness during pregnancy

How does it protect my baby?

The flu vaccine creates antibodies that are passed to a fetus, which protect against the flu until a baby can get the flu vaccine at age 6 months.

The whooping cough vaccine (Tdap) is

- Safe for you and your fetus
- Recommended between 27 weeks and 36 weeks of each pregnancy

How does it protect my baby?

The Tdap vaccine creates antibodies that are passed to a fetus, which protect against whooping cough until a baby can get a whooping cough vaccine at age 2 months.

The COVID-19 vaccine is

- Safe for you and your fetus during any trimester of pregnancy
- Effective at preventing severe illness from COVID-19

How does it protect my baby?

The COVID-19 vaccine creates antibodies that are passed to a fetus, which may protect against COVID-19 until a baby can get a COVID-19 vaccine at age 6 months.

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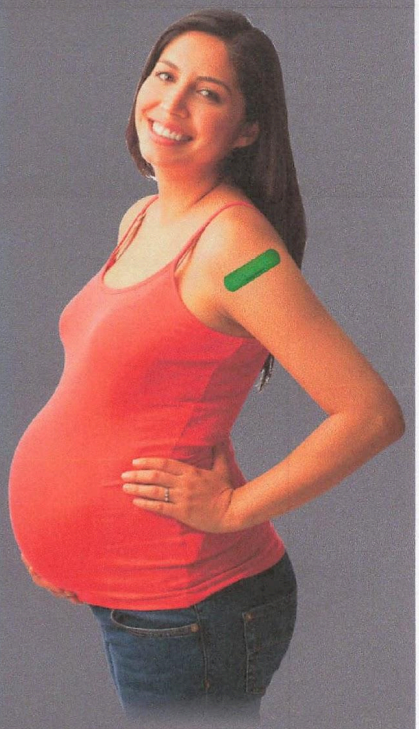
Pregnant? Top 3 Reasons Why **You Need the Flu Vaccine**

1. **The flu is a serious illness that can be much more severe during pregnancy. It can be life-threatening for newborns and pregnant women.**

2. **Getting the flu vaccine during pregnancy helps protect your newborn from the flu until the baby is old enough for his or her own vaccine.**

3. **The flu vaccine is safe for both you and your fetus. You cannot get the flu from the flu vaccine.**



Get the flu vaccine during **every pregnancy**, as soon as the vaccine is available. You can get the flu vaccine during any trimester.

This information is designed as an educational aid for the public. It offers current information and opinions related to women's health. It is not intended as a statement of the standard of care. It does not explain all of the proper treatments or methods of care. It is not a substitute for the advice of a physician. For ACOG's complete disclaimer, visit www.acog.org/WomensHealth-Disclaimer.

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Learn more at acog.org/Vaccine-Resources

Influenza virus ACOG recommendations for vaccine while pregnant comes around in Dec thru February every year and can have an impact on pregnancies. While it is uncommon that it will lead to hospitalization, it can make you feel awful. Flu meds like Tamiflu are safe to take while pregnant, preventing flu is more important. Our office buys about 50 flu vaccines every year and they are first come first serve for our pregnant patients. When we run out you are encouraged to see your PCP or local pharmacy.

Pertussis/Whooping Cough/TDAP vaccine is recommended for all pregnant women in every pregnancy. If you got the flu vaccine last year while pregnant and now newly pregnant, you could get it again this year. The goal of the TDAP vaccine is not to protect moms from pertussis rather to have the mom make lots of antibodies that are passively transferred to the baby in utero.

Vaccines that are safe and recommended in pregnancy is the Annual Influenza Vaccine and TDAP to prevent whooping cough. The flu vaccine is typically available in September/October and the TDAP is offered to all our patients between 30-36 weeks. If you get a vaccine while pregnant, your immune systems make antibodies that are transferred to your baby thru the placenta and their immune protected until they start their newborn vaccines which is not typically until 2 months of life.

What Is Pertussis?

Pertussis is a respiratory illness caused by the bacterium *Bordetella pertussis*.

Pertussis (also known as whooping cough) is a highly contagious respiratory illness that is spread by respiratory droplets released when an infected person coughs or sneezes.[1] Cases of pertussis have increased worldwide in 2024. As of August 10, 2024, there have been more than 10 000 cases reported in the US, compared with 2918 cases reported on the same date in 2023. This rise in pertussis may partly be due to decreasing immunity (protection from disease) among adults who received vaccination in childhood.

Common Signs and Symptoms of Pertussis

Symptoms of pertussis typically develop 5 to 10 days after contact with the pertussis bacteria. Common signs and symptoms within the first 1 to 2 weeks of infection are runny nose, low-grade fever (less than 100.4 °F or 38 °C), and mild cough in teenagers and adults; infants and young children may have brief pauses in breathing (apnea). After these early symptoms, people with pertussis frequently develop severe bouts of coughing, which often include a high-pitched and characteristic "whoop" sound when inhaling air. During or after coughing, individuals may vomit, have shortness of breath, and feel very tired. Bouts of coughing typically persist for 1 to 6 weeks but may last up to 10 weeks. Infants with pertussis do not cough but can have serious breathing difficulties such as apnea.

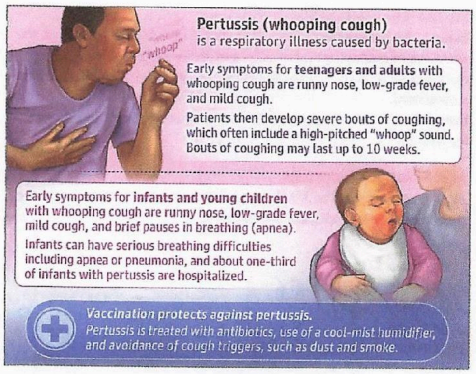
Potential Complications of Pertussis

Due to severe bouts of cough, teens and adults may have episodes of fainting, rib fractures, weight loss, and loss of bladder control, and some may develop pneumonia. Infants and children who have not received all of the recommended pertussis vaccines are more likely to have serious complications from pertussis. Approximately one-third of infants younger than 12 months who develop pertussis are hospitalized, usually for apnea or pneumonia. Rarely, these infants develop seizures or brain damage, and approximately 1% of hospitalized infants die of pertussis.

Diagnosis and Treatment

Pertussis should be suspected in people who have been in contact with a person with whooping cough and/or have had an acute illness for 2 weeks or longer with characteristic symptoms such as severe bouts of coughing, vomiting after coughing, or apnea in infants or young children. A clinician can confirm the diagnosis by sampling mucus from the nose or throat or by a blood test.

Pertussis is treated with antibiotics to decrease the severity of illness and reduce spread to others. Antibiotics should be started as soon as possible after diagnosis of pertussis. To decrease cough, patients should use a cool-mist humidifier and avoid irritants that trigger coughing such as dust, smoke, and chemical fumes. They should also be encouraged to eat small meals to decrease the risk of vomiting and drink lots of fluids to prevent dehydration.



