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Stanford HEALTH CARE
STANFORD MEDICINE

OB/GYN Partners for Health

Practice Information

We are pleased that you have chosen our office for your obstetric care. Our approach toward your care is to educate you and work together with you to make your pregnancy a wonderful and memorable experience. To help achieve this goal, please read the "Care and Treatment" information on our website www.stanfordhealthcare.org/OBGYN.

OB/GYN Partners for Health has partnered with Stanford Health Care, along with over 400 board certified primary care and specialty providers, to bring our patients access throughout the Bay Area. Our physicians admit patients to Alta Bates Summit Medical Center (ABSMC), a Sutter Health affiliate. It is a three-campus medical center with over 1,000 beds, serving Berkeley, Oakland, and surrounding communities. We admit to the Berkeley campus, or Alta Bates Medical Center, for inpatient Maternity and/or Gynecologic services and to the Oakland campus, or Summit Medical Center, for Gynecologic care.

ABSMC, Ashby Campus

2450 Ashby Avenue
Berkeley, CA 94705
(510) 204-4444

ABSMC, Summit Campus

350 Hawthorne Avenue
Oakland, CA 94609
(510) 655-4000

ABSMC Labor and Delivery Unit (510) 204-1572

Contacting Us

Non-Urgent Calls:

The main number for OB/GYN Partners for Health is (510) 893-1700. Please choose the appropriate extension to move through the voicemail. Messages can be left after hours with our answering service and phone calls will be returned on the next business day if not urgent.

If you are calling about an emergency, please listen for the prompt for our urgent line to speak with an OB/GYN Partners for Health operator. If urgent, the physician on call will be contacted.

After Hour Emergencies:

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You may contact an OB/GYN physician by calling the answering service at (510) 893-1700 for urgent concerns that cannot wait until regular office hours. When you call, describe your problem and the physician on call will return your call as quickly as possible. Ensure your telephone can receive calls from private numbers. Have your pharmacy information available and please make sure that they are open. Physicians on call are on duty for the entire practice therefore they may be in surgery or delivering a patient and may not be able to call back immediately.

If you are in labor and unable to reach the on call physician in a timely manner, call Labor and Delivery at (510) 204-1572. If you need to go to labor and delivery or the emergency room and your call has not been returned, please do so. Do not call the emergency number for medication refills or routine questions.

Please contact the office for all non-emergency concerns through the MyHealth Patient Portal so that your chart and medical history will be available: www.myHealth.Stanfordhealthcare.org.

Appointments with OB/GYN Partners for Health

You may schedule appointments before or after your office visit or by calling our office at (510) 893-1700.

Visits are typically scheduled as follows for an uncomplicated pregnancy:

- First appointment between 8 and 12 weeks
- Every 4 weeks until 32 - 34 weeks
- Every 2 weeks until 36 weeks
- Every week until delivery

Our physicians are dedicated to their patients. Your obstetrician may be called out of the office to deliver a baby or tend to an emergency when you are in for a visit. We ask for your understanding and patience. We would be happy to offer to reschedule your appointment or you may wait for your physician to return.

Laboratory Testing

OB/GYN Partners for Health is not affiliated with any laboratory. Most patients are required by their insurance to have blood work at a specific lab (Quest, LabCorp, etc.). If your insurance requests that you go to a different lab, please inform your physician. It is your responsibility to determine which lab is covered by your insurance. Lab results can be viewed on the MyHealth patient portal. You will be contacted about abnormal results. They will then be published to your patient portal. To access your chart more readily if you leave a voicemail message, please spell your first and last name, indicate which doctor you see, and your date of birth. Please leave a phone number(s) or email where you can

be reached and the best time to contact you. Results will not be left on an answering machine or with anyone other than you without your permission.

Childbirth Education and Hospital Tours

Register for classes early in your pregnancy. Waiting until third trimester to sign-up makes it unlikely that you will get the dates and times needed for your due date. OB/GYN Partners for Health invites you to attend classes at Alta Bates Medical Center, or any other medical center near you that offers childbirth classes.

Alta Bates Medical Center offers a variety of classes in childbirth education and hospital tours of Labor and Delivery and the postpartum unit, as well as Tours for Tots. For more information, contact their program at (510) 204-4461, or send an email to absmcparented@sutterhealth.org. Classes include Childbirth Preparation Series, One Day Intensive Childbirth Preparation, Baby Care and Breastfeeding, Childbirth Refresher, Big Brother/Big Sister Class, Grandparenting Class, Vaginal Birth After Cesarean Section, and even online classes if you cannot make it to the dates available or if the registration is filled up. By providing the most current pertinent and practical information, classes are designed to help new parents prepare for a healthy and fulfilling labor, birth, and newborn period. The small group classes are informative, interactive, and fun. Courses are taught by experienced registered nurses certified in childbirth education and by certified lactation consultants. To view course descriptions and available class dates, please visit www.absmcparented.org. It will direct you to a link where you can type in the topic pregnancy and the zip code 94705 to get the classes offered at Alta Bates Medical Center, Berkeley campus.

Anesthesia Information

Alta Bates Medical Center offers a free lecture entitled **Coping with Labor Pain.** This talk is offered to our expectant parents to provide information about pain relief during labor. A childbirth educator will present comfort strategies such as breathing and relaxation techniques as well as the partner's role for helping a laboring woman. The latter part of the class is a discussion of anesthesia options presented by an OB anesthesiologist. This lecture is offered free of charge. Please register online or call Parent Education (510) 204-4461 to confirm your registration. The information covered in this lecture is also included in our childbirth classes. Unfortunately, children are not allowed in this class.

Two anesthesiologists are available on the labor and delivery unit for your safety at all times. This service is provided by physicians in East Bay Anesthesiology Medical Group. More information about the group and obstetrical anesthesia is available at www.ebamg.com and www.ebamg.com/obstetrical-anesthesia.html.