Prevention

Vaccination protects against pertussis, although immunity may decrease over time. The Centers for Disease Control and Prevention (CDC) recommends that all individuals receive vaccination against pertussis, especially infants, young children, preteens, pregnant persons, and adults who did not receive pertussis vaccination during childhood. The diphtheria and tetanus toxoids and acellular pertussis (DTaP) vaccine is given to infants and children younger than 7 years. Children older than 7 years and adults receive tetanus, diphtheria, and pertussis (Tdap) vaccines. For individuals exposed to pertussis, the CDC recommends preventive antibiotics only for people living with a person diagnosed with whooping cough, for those at increased risk of developing severe disease (such as infants), and for those in close contact with individuals at increased risk of severe disease from pertussis.

FOR MORE INFORMATION

Centers for Disease Control and Prevention

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Conflict of Interest Disclosures: None reported.

1. Decker MD, Edwards KM. Pertussis (whooping cough). *J Infect Dis*. 2021;224(12)(suppl 2):S310-S320. doi:10.1093/infdis/jiaa469

RSV vaccine became available for the first time in 2023. The patient information sheet included is intended to educate parents on the potential morbidity and mortality that RSV presents to newborns. If your baby is going to be delivered in Nov thru April, you should strongly consider getting the RSV vaccine (Abrysvo) at a commercial pharmacy like Rite aid, Walgreens, or Safeway pharmacy. The time to get this vaccine is between 32-36 weeks. In clinical trials that included pregnancies between 24-36 weeks, there was a 2.5% risk for preterm birth with (Abrysvo) compared to 1.5% risk of preterm birth with placebo. The CDC therefore recommended that the maternal vaccine be administered between 32-36 weeks. Given the high morbidity and mortality from RSV in newborns and unproven cause but possible association of preterm birth with Abrysvo, ACOG recommends that Abrysvo be offered to all pregnant persons between 32-36 weeks. I strongly agree with this recommendation.

MATERNAL
IMMUNIZATION
— TASK FORCE —

Obstetric Care Professionals Recommend RSV Vaccine for Pregnant Individuals

RSV is a potentially serious and even deadly disease for young children and infants. That is why, collectively, the *American Academy of Family Physicians; American College of Nurse-Midwives; American College of Obstetricians and Gynecologists; Association of Women's Health, Obstetric and Neonatal Nurses; National Association of Nurse Practitioners in Women's Health;* and the *Society for Maternal-Fetal Medicine* unequivocally support the CDC's new recommendations for RSV vaccination during pregnancy to prevent lower respiratory tract infections (LRTI) in infants.

A single dose of Pfizer's bivalent RSVpreF vaccine is recommended for pregnant individuals between 32 and 36 weeks of gestation for seasonal administration between the months of September and January. RSV vaccination during pregnancy is a safe and effective tool to prevent severe LRTI in infants. Importantly, while there is a second RSV vaccine from GSK approved for use in older adults, currently the only RSV vaccine approved for use in pregnancy is Pfizer's bivalent RSVpreF vaccine, Abrysvo. Nirsevimab, a monoclonal antibody administered during the first week of life to infants, is another safe and effective option for preventing RSV LRTI. However, while nirsevimab is highly efficacious, it may not be widely available this fall or may not be preferred by a parent or health care facility as the primary intervention.

Either RSV vaccination during pregnancy at 32–36 weeks of gestation or nirsevimab immunization for infants aged less than eight months born during or entering their first RSV season is recommended. However, administration of both products is not needed for most infants.

Clinicians should counsel patients about maternal RSV vaccination and the monoclonal antibody nirsevimab as safe and effective ways to prevent severe LRTI caused by RSV in infants. Patient preferences should be considered when determining whether to administer the maternal RSV vaccine or not to administer the maternal RSV vaccine and rely on administration of nirsevimab to the infant after birth.

By recommending RSV vaccination during pregnancy or monoclonal antibody immunization for infants of pregnant people who were not vaccinated, we can reduce hospitalizations and deaths related to RSV LRTI among infants.

Additional Resources

Fleming-Dutra KE, Jones JM, Roper LE, et al. Use of the Pfizer Respiratory Syncytial Virus Vaccine During Pregnancy for the Prevention of Respiratory Syncytial Virus–Associated Lower Respiratory Tract Disease in Infants: Recommendations of the Advisory Committee on Immunization Practices — United States, 2023. MMWR Morb Mortal Wkly Rep. ePub: 6 October 2023. DOI: http://dx.doi.org/10.15585/mmwr.mm7241e1.

ACOG Practice Advisory: Maternal Respiratory Syncytial Virus Vaccination

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ACOG · American Academy of Family Physicians · American College of Nurse-Midwives · AWHONN Promoting the Health of Women and Newborns · NPWH The National Association of Nurse Practitioners in Women's Health · Society for Maternal-Fetal Medicine High-risk pregnancy expert

Pregnant? Top 3 Reasons Why **You Need the Tdap Vaccine**

1. **The Tdap vaccine prevents whooping cough. This is a very serious, often life-threatening disease for babies.**

2. **Getting the Tdap vaccine during pregnancy helps protect your newborn from whooping cough until the baby is old enough for his or her own vaccine.**

3. **The Tdap vaccine is safe for both you and your fetus.**

For the health of your baby:

Get the Tdap vaccine during **every pregnancy** between 27 and 36 weeks, as early in that window as possible.

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Complicated Pregnancies

Not all pregnancies are uncomplicated.
Having a pre-existing medical problem like diabetes or hypertension, or a complication in a previous pregnancy including pre-eclampsia or early delivery increases your risk of having complications during your pregnancy. High risk pregnancies will often involve extra testing to monitor your baby's overall wellness.

These tests can include kick counts and fetal monitoring of your baby's heart rate and fluid in the amniotic sac

Kick counts (AKA fetal movement counting) is the subjective counting of baby movements by their moms. I don't recommend that at some pre prescribed part during your pregnancy, that you need to start laying down and counting your baby's movement. You should typically notice your baby moving throughout the day on all days after 24 weeks. Initial fetal movement is usually noticed around 20 weeks. Although there is universal consensus opinion that women with decreased fetal movement should undergo further fetal assessment, available evidence does not support a clear fetal movement threshold or "alarm limit" indicating when risk of fetal injury or death is increased.

Non-Stress test (NST) was developed as a result of observations that the presence of two or more fetal heart rate (FHR) accelerations during a 20–30-minute period of monitoring, was good indicator for fetal well-being. This reassurance is good for about 72 hours which is why NST are typically done on Monday/Thursday or Tuesday/Friday at Diablo Valley Perinatology. NST's can be done at the hospital 24/7/365 when needed.

Amniotic Fluid Volume (AFV) is done by ultrasound looking at the fluid around your baby. Sonographic determination of the single deepest amniotic fluid pocket is the preferred method of AFV. This is barometer of placental function which is the
Please let us know your important medical history as early as possible. We may make changes in your care including earlier blood tests, additional monitoring of you or your baby, and earlier delivery.

Pregnancy #2 (and beyond)

Each pregnancy is different. Some changes you might notice compared to your first pregnancy: Increased fatigue, showing earlier, feeling baby earlier, feeling Braxton-Hicks contractions earlier. These are normal differences after a woman has already experienced pregnancy.

Birth Plan

This is an ongoing dialogue and our commitment to keep you safe. Many moms and dads may have specific goals and visions for what their baby's "birthday" looks like. Please ask us lots of questions and share your requests and know that our job is to keep you safe. Our vision is safe delivery with and baby on a mom's chest in the first hour of life, the "golden hour". This is an important opportunity to stabilize a baby's temperature and vital signs and begin a bond that will last forever. Being open to a safe experience is your first objective and being flexible with the birth experience realizing that labor outcomes can't always be controlled to exactly match a predetermined plan. There is no planning for childbirth is an article I recently read in the NY Times that was a thoughtful recounting of one moms birth plan.

Administrative questions

- **Disability**: Standard pregnancy disability starts at 36 weeks. Some women may have to stop working earlier or may be able to work longer. Contact your employer's Human Resources department to discuss disability requirements.
- If your company uses the California state EDD forms go online to http://www.edd.ca.gov/Disability/How_to_File_a_DI_Claim_in_SDI_Online.htm. After you complete your portion please contact the office by phone or email and leave a message for Debi with your 'R number' (provided when your portion is complete), and your planned last day of work.

Cord Blood Banking:

You have the option of saving the cord blood that is still in the placenta after your baby's birth.

Your baby's umbilical cord is made up of tissue and contains blood. Both cord blood and cord tissue are rich sources of powerful stem cells. Cord blood stem cells are currently used in transplant medicine to regenerate healthy blood and immune systems. These cells are being researched for their ability to act like our body's own personal repair kit and may be able to help our bodies heal in new ways

Reputable cord blood companies to consider:

Cord Blood Registry (CBR)
ViaCord
Stemcyte

If you decide to save your babies stem cells, please bring the kit to the hospital and let your nurse know of your intention to save the stem cells and we will take responsibility for collection

and helping with paperwork. A courier will come to the hospital to collect your babies stem cells for processing a few hours after your delivery.

Diseases can be treated with cord blood stem cells*

Leukemia

Acute Lymphoblastic Leukemia (ALL)
Acute Myelogenous Leukemia (AML)
Acute Biphenotypic Leukemia
Acute Undifferentiated Leukemia
Chronic Lymphocytic Leukemia (CLL)
Chronic Myelogenous Leukemia (CML)
Juvenile Chronic Myelogenous Leukemia (JCML)
Juvenile Myelomonocytic Leukemia (JMML)

Myelodysplastic Syndromes

Refractory Anemia
Refractory Anemia with Ringed Sideroblasts (Sideroblastic anemia)
Refractory Anemia with Excess Blasts
Refractory Anemia with Excess Blasts in Transformation
Chronic Myelomonocytic Leukemia (CMML)

Lymphoma

Hodgkin's Lymphoma
Non-Hodgkin's Lymphoma (Burkitt's Lymphoma)

Other Disorders of Blood Cell Proliferation

Anemias
Aplastic Anemia
Fanconi Anemia
Congenital Dyserythropoietic Anemia
Paroxysmal Nocturnal Hemoglobinuria (PNH)

Inherited Red Cell Abnormalities
Sickle Cell Disease
Beta Thalassemia Major (aka Cooley's Anemia)
Diamond-Blackfan Anemia
Pure Red Cell Aplasia

Inherited Platelet Abnormalities
Amegakaryocytosis / Congenital Thrombocytopenia
Glanzmann Thrombasthenia

Inherited Immune System Disorders
Severe Combined Immunodeficiency (SCID)
SCID with Adenosine Deaminase Deficiency (ADA-SCID)
SCID which is X-linked
SCID with absence of T & B Cells
SCID with absence of T Cells, Normal B Cells
Omenn Syndrome

Inherited Immune System Disorders: Neutropenias
Infantile Genetic Agranulocytosis (Kostmann Syndrome)
Myelokathexis

Inherited Immune System Disorders: Other
Ataxia-Telangiectasia
Bare Lymphocyte Syndrome
Common Variable Immunodeficiency
DiGeorge Syndrome
Hemophagocytic Lymphohistiocytosis
Leukocyte Adhesion Deficiency
Lymphoproliferative Disorders
Lymphoproliferative Disorder, X-linked (Susceptibility to Epstein-Barr virus)
Wiskott-Aldrich Syndrome

Myeloproliferative Disorders
Acute Myelofibrosis
Agnogenic Myeloid Metaplasia (Myelofibrosis)
Polycythemia Vera
Essential Thrombocythemia

Phagocyte Disorders
Chediak-Higashi Syndrome
Chronic Granulomatous Disease
Neutrophil Actin Deficiency
Reticular Dysgenesis

Bone Marrow Cancers
Multiple Myeloma
Plasma Cell Leukemia
Waldenstrom's Macroglobulinemia

Inherited Disorders of the Immune System & Other Organs

Cartilage-Hair Hypoplasia
Erythropoietic Porphyria
Hermansky-Pudlak Syndrome
Pearson's Syndrome
Shwachman-Diamond Syndrome
Systemic Mastocytosis

Inherited Metabolic Disorders

Mucopolysaccharidosis (MPS) Storage Diseases
Hurler Syndrome (MPS-IH)
Scheie Syndrome (MPS-IS)
Hunter Syndrome (MPS-II)
Sanfilippo Syndrome (MPS-III)
Morquio Syndrome (MPS-IV)
Maroteaux-Lamy Syndrome (MPS-VI)
Sly Syndrome (MPS-VII) (beta-glucuronidase deficiency)
Mucolipidosis II (I-cell Disease)

Leukodystrophy Disorders
Adrenoleukodystrophy (ALD)
Krabbe Disease(Globoid Cell Leukodystrophy)
Metachromatic Leukodystroph
Pelizaeus-Merzbacher Disease

Lysosomal Storage Diseases
Niemann-Pick Disease
Sandhoff Disease
Wolman Disease

Other Inherited Metabolic Disorders
Lesch-Nyhan Syndrome
Osteopetrosis

Solid tumors not originating in the blood or immune system

Neuroblastoma
Medulloblastoma
Retinoblastoma

* Reference: https://parentsguidecordblood.org/en/diseases

StemCyte
A Global Regenerative Therapeutics Company
13800 Live Oak Ave. Baldwin Park, CA 91706
888.885.4088 StemCyte.com

If you are scheduled for an induction, here are your instructions

DATE of Admission _____ to arrive in the AM _____ PM _____

Patients arriving for AM induction should expect to get in between 6-8am and for PM induction typically arrive at 7pm.