Hospital Registration

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OB/GYN Partners for Health delivers babies at Alta Bates Medical Center. You should pre-register by your third trimester. You can pre-register on-line at www.altabatessummit.org/clinical/obform.html.

Cesarean Section Scheduling

If you are planning a cesarean section, it should be scheduled in the week prior to your due date to avoid going into labor and to be certain the baby's lungs are mature. A cesarean section in a high-risk pregnancy may be scheduled earlier if necessary. Once you and your physician agree on a date, please contact Beth Ramirez in order to schedule the surgery. She can be reached via email at BeRamirez@stanfordhealthcare.org or phone (650) 723-1580.

Billing

The global fee for a normal vaginal delivery without complications includes all routine pregnancy related office visits, vaginal delivery and the postpartum visit. The fee does not include laboratory testing, ultrasounds, or additional visits due to complications of pregnancy. It also does not include hospitalizations, anesthesia services for delivery, or pediatrician fees postnatally. These are additional services that are billed to your insurance carrier.

If you require a cesarean section, the surgeon and assistant surgeon have additional fees. Unfortunately, complications during a pregnancy or in delivery can occur. Any charges incurred for complications are not included in the global fee for a normal vaginal delivery.

Office visits for non-pregnancy related issues such as colds or urinary tract infections are typically not covered by your "global" fee and will be charged as a separate visit outside the global fee. Hospital visits outside of admission for delivery are billed separately as they are not included in the global fee.

If you have billing questions regarding anesthetic services, please contact East Bay Anesthesiology Medical Group, www.ebamg.com.

Insurance and Financial Agreement

If you have questions about insurance coverage, please call our office and ask to speak to the referral coordinator.

365 Hawthorne Ave, Suite 301 , Oakland, CA 94609
911 Moraga Rd Suite 201, Lafayette, CA 94549
100 San Pablo Towne Center, San Pablo CA 94806

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Directory

Phone and Fax Numbers:

Oakland Office:	Ph. (510) 893-1700	Fax: (510) 893-0110
Lafayette Office:	Ph. (925) 284-3040	Fax: (925) 283-6087

Alta Bates Summit Berkeley Hospital Pre-Registration: www.altabatessummit.org

Frequently called numbers

Alta Bates/Berkeley Campus

Hospital Information:	Ph. (510) 204-4444
Pre-OP Testing—Berkeley:	Ph. (510) 204-1520
Labor and Delivery—Berkeley:	Ph. (510) 204-1572
Antepartum Testing:	Ph. (510) 204-1352
Hospital Tours/Prenatal Classes:	Ph. (510) 204-4444

Summit/Oakland Campus

Hospital Information:	Ph. (510) 655-4000
Pre-OP Testing—Oakland:	Ph. (510) 869-8600
Carol Ann Read Breast Center:	Ph. (510) 869-8377

Laboratory Information:

Quest Diagnostics:	Ph. (866) 697-8378
www.questdiagnostics.com	
Labcorp:	Ph. (800) 888-1113
www.labcorp.com	
Palo Alto Pathology:	Ph. (650) 617-1849
www.paloaltopath.com	

Nor-Cal Imaging:

Oakland Imaging Facility: Ph. (510) 663-1950

Walnut Creek Imaging Facility: Ph. (925) 937-6100

Perinatal Diagnostic Centers

Some services are provided by Perinatologists who have additional specialty training in obstetrics. We work closely with them in managing high risk pregnancies to have the best outcome of healthy mom and baby. They provide various services including Genetic Counseling, High-Risk Pregnancy consultation, Ultrasounds, Chorionic Villus Sampling (CVS), Amniocentesis, and the Sweet Success Diabetes Program. Check with your insurance or provider to determine which physician and facility is contracted.

UCSF Benioff Maternal Fetal Medicine:

Ph. (510) 597-1863 Fax: (510) 601-7092

5730 Telegraph Ave Suite #117 Oakland, CA 94609

(Ultrasounds)

UCSF Benioff Maternal Fetal Medicine:

Ph. (510) 444-0790 Fax: (510) 869-6225

350 30th Street Suite #208 Oakland, CA 94609

(Consults and Sweet Success)

Alta Bates Perinatal Center:

Ph. (510) 869-8425 Fax: (510) 869-8426

350 30th Street Suite #205 Oakland, CA 94609

(Consults and Sweet Success for Medi-Cal patients)

Diablo Valley Perinatal:

Ph. (925) 891-9033 Fax: (925) 891-9066

110 Tampico Dr. Suite #100 Walnut Creek, CA 94598

Pregnancy Checklist

Mark your due date on your calendar at 40 weeks and count the weeks back from that date to determine your current gestational age or "weeks of pregnancy". You may also refer to the "pregnancy wheel" provided at your initial visit or download a pregnancy calculator app if you have a smartphone.

10 to 14 weeks

- **Prenatal vitamins**. Ideally pregnant women are advised to take prenatal vitamins before conception. The most important components are folic acid, iron, and calcium. Most prenatal vitamins do not include omega-3 fatty acids, which help promote a baby's brain development. Omega-3 fatty acids can be included in prescription strength prenatal vitamins or they can be purchased separately without a prescription.
- **Prenatal blood and urine tests.** Please make sure you go to a laboratory contracted with your insurance. 11 weeks is a good time unless instructed otherwise. If you have any vaginal bleeding, get your lab work done immediately to establish your blood type.
- **Genetic carrier screening of the mother.** Cystic fibrosis, Fragile X, SMA, Ashkenazi panel, Thalassemia, and Sickle cell testing are available. Your provider may recommend some of these screening tests based on your ethnic background or risk factors. If you screen positive as a carrier for any of these conditions, it is recommended that your partner be tested.
- **Genetic testing:**
    1. The **nuchal translucency (NT)** test is an ultrasound done between 11 weeks 2 days and 14 weeks 2 days. Your provider will refer you to the appropriate perinatal center based on your insurance carrier. Call the perinatal center as soon as possible to schedule this ultrasound. We recommend this to be scheduled as close to 12 weeks as possible to avoid the problem of any discrepancies in ultrasound dating. The NT will screen for genetic abnormalities such as Trisomy 18 and 21.
    2. **California Prenatal Screening test or the first trimester integrated screen** includes a blood test that must be drawn between 10 weeks 0 days and 13 weeks 6 days. This is best done at 11 weeks, at the same time and same lab that routine prenatal blood work is drawn. This test yields a risk ratio for Trisomy 18 and 21 when combined with the results of the NT.
    3. **Non-invasive prenatal testing (NIPT)** is a single blood test. This is more accurate than the California screening test. It can check the chromosomes of the fetus including the gender. It may not be a covered benefit by some insurance carriers.
    4. **For women over 35, NIPT** is strongly advised if you will be over 35 years of age of delivery. It is best after 10 weeks although 9 weeks is mentioned on the company brochures. Please also schedule genetic counseling with a perinatology office where the NT ultrasound is being performed, and they