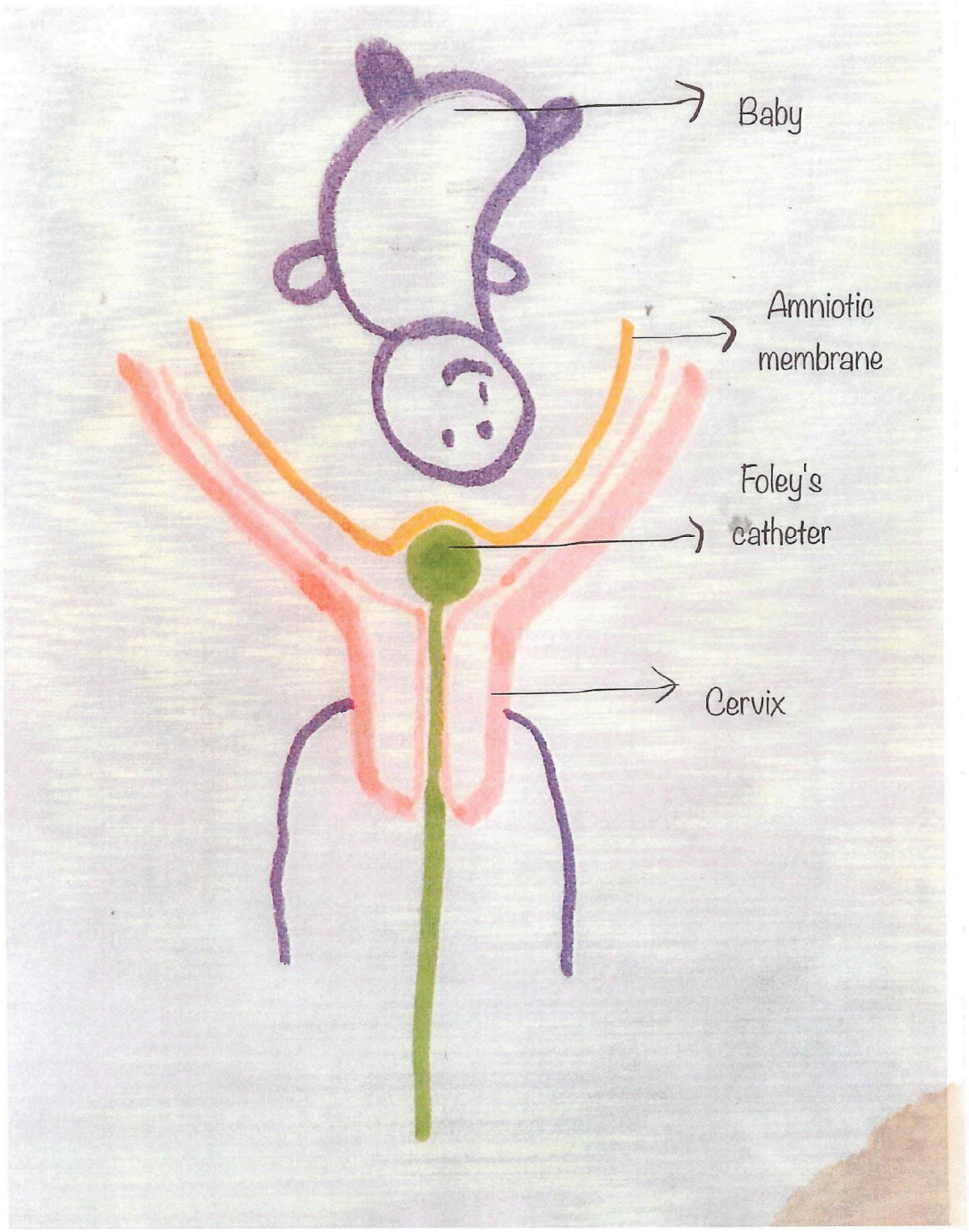
This date and time should always be considered a reservation and cannot be guaranteed. After 1 pm the day before your scheduled induction you will get a courtesy reminder to confirm the time you are to arrive in the morning (6, 7, or 8 am) or evening (7 pm) to begin your induction. Indications for induction are prioritized 24 hours in advance by the obstetrician assigned to L&D. Patients with the most urgent need are brought in first. If labor and delivery is too busy, you may receive a phone call that your induction may be delayed or not take place in which case your doctor will be notified. Otherwise, you should plan on arriving at the time you were given at your courtesy call. Medically indicated inductions are a high priority and rarely delayed.

What is labor induction?

Labor induction is the use of medications or other methods to bring on labor. Labor is the process whereby the uterus contracts rhythmically to move the baby out of the uterus and through the birth canal with the intention of having a vaginal delivery. Labor induction may be “medically indicated” and recommended if the health of the mother or fetus is at risk, but in many cases, labor is induced for non-medical reasons such as living far away from the hospital. This is called an elective induction. Inductions for health of the mom or baby can be done at any time but an elective induction should not occur before completing 39 weeks of pregnancy.

What is cervical ripening?

To prepare for labor and delivery, the cervix begins to soften, thin out, and dilate or “ripen”. Sometimes when an induction of labor is going to happen, the cervix needs ripening in preparation for labor. There are two principal methods of cervical ripening; one, which utilizes a small balloon and the other, involves medicine placed in the vagina. These two ripening options have equal efficacy in getting your cervix ready for labor and your doctor can explain which method they prefer. Patients coming at 7 PM for induction are usually coming the night prior to their induction for cervical ripening.


Baby
Amniotic membrane
Foley's catheter
Cervix

What initiates uterine contractions?

Oxytocin is the body's hormone that causes contractions of the uterus with the intention of getting you "into labor". A synthetic version of Oxytocin is available and administered through an IV at a physiologic rate to start labor. Contractions usually start slowly in about 30 minutes after oxytocin is given. Oxytocin is usually started at a low dose and then slowly titrated up at a physiologic rate to get your uterus contracting every 3-5 minutes, at which time the infusion is often kept at the same rate for the rest of your labor.

Labor signs

Call the office number or on-call doctor:

- If you think your water has broken
- For contractions: every 5 minutes, lasting about 1 minute, for at least an hour. (The 511 rule)
- For heavy bleeding, red blood or severe pain. Dark brown or red spotting is common after a cervical exam or may be a sign the cervix is starting to dilate and is not a cause for concern.
- If you do not feel normal fetal movement.

If your baby is breech, you are planning a cesarean section, or for certain other complications we may ask you to come for contractions or labor signs earlier.

- **Breast pumps**: we can write a prescription for your breast pump. Please contact your insurance company and email or call to leave a message for Dolly with the breast pump model name and your insurance contact information.