will review the option of a CVS or amniocentesis as well, which is the most definitive option.

15 to 20 weeks

- **California Integrated Screen's** second blood test must be drawn between 15 and 20 weeks, but is best between 16 and 18 weeks. It is the last component of the three-part California Prenatal Screening (NT, 1st trimester blood test, 2nd trimester blood test) and yields a risk ratio for Trisomy 18 and 21.
- **Anatomy ultrasound** between 18 and 20 weeks, best at 20 weeks.
- **Amniocentesis** is advised for women over age 35 at delivery who want more definitive chromosome testing of the fetus, and is usually performed at 16 – 18 weeks.
- **Register for birth classes**.

24 to 28 weeks

- **1 hour glucose test** to screen for gestational diabetes and blood test for antibody screen and anemia. It is not necessary to fast before this test but recommended that you do not drink or eat 1 hour prior.
- **Rhogam** injection if you are Rh negative and your partner is Rh positive.
- **Tdap** booster vaccine is recommended with each pregnancy between 27 and 36 weeks to maximize passive antibody transfer to the baby. All close family members should also have a current vaccination.
- Choose a **pediatrician**.
- **Hospital pre-registration** via mail or online.
- Attend **birth classes**.

35 to 36 weeks

- Complete **disability forms** if you qualify and bring your electronic receipt to the office and give it to your provider's medical assistant**.**
- Attend a **hospital tour** and an **MD lead information session** (held at the hospital every other month—flyers are at the front desk).
- **Group B streptococcus culture** will be taken at your office appointment.

Other considerations:

- Thimerosal free **flu shot** with H1N1 is recommended for all women and family members.
- Sign tubal ligation **consent for sterilization,** if desired. Keep a copy of the consent in your delivery bag. This should be decided by 34 weeks if possible.
- Obtaining **cord blood and tissue stem cell collection kit** prior to delivery, if desired. The kits may be available at OB/GYN Partners for Health office.

Medication Use in Pregnancy

Medication should not be used in pregnancy unless necessary. Some women will have underlying conditions that require them to continue medication in pregnancy. Medications listed below have been shown to not cause birth defects. Most other medications fall into an "unknown category" meaning there have been no studies documenting their safety in pregnancy.

Medical Conditions Requiring Medication Use in Pregnancy

If you are unsure about continuing a medication in pregnancy, please contact our office to review your medial history. This can be done through the MyHealth patient portal, by phone, or office visit. *Do not discontinue any medication without consulting with your doctor.*

Asthma

Use your inhalers routinely or as needed. Asthma symptoms can worsen in pregnancy. Ventolin, Asthmacort, Proventil, Advair, Nasonex or Flonase help keep the breathing passages open. Claritan, Benadryl, Dimetapp, Zyrtec and Tavist are antihistamines that are safe during pregnancy. Let your doctor know if your asthma is not responding to your routine inhalers. Occasionally oral steroids may be necessary.

Depression

Your mental well-being is very important for a healthy pregnancy. If you are on anti-depressants you may continue them under the advice of your doctor. Safe mediations include Prozac, Zoloft, and Wellbutrin. Please monitor your mood and emotional symptoms closely for worsening of depression or post-partum depression.

Diabetes

If you have Type I or Type II diabetes before pregnancy, continue managing your blood sugars closely. Good control before pregnancy reduces the risk of fetal malformations. During pregnancy, *Sweet Success* at the perinatology, office will help manage your diabetes.

High Blood Pressure

Continue your blood pressure medication. Purchase a blood pressure cuff to use at home and record your values and bring the blood pressure readings to your doctor visit. Blood pressure medications commonly used during pregnancy include Nifedipine, Aldomet, Propanolol, and Labetolol. You may require a higher dose or change to different medication in pregnancy. Pre-eclampsia is more common in patients with preexisting high blood pressure.

Pre-Term Labor

Although there is no medication that stops labor completely, your doctor may prescribe Terbutaline, Nifedipine, or Ibuprofen for a short duration. If you are admitted to the hospital you may receive Betamethasone shots to help with fetal lung maturation and Magnesium Sulfate.

Thyroid Disease

Continue any regular thyroid medication (Synthroid, Thyroxine, PTU). Blood tests for thyroid may be monitored by your obstetrician, primary care doctor, or your endocrinologist during pregnancy. The thyroid medication dose may need to be adjusted.

The following medications may be taken safely during pregnancy. We recommend that you try non-drug treatments first. For example, if you have a headache, try lying down in a quiet, dark room. If you do not get relief, use the following medication guideline. If a prescription is necessary, an Rx will appear next to the medication. Always take according to manufactures directions listed on the bottle unless otherwise indicated. Ibuprofen and aspirin should not be taken on a regular basis unless directed by your physician.

Acne	Topical over the counter are allowed, Cetaphil wash, Clindamycin topical prescription
Allergies	Claritin, Zyrtec, Tylenol sinus, Chlor-Trimeton, Benadryl, Dimetapp, Tavist, Allegra, Flonase, Nasonex
Antibiotics	Ampicillin, Amoxicillin, Clindamycin, Macrobid, Keflex, Zithromax, Erythromycin
Antivirals	Zovirax, Valtrex, Acyclovir, Valcyclovir
Cold and Sinus	Tylenol Cold, Sudafed*, Actifed, Airborne, Theraflu, Nasalcrom, Dristan, Breathe Right strips, Nasonex, Flonase, Saline sprays, Mucinex
Cough	Robitussin DM, Robitussin Plain, Dextrmethorphan, Vicks Vapo Rub, Cepacol
Constipation Stool Softeners	Softeners - Benefiber, Colace, Metamucil, Citrucel. DOSS Laxatives - Miralax, Ducolax, Mild of Magnesia, Fleets Enema
Diarrhea	Imodium, Kaopectate
Headache	Tylenol, Fioricet, Eccedine for migraine, narcotics if necessary
Heartburn	Tagamet, Zantec, Pepcid, Tums, Rolaids, Protonix - rx
Hemorrhoids	Preparation H, Anusol HC, Tucks, Hydrocortisone cream or suppository, Analpram - rx
Indigestion	Mylanta, Tums, Rolaids, Maalox, Gas-X, Pepto-bismol
Itching	Benetryl, Aveno, Atarax - rx
Nausea	Vitamin B6 25 mg every 6-8 hrs with Doxylamine (Unisom) 10mg once or twice daily, Scopolamine patch - Rx, Reglan, Phenergan, Diclegis-Rx
Pain	Tylenol, Tylenol #3, Vicodin - rx
Sleeping	Benedryl, Tylenol PM, Ambien - rx, Sonata - rx, Unisom, Sominex
Sore Throat	Cough drops, Sucrets, Cepacol, Chloraseptic spray
Yeast	Monistat, Gyne-Lotrimin, Mycelex, Femstat, Diflucan - rx, Terazol - rx

Medication you should **NEVER** take during pregnancy includes: Accutane, Lithium, Tetracycline, Vibramycin, Minocycline. *Sudafed is not recommended in the first trimester, but Sudafed PE 10 mg is allowed. In the 2nd or 3rd trimester, regular Sudafed can be taken as long as you do not have high blood pressure.

Teratogen (Birth defect) Information

OTIS Pregnancy Risk Information - OTIS provides accurate clinical information to patients about exposures during pregnancy and lactation. http://mothertobaby.org/fact-sheets-parent/ or 866-626-6847.

National Pesticide Information Center at http://npic.orst.edu or 800-858-7378

Frequently Asked Questions in Pregnancy

What can I take for a headache?

Tylenol is safe to take for a headache, fever or any general discomfort. Follow the recommended dosage on the bottle. The maximum dose in a 24-hour period is 3gm or 3000mg. Many cold medications have Tylenol in them; read the label! If your headache does not go away with Tylenol, please contact us even if it is after hours. Headaches later in pregnancy can be a symptom of pre-eclampsia. If you suffer from migraines, try to take Tylenol at the first sign and rest in a quiet, dark place. If you have underlying migraines, you may need a narcotic.

What can I do if I have been exposed to chickenpox?

There is no danger to your baby if you have previously had chicken pox. If you are not sure, a blood test can determine if you have had chicken pox. If you are not immune and get chicken pox, please call your physician.

What do I do if I have been exposed to Fifth's Disease (Parvovirus B19)?

It is likely that you have had the disease as a child and are therefore immune. If you are not sure, a blood test can be done to determine your immunity. It is not likely that you will contract the disease with casual contact. Good hand washing and hygiene are important to prevent infection. Please call your physician if you have been exposed. More information is available at www.cdc.gov/ncidod/dvrd/revb/respiratory/B19&preg.htm

What should I do if I am exposed to Hand, Foot, and Mouth Disease?

HFMD is a common illness of infants and children and is characterized by fever, sores in the mouth, and a rash with blisters. It is caused by an enterovirus and does not harm a pregnant mother or the fetus. Good hygienic practices will prevent its spread.

How late in my pregnancy can I travel in an airplane?

Please discuss with your doctor if you plan to travel during the third trimester, as some physicians do not allow travel after 28 weeks. You should not fly in an airplane after your 34th week of pregnancy. When traveling, it is important to drink plenty of water and to get up and walk about the cabin of the plane every hour. Please check with your insurance company to make sure you are covered outside the local area should an emergency arise. Airport screening will not harm the baby, but the TSA will accommodate requests for pat down screening.

Can I sleep on my back or abdomen?

You may sleep on your back until the third trimester as long as you are comfortable. When your uterus is large enough to compress your major blood vessels causing hypotension (low blood pressure), you will become nauseous and dizzy. Placing a pillow under one hip should prevent these symptoms. You may sleep on either your left or right side. Sleeping on your abdomen does not harm the baby and can be continued if comfortable.

When can I expect to feel the baby move?

You can expect to begin to feel the baby move at about 20 to 22 weeks of pregnancy. You may not feel daily regular movements until 28 weeks of pregnancy.

Is it normal for my pelvis to ache?

Early in pregnancy it is normal to feel cramping as the uterus grows and discomfort as the ligaments stretch. During the second trimester, it is normal to feel pains in the pelvis as the uterus grows, your skin stretches, and the baby moves around. During the third trimester, it is common to have a backache and sciatica. Sciatica causes shooting pains down the back of the leg and buttocks. Toward the end of the third trimester, ligaments in the hips and pelvis loosen causing discomfort. The baby may kick nerves on the inside of the uterus causing shooting pains toward your upper abdomen or vagina/cervix. Areas of numbness may also occur on your abdomen. If you are concerned about preterm labor, please call your physician. You can try a maternity support belt to see if this relieves the pelvic pressure.

Is spotting normal in the third trimester?