The FOURTH Trimester (Home from the Hospital)

Historically, patients have been offered a single 6-week post-partum visit, with little or no maternal support or patient contact before this visit unless the patient reported a complication. We want you to know that you are welcome to make an appointment around 3 weeks

postpartum (telehealth, phone support, or in person visit) if you have any concerns in with either physical or mental health. Key elements to optimal post- partum health are mental well-being, breast feeding support and chronic disease management.

Mom's who had any blood pressure concerns diagnosed prior to delivery, during the delivery or postpartum, should be seen within 72 hours of discharge for an office blood pressure check.

Other high-risk conditions like lupus, multiple sclerosis, psoriasis may flare in the post-partum period. Women with a history of post-partum depression may benefit from early contact.

ACOG categorizes the components of comprehensive post-partum care into seven domains: mood and emotional well-being, infant care and feeding; sexuality, contraception, and birth spacing; sleep and fatigue; physical recovery from birth; chronic disease management; and health care maintenance.

Interpregnancy intervals are often under discussed. Pregnancy is and breast feeding are nutritionally depleting, and it takes time to replenish these stores. Compared with interpregnancy intervals of at least 18 months, intervals shorter than 6 months were associated in a meta-analysis with increased risk of pre-term birth, low birth weight, and small for gestational age.

You have just completed a marathon and need lots of rest and hydration for recovery. You will be sore and tired which is why it is important to rest and take pain medicine if needed. We recommend that you take any pain medicine on a schedule and not just when in pain. In the hospital you were given Tylenol 650 mg every 6 hours alternating with Motrin 600 mg every 6 hours on alternating schedules, unless you refused your meds. This way you can take some pain medicine as often as every 3 hours. It is important to keep up with oral hydration to help support breast milk production. You may see more swelling in your feet and ankles after you leave the hospital, but this will go away in time. Sleep when you baby is sleeping.

Discharge and cramps: While the lining of your uterus heals completely, you can expect to have a bloody vaginal discharge called "lochia" for a few weeks. This will decrease and lighten in color to a pale pink, then a pale yellow or white discharge. You will have this lighter discharge for up to 4-6 weeks.

Any stiches placed will dissolve on their own and do not need to be removed. You don't need to check the stiches and they will be gone by your 6-week postpartum visit. If you think a stitch has come out too early, not to worry because the vaginal tissues are healing so long as the labial folds are not separated. Taking a "sitz" bath a few times a day can help your perineum (tissue between your vagina and rectum) heal by keeping the area clean and with a good blood flow. You can put a small amount of warm water in a tub or purchase a hat to put on the toilet bowel. Placing Epson salts or Aveno in the water can help healing.

Perineal pain can be effectively relieved with a multi-modal plan for pain meds. You can take 600 mg of Motrin/Advil/Ibuprophen every 6 hours potentially alternating with 650 mg Tylenol every 6 hours. You can take some type of pain med as often as every 3 hours (i.e., Motrin 6 am, 12 pm, 6 pm, 12 am with Tylenol 9 am, 3 pm, 9 pm etc.).

Education — Postpartum perineal pain and swelling are common for the first 7 to 10 days, and then typically improve. The duration of an individual woman's experience may vary depending on clinical circumstances. For example, second-degree obstetric lacerations or episiotomies typically heal by the third postpartum week; women with third- or fourth-degree lacerations may require four to six weeks. Education and appropriate reassurance, in the absence of concerning symptoms, are important in this period.

Concerns frequently raised by patients include:

- **Fear of suture removal** – Many women understand that they have perineal sutures, which they assume will need to be removed. This anticipated suture removal can cause significant anxiety and distress. We educate women that the perineal sutures are self-absorbing and that no further procedures are typically required.
- **Fear of bowel movement** – Understandably, many women are afraid that passing a bowel movement will damage the repair, be exquisitely painful, or both. We address this concern with information on pain management and prevention of constipation. (See 'Constipation prevention' below.)

- **Fear of sexual activity** – Many women are concerned that their vaginal introitus is permanently narrowed or that vaginal intercourse will be difficult or painful after obstetric laceration or episiotomy repair. We discuss that this fear is extremely common and reassure women that despite the initial pain, edema, and bruising they may experience following birth, these changes typically heal well. Women that they should be able to resume vaginal sexual function by approximately six weeks postpartum (depending on the status of the perineum). Women who are unable to resume predelivery sexual activity by three months postpartum should be evaluated. **Resumption of sexual activity** — There are no evidence-based guidelines regarding the postpartum resumption of predelivery sexual activity. Generally accepted criteria for resuming predelivery sexual activity include a fully healed perineum, emotional readiness, and use of contraception for heterosexual couples. We suggest that nothing be placed in the vagina for six weeks; by six weeks

postpartum, lochia and vaginal discharge have typically ceased, perineal lacerations have healed, and sutures have resorbed. The postpartum visit typically occurs within the first six weeks and allows evaluation of the perineum and discussion of contraception needs. The vaginal epithelium can be thin while breastfeeding because of the lower levels of estrogen when you are not menstruating. You may find that using a vaginal moisturizer like Halo Gyn (we sell this in our office, or we can send an order from our office to have it come to your home) 3x weekly starting after your postpartum check can decrease dryness. A good lubricant like Uberlube, Almost Naked, Sylk can help with more comfortable sex while breast feeding.

Hygiene — Following vaginal delivery, a squirt bottle and sitz bath are commonly recommended for perineal care. There are no data to guide sequence or duration of these interventions. We recommend that the woman use the squirt bottle any time she voids for as long as it improves comfort and applies ice to the perineum for 24 hours, with warm water soaks to start thereafter. This approach can be modified based on the woman's feedback; if ice feels better, then we have her to continue with ice packs for an additional 24 hours prior to initiating warm water soaks. In addition, some women find both ice packs and sitz baths helpful and alternate treatments. (See 'Pain management' below.)

The squirt bottle is used to irrigate the perineum with warm water during urination, which can help reduce external dysuria, stinging, or discomfort. A sitz bath, a warm shallow bath that bathes the perineum and buttocks, is commonly used to clean the perineum and to reduce pain and swelling, although data are limited. For sitz baths, we recommend each episode be of approximately five minutes in duration, for a frequency of four times daily, or after any bowel movement (particularly emphasized in women who have had anal sphincter lacerations). We instruct patients to ensure that the vaginal and rectal areas, including any sutures, are fully placed in the water. Of note, there are conflicting data on the optimal water temperature for pain reduction; women who find cold water more soothing are encouraged to use it [2,3]. Some clinicians advise adding Epsom salt (one-half cup salt to 1 gallon water) to the bath, although at least one study did not report a difference in perineal pain with its use [4]. We do not routinely recommend this, due to lack of evidence for efficacy. As it does not appear to be harmful, it can be done based on provider or patient preference.