It is common to have spotting or bleeding during the last month of pregnancy after vaginal exams or intercourse. This is caused by hormonal changes that cause the cervix to soften. It is also common to have slight bleeding in early labor. Call the office for heavy bleeding (like a period), prolonged bleeding, or bleeding associated with pain.

You say I am 20 weeks pregnant. How many months is that?

Obstetricians have standardized the duration of a pregnancy to 40 weeks. The first day of your last menstrual period is used to calculate your due date. Twenty weeks is exactly half way through your pregnancy or about 4 1/2 months along.

My dentist needs to take X-rays. Is that okay?

You should continue to care for your teeth in the normal manner. If X-rays are necessary, your dentist will shield the baby. Filling cavities or taking antibiotics if prescribed by your dentist is safe and desirable as poor dental health can increase dental disease and cause preterm labor. Ampicillin is the most commonly prescribed antibiotic and is safe during pregnancy. Lidocaine for pain relief can be used as necessary.

Can I paint or remodel the baby's room?

Many paints, glues and flooring materials can release toxic chemicals long after you complete a project. Ask for VOC-free" and "water-based" materials. Let your husband or someone else do the remodeling and painting. Avoid solvents and oil based paints. Keep the room well ventilated.

My feet are swollen. Is that normal?

Mild swelling of the ankles and legs is related to the normal and necessary increase in body fluids during pregnancy. To ease the discomfort, elevate your legs or lie down when you can. Wear comfortable shoes and avoid elastic-top socks or stockings. Drink at least sixty ounces of fluid each day. Support hose may help ease the discomfort.

Is it okay to have my hair colored, highlighted or permed? What about artificial nails? Can I get manicures or pedicures? What about spray tanning and teeth whitening?

There is no information that any of these procedures will hurt your baby. Please weigh any benefits against any unknown potential risks.

Will it hurt the baby if I don't take prenatal vitamins?

Taking prenatal vitamins with folic acid or folic acid alone during the first trimester may decrease the incidence of neural tube defects such as spina bifida. There is no data that taking vitamins after the first trimester benefits the baby.

I would like to take a hot bath. Is that okay?

Studies show that hot saunas during the first trimester may cause miscarriage. There is no evidence that baths up to 100 degrees Fahrenheit cause fetal harm.

I have a belly piercing. What should I do?

Remove the ring before it starts to stretch. If you want to replace it during the pregnancy, see www.pregnancypiercing.com.

I have a sinus infection. Can I take antibiotics?

Yes, the only antibiotic that you should absolutely not take in pregnancy is tetracycline. Avoid sulfa and quinolone antibiotics like Cipro in the third trimester. Zithromax is frequently prescribed during pregnancy and is safe.

Will higher elevations and altitude be harmful to the baby?

No, but if you have any difficulty breathing you should return to a lower elevation. Stay hydrated.

Is it okay to have sexual intercourse during pregnancy?

There is no evidence that sex causes miscarriage or premature labor in low risk pregnancies. The baby is inside the uterus surrounded by amniotic fluid and the placenta. You may be sexually active until labor starts unless your physician instructs you otherwise. Lubricants such as Astroglide or KY jelly may help. A small amount of spotting during the 24 hours following intercourse is common. Do not have any sexual activity if you have a placenta previa, preterm labor or your amniotic membranes have ruptured.

It feels as if my heart is racing. Is that normal?

Yes, it is common to have palpitations. Notify your physician if you have fainting spells.

What can I use to relieve the discomfort of hemorrhoids?

Use Anusol HC cream or Tucks medicated pads to relieve hemorrhoidal discomfort. Increase the fluids and fiber in your diet to decrease constipation. Use Miralax if you need a laxative. Soak in warm water.

I have varicose veins. Is there anything I can do to alleviate the discomfort and prevent them from getting worse?

Avoid long periods of standing or sitting. When sitting elevate your legs above the level of your hips. Try wearing support panty hose or a maternity support belt throughout the day. Exercise, such as walking 20 to 30 minutes daily, is also helpful. If you are experiencing uncomfortable vulvar varicosities, wearing maternity or bicycle shorts may help.

Should I get the flu shot?

All pregnant women should be vaccinated, regardless of their stage of pregnancy. The vaccine should be thimerosal (mercury) free. H1N1 is included with all flu shots and saves lives.

Is it safe to exercise?

Yes. In an uncomplicated pregnancy, we recommend exercise as it makes labor easier, decreases the incidence of preterm labor as well as cesarean section. If an exercise causes cramping, shortness of breath, or pain, then decrease the intensity or stop exercising and discuss with your doctor. You should be able to carry on a conversation while you exercise. It is not necessary to keep your heart rate below 140. Contact sports such as soccer, ice hockey, skiing, horseback riding, and water skiing are strongly discouraged. Scuba diving is not safe at any time during pregnancy.

When do I have to stop running or riding my bike?

You can run and ride your bike as long as you are comfortable doing so. Your ligaments will become softer and stretch after 28 weeks. If you have knee pain, you should discontinue running. Your balance will change during your third trimester, which may limit your ability to run or ride. Please use common sense and stop before it becomes a problem.

I drank wine, beer, or alcohol before knowing I was pregnant. Will that harm my baby?

The baby has different blood circulation very early in pregnancy. A small amount of alcohol before missing a period is very unlikely to hurt the baby. After you know that you are pregnant, avoid all alcohol.

I just had an ultrasound and they gave me a different due date. Is my baby due at a different time?

If the dates are off by more than 1 week in the first trimester or 2 weeks during the second trimester, the due date may be changed. The ultrasound machine does not know when you got pregnant. It is giving an estimate based on the size of the baby. If you have a large baby, it may appear that you are further along in your pregnancy. Babies can be smaller than dates and still be healthy. Your doctor will confirm your final due date.

What can I do about leg cramps?

Leg cramps are common during pregnancy, especially in the second and third trimester. The cause is unknown. Stay hydrated and try stretching more. Magnesium supplement may help. Increasing your calcium or potassium intake may also help. When you get a cramp, straighten your leg, and gently flex your toes back toward your shins. Try stretching and muscle massage prior to going to sleep as well.

What changes can happen to my skin in pregnancy?

It is common to have more acne during pregnancy. You may also develop a "mask" of pregnancy (darkening of the skin on your face) and a black line or linea nigra on the abdomen under the umbilicus. These changes are due to the increased hormones your body is producing. Other common changes are development of skin tags and more moles. Most of the changes resolve after the pregnancy. If you are concerned about abnormal growth of any moles, please see a dermatologist.

Should I avoid deli meats and hot dogs?

The March of Dimes website http://www.marchofdimes.com/pregnancy/nutrition_risks.html lists recommendations for food borne risks in pregnancy. The FDA lists Food At-A-Glace http://www.fda.gov/downloads/Food/ResourcesForYou/HealthEducators/UCM148940.pdf .

The recommendations for prevention of listeria include:

- Do not eat hot dogs and luncheon meats — unless they are reheated until steaming hot.
- Do not eat soft cheese, such as Feta, Brie, Camembert, “blue-veined cheeses,” “queso blanco,” “queso fresco,” and Panela — unless they’re labeled as made with pasteurized milk. Check the label.
- Do not eat refrigerated pâtés or meat spreads.
- Do not eat refrigerated smoked seafood — unless it’s in a cooked dish, such as a casserole. (Refrigerated smoked seafood such as salmon, trout, whitefish, cod, tuna, or mackerel, is most often labeled as “nova-style,” “lox,” “kippered,” “smoked,” or “jerky.” These types of fish are found in the refrigerator section or sold at deli counters of grocery stores and delicatessens.)
- Do not drink raw (unpasteurized) milk.

Ultrasounds in Pregnancy

Most patients have an initial scan at 6-8 weeks to verify and intrauterine pregnancy and the due date. An anatomy ultrasound is done between 18 and 20 weeks of pregnancy. The ultrasound is an evaluation of the uterus and developing baby. Sound waves are sent from a small hand-held device, which is moved across the abdomen to show pictures of the baby. Measurements of the baby's size will be taken and the amniotic fluid will be assessed along with the location and size of the placenta. The fetal anatomy is evaluated. Ultrasounds check for placental and fetal abnormalities but cannot detect all problems. Ultrasounds do not evaluate fetal genetic abnormalities. According to American Institute of Ultrasound in Medicine, ultrasounds detect approximately 2/3 of physical abnormalities in the fetus. You will receive pictures from the ultrasound (no videotapes).

Reasons for additional ultrasounds in pregnancy are:

- Twins
- Fundal Height measures big or small
- Known uterine fibroids that make measurement of the growth difficult
- Verify fluid status
- Verify position of the baby
- Estimate fetal weight
- Follow fetal growth curves (for example in women with high blood pressure

When are fetal echograms needed?

An echocardiogram is an ultrasound to view the four chambers of the heart and the flow of blood into and out of the heart. This ultrasound is performed by a perinatologist or a pediatric cardiologist. The ultrasound is performed between 18-22 weeks.

Indications for fetal echocardiogram include:

Maternal Indications:

1. Autoimmune Antibodies
2. Familial inheritance disorders (Marfan Syndrome)
3. First degree relative with congenital heart disease or a prior baby with a cardiac abnormality
4. Pregnancy conceived through IVF - studies show that fetuses conceived via IVF have a higher chance of a heart defect.
5. Metabolic Disease (pre-existing diabetes)
6. Teratogen exposure (retinoids and lithium)

Fetal Indications:

1. Abnormal cardiac screening examination
2. Abnormal heart rate or rhythm
3. Fetal chromosomal abnormality
4. Extracardiac abnormality: hydrops, increased NT, monochorionic twins, unexplained severe polyhydramnios (excessive fluid)

Pregnancy Information – Maternal and Fetal Changes

First Trimester (before 12 weeks)

Medical information

Prior to your first visit, please print out and complete the new patient forms with your health and demographic information on our website. It will save a lot of time at the office.

First appointment

Your medical history will be reviewed and your questions will be answered. If you have not had a recent examination, a physical exam with a Pap smear will be performed.

Vitamins

Pregnant women are advised to take prenatal vitamins. The most important components are folic acid, iron, and calcium.

- Folic acid helps prevent neural tube defects, or serious abnormalities of the brain and spinal cord. Folic acid may also decrease the risk of preterm delivery and low birth weight. We advise 0.4 mg to 1.0 mg of folic acid daily during the first 13 weeks of pregnancy. Folic acid, or folate, is a standard component of all prenatal vitamins.
- Calcium promotes strong bones and muscle cells for both mother and baby. Calcium also helps the circulatory, muscular, and nervous systems. Iron supports the development of blood and muscle cells for both mother and baby and helps prevent anemia.
- Iron may also decrease the risk of preterm delivery and low birth weight.

Most prenatal vitamins do not include omega-3 fatty acids, which helps promote a baby's brain development. Sometimes they are included in the prescription strength prenatal vitamins or they can be purchased separately without a prescription. Most nonprescription (OTC or over-the-counter) vitamins have similar formulations and may be less expensive than prescription vitamins. If you have a preference for a certain brand, please let the nurse know and a prescription can be called to your pharmacy.

Due date

It is helpful if you know the first day of your last menstrual period (LMP) or when you ovulated. A “nine month” pregnancy lasts 40 weeks starting from the first day of your last menstrual period (LMP). Your due date will be determined either from your LMP or by an ultrasound during the first trimester.

Standard laboratory tests in the first trimester

CBC (check for anemia), Blood Type and Antibody Screen, Rh status (positive or negative), Hepatitis B, RPR (syphilis), HIV, Rubella (German Measles) Antibody, Urinalysis and Culture, Hemoglobin A1C (screen for diabetes), and TSH (screen for thyroid issues), Varicella (chicken pox), and Vitamin D.