Pain management — Comfort measures include topical treatments (e.g., cold or warm packs), topical anesthetics, and oral analgesics. The choice of treatments is chosen on an individual basis and generally initiated in a stepwise approach [5].

- **Topical treatments** – Topical treatments available to reduce perineal pain include ice packs or other cooling agents and witch hazel pads (i.e., hamamelis water). We suggest applying crushed ice to the painful perineal area for 10 to 20 minutes at a

time as needed. We recommend using an ice pack or bag of crushed ice and then wrapping it in a cloth such as a hand towel. Direct ice (ice or crushed ice in a plastic bag without wrapping) applied to the skin for longer periods has not been studied and may actually be harmful. In a meta-analysis of 10 trials comparing localized cooling treatments with no treatment or other forms of treatment (e.g., gel pads with compression, witch hazel, warm baths), women treated with ice packs reported decreased pain at 24 to 72 hours after birth compared with no treatment (risk ratio 0.61, 95% CI 0.41-0.91, one study) [6]. No impact on healing was reported. In a subsequent trial of 50 women with perineal pain following episiotomy, women treated with crushed ice to the perineum for 20 minutes reported improved pain relief compared with women who received routine care [7]. There was a direct correlation between the temperature reduction in the affected tissue and the pain relief experienced. As an alternate to crushed ice, frozen menstrual pads provide a convenient and less messy form of cryotherapy. These can be presoaked in water and then frozen to provide longer lasting cooling. Two subsequent trials reported reductions in postpartum pain scores, compared with usual care, after application of cold gel packs to the perineum for 10 to 20 minutes, which was sustained for up to two hours in one of the trials [8,9].
Topical witch hazel pads are often advised for perineal pain reduction. However, no trials comparing them with placebo are currently available. As they do not appear to be harmful, they can be combined with other treatments as desired.

- **Topical anesthetics** – Benzocaine spray is often offered to patients after vaginal birth to reduce perineal pain, although a meta-analysis of eight trials reported no difference in pain relief with other topical anesthetics (not including benzocaine) compared with placebo [10]. Additional limitations of this meta-analysis included short follow-up and limited assessment of patient satisfaction. One advantage of benzocaine spray is that it does not require touch for application. Some brands also contain skin moisturizers (aloe and lanolin) and menthol, which creates a cooling sensation. We have found this product helpful in reducing perineal discomfort, including the stinging sensation associated with perineal stretching, even if no laceration occurred. Anecdotally, benzocaine spray appears to reduce the discomfort associated with hemorrhoids as well.
- **Oral analgesics** – Oral analgesics most commonly used include nonsteroidal anti-inflammatory drugs (NSAIDs) and acetaminophen. For women with extensive vaginal or periurethral lacerations, underlying chronic pain syndromes, or obstetric anal sphincter injuries (OASIS), pain regimens that include short-term opioid analgesia can be required to achieve pain relief.
    - NSAIDs are our first choice for perineal pain relief, unless an individual woman has a specific contraindication. In a meta-analysis of 28 trials comparing NSAID (13 different agents) with either placebo or acetaminophen for early postpartum perineal pain, adequate pain relief at four hours was nearly twice as likely with the NSAID compared with placebo

and nearly 50 percent more likely for the NSAID compared with acetaminophen [11]. Women treated with an NSAID were also less likely to need additional pain medication at four and six hours compared with women who received placebo. Maternal adverse effects were minor (e.g., dizziness, headache, moderate epigastralgia) and not different from placebo treatment. Neonatal adverse effects were not studied. We suggest oral ibuprofen 600 mg every six hours as needed for pain relief during the first postpartum week. The maximum recommended dose of ibuprofen for women with normal renal function is 2400 mg in 24 hours. (See "NSAIDs: Therapeutic use and variability of response in adults", section on 'Issues in the therapeutic use of NSAIDs'.)

•Acetaminophen is our second-line agent for perineal pain relief based on the above meta-analysis and a different meta-analysis demonstrating improved pain relief with acetaminophen compared with placebo [11,12]. We suggest 650 mg every 6 hours as needed, not to exceed 3250 mg per 24 hours, for pain beyond that controlled with the scheduled ibuprofen (i.e., we prescribe acetaminophen in addition to the ibuprofen for women who require additional pain relief). While there are no direct comparisons of the dose effect for postpartum perineal discomfort, adequate analgesic effect has been demonstrated with the 500 to 650 mg dose [12]. (See "NSAIDs: Therapeutic use and variability of response in adults", section on 'Issues in the therapeutic use of NSAIDs'.)

•Aspirin is our third-line agent for postpartum perineal pain based on a meta-analysis of 17 trials including over 1100 women that found a single dose of aspirin, compared with placebo, reduced perineal pain for women with episiotomy [13]. As breastfeeding women were not included in the trials, the impact of aspirin on lactation or the neonate could not be assessed.

•Opioid analgesics are rarely needed and should be prescribed only if the patient has not achieved adequate pain relief with the above topical and oral treatments [5]. When opioids are used, we prescribe no more than seven days of non-extended-release medications. Patients whose pain is inadequately controlled, or worsening should undergo further evaluation to assess for infection or other causes of heightened pain. Patients are counseled about the risk of worsened constipation with opioid treatment, which could worsen perineal pain, and drowsiness. The potential risk of addiction is reviewed as well, although this risk is reduced with short-duration treatment.

•**Herbal and complementary therapies** – Additional treatment options for perineal pain include therapeutic ultrasound and plant-based ointments. In a meta-analysis of four trials comparing ultrasound, with or without pulsed electromagnetic therapy, with placebo, there was insufficient evidence to support use of ultrasound [14]. In a different trial, use of topical *Achillea millefolium*(i.e., arrowroot, yarrow, or yarrow root) or *Hypericum perforatum* (i.e., St. John's wort) ointments was associated with decreased perineal postpartum pain. However,

more data are needed on efficacy and safety before routinely prescribing these agents as other proven options are available [15]

Constipation prevention — Constipation during pregnancy and postpartum is common and is believed to result from smooth muscle relaxation caused by progesterone and other hormones [18,19]. Postpartum, this effect may continue for days to weeks. Following delivery, we treat women to optimize stool consistency. Maintaining soft bowel movements that can be passed without straining helps avoid pain with defecation, prevent disruption of perineal and rectal sutures. (See "Maternal adaptations to pregnancy: Gastrointestinal tract" and "Maternal adaptations to pregnancy: Gastrointestinal tract", section on 'Bowel, rectum, anus'.)

The optimal treatment is not known. General recommendations for postpartum constipation prevention typically include eating a high-fiber diet and drinking plenty of water, but these may not be adequate in the postpartum setting. Additional treatment options include fiber supplements, stool softeners, and/or laxatives. A meta-analysis of five trials including 1208 postpartum women compared postpartum laxative use with either placebo or laxative and fiber bulking agent [20]. None of the trials included any educational or behavioral interventions and the only trial that included a stool-bulking agent was focused on women with OASIS [20]. Laxative use decreased time to bowel movement and increased frequency of bowel movements, but also increased frequency of diarrhea and fecal incontinence [20]. The four trials comparing laxative with placebo did not assess pain with defecation or straining with bowel movements, but the trial that compared laxative with laxative plus fiber bulking agent reported no difference in pain on defecation. Impact of constipation on surgical repair breakdown rates is not known.

In discussing constipation prevention with postpartum women, prepregnancy and antenatal bowel habits are reviewed. For example, we inquire about any prior diarrhea-prone irritable bowel symptoms or other gastrointestinal disorders. In the absence of clinical evidence to guide care and in the absence of underlying gastrointestinal disease, we typically treat routine postpartum women with scheduled doses of stool softeners, and then progress through a step-wise treatment plan until the woman is able to pass a soft bowel movement every two to three days (table 1). We allow three days to determine if a treatment is effective or if the next agent in the list needs to be added. We typically advocate continuing the prior medications and adding the next agent in the list, rather than discontinuing the prior agent and moving on to the next. The order of agents is driven in part by the ease of use by the patient. A detailed review of these treatments is presented separately. (See "Management of chronic constipation in adults" and "Management of chronic constipation in adults", section on 'Initial management'.)

While there are many agents and combinations that can be used to prevent or treat constipation, we prescribe the following drugs, in an additive and stepwise fashion, until constipation is resolved:

- Oral docusate sodium (commercial name Colace) 100 mg three times daily.
- Oral senna 8.6 mg sennosides/tablet. Two tablets are taken nightly. Dose is decreased if diarrhea or abdominal cramping occurs.
- Oral bulk forming laxatives, such as psyllium seed (e.g., Metamucil), methylcellulose (e.g., Citrucel), calcium polycarbophil (e.g., FiberCon), and wheat dextrin (e.g., Benefiber). One dose as directed on the packaging daily.
- Oral powdered polyethylene glycol (e.g., MiraLAX) 17 g. Start with one daily dose and progress up to three times a day as needed.
- Oral magnesium hydroxide (e.g., Milk of Magnesia) 400 mg/5 mL: 30 to 60 mL/day once daily at bedtime or in divided doses two times daily.
- Oral magnesium citrate 1.745 g/30 mL (296 mL) taken as one bottle daily.

Cesarean POSTOPERATIVE CARE

Analgesia — Multimodal strategies for postoperative pain control after cesarean delivery should be employed to promote rapid recovery, enable the patient to care for her newborn, and minimize the need for postoperative opioids. Options for postoperative pain control (e.g., neuraxial opioids in patients with neuraxial anesthesia, regular doses of nonsteroidal anti-inflammatory drugs and acetaminophen, consideration of gabapentin and transverse abdominis plane block) are discussed separately.

In a prospective study of 621 patients in Brazil who had a planned cesarean delivery, the proportion using analgesia for surgery-related pain at 7, 30, 60, and 90 days after discharge was 95.8, 36.0, 15.5, and 17.0 percent, respectively; importantly, none used opioid analgesia after hospital discharge [7]. Severe pain in the early postoperative period, smoking, and presurgical anxiety were risk factors for prolonged postsurgical pain.

Bladder catheter — Removing the catheter as soon as possible (i.e., immediately after the skin is closed) minimizes the risk of infection. There is no evidence that routine urine culture or a trial of catheter clamping is useful before removal of the bladder catheter [8,9]. Although a meta-analysis reported that antibiotic administration prior to catheter removal reduced the rate of catheter-associated urinary tract infection [10], there were multiple limitations to these trials. We do not give antibiotic prophylaxis for bladder catheter removal.

Ambulation/diet — Early ambulation (when the effects of anesthesia have abated (in general within four hours of delivery) and oral intake (within six hours of delivery) are encouraged.

Early resumption of ambulation has been associated with faster intestinal recovery and reduction in ileus and venous thrombosis [11]. We suggest that patients ambulate for at least 5 to 10 minutes at least four times per day.

In meta-analyses, early intake of oral fluids or food after cesarean delivery was well-tolerated and had no adverse effects on time to bowel action/passing flatus or frequency of nausea, vomiting, paralytic ileus, or analgesic use [12,13]. Early oral intake may enhance the return of bowel function by stimulating the gastrocolic reflex. Chewing gum at least three times per day for at least 15 minutes appears to accelerate postoperative gastrointestinal recovery [14].

Lifting — It is common practice to advise women to avoid lifting anything heavier than the infant. Heavy lifting and lifting from a squat position confer the greatest increases in intraabdominal pressure [15,16]. These activities should probably be minimized in the first one to two weeks of wound healing, although there are no high-quality data regarding the impact of increased intraabdominal pressure on wound healing [17]. Some surgeons suggest that patients avoid lifting >13 pounds (6 kg) from the floor for four to six weeks following abdominal surgery to minimize stress on the healing fascia based on data that unsutured fascial wounds achieve 30 to 50 percent of unwounded tissue strength after four to six weeks [18]; the recovery of sutured wounds may be faster. However, no evidence-based guidelines are available, and waiting one to two months before lifting >13 pounds (6 kg) from the floor can be difficult for mothers with other small children. In fact, some evidence suggests that lifting 20 pounds, climbing stairs, and abdominal crunches generate no more intraabdominal force than rising from a chair [15].

Exercise — Women may slowly increase aerobic training activities, depending on their level of discomfort and postpartum complications. There is little evidence to support specific recommendations for aerobic and strength-training activities, and there is a lack of consensus among surgeons. (See "Exercise during pregnancy and the postpartum period", section on 'After cesarean delivery'.)
In a meta-analysis review, antepartum structured pelvic floor muscle training in early pregnancy appeared to prevent the onset of urinary incontinence in late pregnancy and in the first six months postpartum, but no clear benefit was observed when exercise was begun after delivery [19]. (See "Treatment of urinary incontinence in females", section on 'Pelvic floor muscle (Kegel) exercises'.)

Driving — Women should avoid driving if they are taking opioids or other sedatives or if they have pain with the normal activities required of a driver (e.g., turning the body or head, stepping on the brake/accelerator, steering).

Breastfeeding — Breastfeeding can be initiated in the delivery room. The usual drugs/procedures associated with cesarean birth are not a contraindication to breastfeeding. Information about use of drugs during breastfeeding is available in the Lexicomp drug interactions program included with UpToDate and at the LactMed drugs and lactation database. (See "Initiation of breastfeeding".)

Wound care — In a clean surgical wound, epithelialization typically occurs in the 48 hours after surgery. The superficial layer of epithelium creates a barrier to bacteria and other foreign bodies; however, it is very thin, easily traumatized, and gives little tensile strength.