Genetic carrier screening tests of the mother

Genetic testing determines whether either parent is a carrier for certain genetic conditions. Genetic carrier testing is available as a panel that tests for multiple conditions or as an individual test for certain diseases. Frequently tested conditions include Cystic fibrosis, Ashkenazi Jewish panel, Sickle cell anemia, Fragile X syndrome, Spinal Muscular Atrophy, Hemoglobin electrophoresis, and Thalassemia. Your physician will review genetic carrier screening with you after you complete the genetic questionnaire.

Chromosomal Screening and Diagnostic testing of the baby

Prenatal testing will be discussed with your physician who will make a testing recommendation based on your age, personal and family history, and personal beliefs. For women 35 years of age or older at delivery, you may schedule genetic counseling to review options. Options for testing include a non-invasive screening test (NIPT) or a invasive diagnostic test such as amniocentesis or CVS. If you are under 35, consider the California Prenatal Screening test or non-invasive screening (NIPT). Genetic counseling is optional for all patients.

Birthing Classes

Please sign up for birthing, newborn, and breastfeeding classes early in your pregnancy, as you may not be able to take them at the time or place of your choice if you wait until the third trimester to register.

During the first trimester, you may be experiencing:

- Missed period
- Fatigue, sleepiness, no energy
- Heartburn, indigestion, bloating, excess gas
- Food aversions and cravings
- Emotional ambivalence, anxiety
- Headaches
- Nausea or vomiting
- Breast tenderness and enlargement
- Frequent urination

Baby changes include:

1st month (0-4 weeks)

- The fertilized egg grows rapidly
- The placenta begins to develop
- The heart and lungs begin to develop
- By the end of this month, the baby is ¼ inch long (smaller than a grain of rice)

2nd month (5-9 weeks)

- The baby's major organs and facial features begin to develop
- Fingers, toes, ears and eyes are forming
- Bones are starting to replace cartilage
- By the end of this month, the baby is about one inch long
- The heart begins to beat

3rd month (10-13 weeks)

- The baby's sexual organs develop by the end of this month
- The baby can also open and close its fists and mouth
- As this month ends, the baby is about four inches long and weighs over one ounce
- Warning signs: Please call our office immediately if you experience active bleeding, significant cramping, or trauma to your abdomen.

Pregnancy Information – Maternal and Fetal Changes

Second Trimester (12 - 28 weeks)
What to expect at the doctor visits:
During the second and subsequent visits, your urine will be tested by dipstick for protein (screening for pregnancy-induced hypertension) and glucose (screening for gestational diabetes). Your weight and blood pressure will be recorded. We will listen for fetal heart tones and answer questions.

Testing:
If you are under 35 years of age at delivery:
Chromosomal screening testing
If you did not do the NIPT test during the first trimester and are participating in the California Screening program, a second trimester blood test will be drawn between 15 and 20 weeks of pregnancy. This screening test will give a final Screening Risk Assessment to estimate the chance of your baby having Down syndrome (Trisomy 21), Trisomy 18 or Trisomy 13 as well as Neural Tube Defects. If your risk is negative but greater than 1:500, you should have the NIPT test and genetic counseling with possible amniocentesis.

Ultrasound
If you are under 35, you should schedule a routine anatomy ultrasound between 18 and 20 weeks. The ultrasound will check the baby for size, fetal anatomy and placement of the placenta. Your provider will refer you to the appropriate facility for your ultrasound based on your insurance and geographic location. They will also provide you with a referral slip to bring to your ultrasound appointment.

If you are over 35 years of age at delivery:

Ultrasound
If a NIPT test was normal and you do not want to have an amniocentesis, please schedule a detailed ultrasound with the perinatology office between 18 - 20 weeks. If you would like to have an amniocentesis, schedule an appointment for genetic counseling, a detailed ultrasound and amniocentesis between 16 - 18 weeks. Your provider will refer you to the appropriate facility for your ultrasound based on your insurance and geographic location.

Exams:
Your physician will begin measuring your fundal height (the top of your uterus) to ensure that your uterus is growing appropriately after 20 weeks. The top of the uterus is at the umbilicus (belly button) at 20 weeks. Usually, the fundal height, measured in centimeters, is close to your gestational age in weeks (plus or minus 2 centimeters) and increases until 36 weeks of pregnancy.

Blood Tests (between 24-28 weeks):

CBC - Anemia frequently occurs during the third trimester. You may need an Iron supplement.

One-hour glucola test - This test screens for gestational diabetes. It is not necessary to fast prior to the test, but it is recommended that you not eat or drink one hour prior to the test. The test involves drinking a sugar solution and have your blood drawn one hour later. If your blood glucose is greater than 130, you will need to do a three-hour glucose tolerance test (GTT) to diagnose the presence or absence gestational diabetes.

For the 3 hour GTT, it is necessary to fast 12 hours prior to the test and have your blood drawn 4 times. Two abnormal blood values indicate Gestational Diabetes. The Sweet Success Program at the perinatology group manages Gestational Diabetes.

28 weeks:

Rhogam is administered as an injection to prevent antibody response after amniocentesis and at 28 weeks of your pregnancy if your blood antibody type is Rh negative. After delivery, if the baby is Rh positive you will receive Rhogam again. It is not necessary to test your partner's blood type, but if you have your partner's blood type documented as Rh negative, you may not need Rhogam. Please discuss with your physician. Please refer to "High Risk Pregnancy Issues."

Cord blood banking - Information and collection kits may be available at our office or by calling the company directly. Cord Blood Registry and Viacord are the most commonly used providers of this service.

Tdap - The vaccine is recommended for all adults in contact with newborns to prevent transmission of pertussis, or whooping cough. It is recommended that you receive a Tdap booster during each pregnancy between 27 and 36 weeks gestation. In the third trimester, the vaccine gives passive immunity to the baby through the maternal blood. The baby will not receive the first vaccination until 6 months of age. No prescription is required.