Although data from randomized trials are limited, removal of dressings from clean or clean, contaminated surgical wounds within 48 hours of surgery (i.e., the period of epithelization) appears to have no detrimental effect on outcomes, compared with removal after 48 hours [20]. A trial involving 320 patients who underwent scheduled cesarean delivery reported no detrimental effects from dressing removal at six versus 24 hours post-surgery [21]. In most patients, we remove the initial dressing 6 to 24 hours after cesarean. Adhesive dressings should be removed slowly, in the direction of hair growth, at an angle of 150° to the skin, thus pulling the tape over itself [22].

There is no conclusive evidence of harm from postoperative showering within 48 hours of surgery in patients with closed surgical wounds [23].

We typically reapproximate the skin with an absorbable subcuticular suture, so removal is unnecessary (see "Cesarean delivery: Surgical technique", section on 'Skin closure'). If staples are used (e.g., patient's preference based on prior experience) and the skin incision is transverse, we remove the staples 4 to 6 days postoperatively but consider keeping the staples in up to 10 days postoperatively in women with risk factors for wound complications, such as those with diabetes mellitus or obesity. If the skin incision is vertical, the staples are left in place for at least five to seven days and longer in a patient at high risk of wound complications since there is more tension on the skin edges of a vertical incision. Adhesive strips may be applied after removal of the staples to help keep the wound edges approximated. In patients who scar easily, the scar that results from staples may be more pronounced than one produced by sutures, particularly if the staples are left in place for prolonged periods (>5 to 15 days, depending on the location).

Sexual activity — Sexual activity may resume when the patient is ready. In one study of nearly 400 cesarean deliveries in Australia, nearly 50 percent of patients resumed vaginal intercourse by six weeks postpartum [24]. Contraceptive plans should have been discussed during the pregnancy and must be discussed before the woman leaves the hospital. (See "Postpartum contraception: Counseling and methods".)

Nipple pain in the weeks after delivery can be a new problem managed with creams and nipple shields. The lactation RN's will work with you in the hospital at establishing a good latch which can be less traumatic to your nipples. There is a post-partum latch clinic at John Muir for in person consults. silverette nipple cups have been endorsed by many of our

patients for their healing properties. A compounded nipple cream prescription can be sent to a local pharmacy for ongoing pain with latch.

Dr jack Newman All purpose nipple ointment is for sore nipples and contains an anti-inflammatory, steroid, and antibiotic. It can be compounded and called in a local pharmacy or you can look up on the internet for a DIY option.

Baby Blues occurs in about 70% of new mom's starting a few days after the birth of your baby. The "baby blues" is common and can last for a few days to a few months. These feelings are probably related to changing hormones and fatigue. Common symptoms include: Beyond the Blues by Dr Bennett is helpful book for patients and partners to better understand postpartum mood changes.

crying, feeling tired, impatience, irritability, anxiety, restlessness, insomnia, sadness, poor concentration

Post-Partum depression occurs in about 1 out 7 new moms which is a more severe form of depression or anxiety. Many of the symptoms are similar to the baby blues but felt more intensely, last most of the day, happen on more days than not, make it hard for you to function and may affect your ability to care for yourself or your baby. If this is how you are feeling, please call the office to be seen so we can help with referrals for mental health and/or prescribe medications that are safe to take while breastfeeding.

AAP Safe sleep: The CDC estimates that nearly 3,500 infants die suddenly and unexpectedly every year in the US. These deaths are called sudden unexpected infant death syndrome (SUIDS). One of the best ways to reduce the risk of SUIDS is to place healthy babies on their backs when putting them down to sleep. Since the American Academy of Peds (AAP) recommended in 1992 that all babies sleep on their backs, deaths from SUIDS have dramatically declined. The safest place for your baby to sleep in on a baby bed placed close to your bed. A safety-approved crib with a firm mattress covered with a fitted sheet. Do not smoke or let anyone smoke around your baby. Make sure nothing covers your baby's head. Dress your baby in sleep clothing like a one-piece sleeper and do not use a blanket. Keep pillows, crib bumpers, and toys out of your baby's bed.

For some fun when you have a free moment

Welcome to parenthood and an entirely new genre of books and song you would not have known existed until this moment. A great recommendation to begin to appreciate this great art form is the classic children's book & fun album to listen to is Free to Be you and Me and in particular be sure to listen to Free to Be You and Me
& Parents are People

Reasons to call our office 925-935-6952 24/7/365

SAVE YOUR LIFE:

Get Care for These POST-BIRTH Warning Signs

Most women who give birth recover without problems. **But any woman can have complications after giving birth.** Learning to recognize these POST-BIRTH warning signs and knowing what to do can save your life.

POST-BIRTH WARNING SIGNS

Call 911 if you have:

- ❑ **P**ain in chest
- ❑ **O**bstructed breathing or shortness of breath
- ❑ **S**eizures
- ❑ **T**houghts of hurting yourself or someone else

Call your healthcare provider if you have:

(If you can't reach your healthcare provider, call 911 or go to an emergency room)

- ❑ **B**leeding, soaking through one pad/hour, or blood clots, the size of an egg or bigger
- ❑ **I**ncision that is not healing
- ❑ **R**ed or swollen leg, that is painful or warm to touch
- ❑ **T**emperature of 100.4°F or higher
- ❑ **H**eadache that does not get better, even after taking medicine, or bad headache with vision changes

Trust your instincts. ALWAYS get medical care if you are not feeling well or have questions or concerns.

Tell 911 or your healthcare provider:

"I gave birth on _____ (Date) and I am having _____ (Specific warning signs)."

These post-birth warning signs can become life-threatening if you don't receive medical care right away because:

- **Pain in chest, obstructed breathing or shortness of breath** (trouble catching your breath) may mean you have a blood clot in your lung or a heart problem
- **Seizures** may mean you have a condition called eclampsia
- **Thoughts or feelings of wanting to hurt yourself or someone else** may mean you have postpartum depression
- **Bleeding (heavy)**, soaking more than one pad in an hour or passing an egg-sized clot or bigger may mean you have an obstetric hemorrhage
- **Incision that is not healing, increased redness or any pus** from episiotomy or C-section site may mean you have an infection
- **Redness, swelling, warmth, or pain** in the calf area of your leg may mean you have a blood clot
- **Temperature of 100.4°F or higher, bad smelling vaginal blood or discharge** may mean you have an infection
- **Headache (very painful), vision changes, or pain in the upper right area of your belly** may mean you have high blood pressure or post birth preeclampsia

GET HELP

My Healthcare Provider/Clinic: _____ Phone Number: _____

Hospital Closest To Me: _____

AWHONN
PROMOTING THE HEALTH OF WOMEN AND NEWBORNS

This program is supported by funding from Merck, through Merck for Mothers, the company's 10-year, $500 million initiative to help create a world where no woman dies giving life. Merck for Mothers is known as MSD for Mothers outside the United States and Canada.