During the second trimester, you may be experiencing:
- Formation of a linea nigra (a dark line running down your abdomen)
- At 18-22 weeks, you will usually begin to feel "quickening" or fetal movements
- Nasal congestion or nose bleeds or bleeding gums
- Increased appetite
- Mild swelling of hands and feet and leg cramps
- Lower abdominal aches, backaches, and constipation

Baby changes include:

4th month (14-18 weeks)
- The baby's heartbeat may now be audible with the use of a doppler (ultrasound)
- Eyelids, eyebrows, eyelashes, nails and hair are formed
- The baby is developing reflexes, such as sucking and swallowing

- Tooth buds appear
- The fingers and toes are well-defined
- The gender is identifiable
- By the end of this month the baby is about 6 inches long

5th month (19-23 weeks)
- A soft, downy "lanugo" (fine hair) covers your baby's body
- Hair begins to grow on its head
- A protective vernix (cheese-like) coating covers the fetus
- The baby now weighs about one pound and measures nearly 10 inches long

6th month (24-28 weeks)
- The baby's essential organs are formed
- The baby weighs 1-2 pounds and is about 12 inches long
- The eyes begin to open, fingerprints form
- The baby grows quickly from now until birth
- The organs are developing further
- The baby can hiccup
- The skin is wrinkled and covered with fine hair
- The baby moves, kicks, sleeps and wakes
- The baby can swallow and hear
- The urinary system is working

Pregnancy Information – Maternal and Fetal Changes

Third Trimester (28 weeks - delivery)

After 28 weeks

Kick Counts

You should be feeling the baby move daily. Start recording fetal kick counts. A fetal kick count form can be downloaded here:

www.lowmg.com/info/medinfo/ob/ob_book/fetal_kick_counts.pdf.

Hospital Tour and Preregistration

Pre-register on-line and schedule a tour. Please view our "Appointment and Delivery Information" PDF for the hospital contact information.

Pediatrician

Our community is fortunate to have many excellent pediatricians. Ask your friends or your physician for a recommendation. The pediatrician is the physician with whom to discuss nursing, circumcision, and the baby's health after birth. If you wish to interview pediatricians, this should be done early in the third trimester.

Group B Strep (GBS)

GBS is a bacteria that is naturally present in the gastrointestinal tract of 15-40% of women. If present in the vagina when the baby delivers, GBS may cause a serious infection in a newborn. To test for GBS, a culture is obtained between 35-37 weeks of pregnancy. Know your GBS status prior to delivery. If your test is positive for GBS, you have a history of group B strep in your urine or have had a previous baby infected with GBS, you will receive antibiotics at the hospital when you are in labor. The antibiotics help during labor only — they are not given before labor because the bacteria recolonize the vagina. More detailed information about GBS can be found at http://www.cdc.gov/groupbstrep/about/index.html

Exams

Your physician may check your cervix for dilation and/or softening during the last month of your pregnancy. You will be monitored for pre-eclampsia (Pregnancy Induced Hypertension or PIH) during the third trimester. Signs of pre-eclampsia include increased blood pressure, right upper quadrant abdominal pain, protein in the urine, severe headaches, significant swelling of the hands, feet or face.

Ultrasounds

Routine ultrasounds in the third trimester are not necessary in an uncomplicated pregnancy. Your physician may recommend additional ultrasounds to check for fetal growth, amniotic fluid quantity and fetal position if there are indications of concern in these areas.

Fetal Fibronectin (FFN)

The test is useful in ruling out preterm labor in patients between 24 and 34 weeks of pregnancy with regular uterine contractions. Although a negative test appears to be accurate in ruling out imminent preterm delivery (within 2 weeks), the clinical implications of a positive result have not been fully evaluated. The test is not used as a screening test for preterm labor.

Non-Stress Test (NST)

This test monitors the baby's heart rate and the uterus for contractions, and is based on the premise that the heart rate of a normal healthy fetus will temporarily accelerate with movement. These episodes of increased heart rate indicate a healthy fetus. An electronic fetal monitor is strapped to the mother's abdomen and a recording of the baby's heart rate is produced. This test can be performed during the last 10 weeks of pregnancy, once or twice per week. It is usually performed at Alta Bates Medical Center at the Antepartum Testing Center located on the main level adjacent to the gift shop. It takes approximately 30 minutes and most patients find it very reassuring and relaxing. NSTs are used in high-risk pregnancies with twins, high blood pressure, diabetes, or low amniotic fluid. Your doctor will determine if this test is necessary for your pregnancy.

In the third trimester, you may be experiencing:

- Abdominal pains and Braxton-Hicks contractions
- Shortness of breath
- Stronger fetal activity and larger movements
- Difficulty sleeping
- Swelling of hands and feet
- Itchy abdomen and the navel sticking out
- Frequent urination
- Colostrum or leaking breasts
- Increasing back and leg aches
- Hemorrhoids and increased vaginal discharge

Baby changes include:

7th month (29 - 32 weeks)

- This is a period of extreme growth and maturation for the baby
- By the end of this month fat begins to deposit on the baby
- The baby can suck its thumb, hiccup, cry, and can taste sweet or sour
- The baby can respond to stimuli (pain, light and sound)
- The placental functions begin to diminish
- The volume of amniotic fluid lessens

- The baby is about 14 inches long

8th month (32- 36 weeks)

- The baby is starting to see and hear as the brain matures
- Excluding the lungs, most systems are well-developed
- By the end of this month, the baby is about 18 inches long and weighs about 5 pounds

9th month (37- 40 weeks)

- The lungs are maturing this month
- The baby adds about ½ pound per week
- The baby may weigh nearly 7 pounds or more and be about 18-20 inches
- The baby kicks and stretches as it gets bigger and there is less room
- Fine body hair disappears
- Bones harden, but the bones of the head are soft and flexible for delivery
- The baby settles into a position for birth

Screening Genetic Tests of the Baby

You and your partner should decide how much information you want regarding the chromosomes of the baby. A screening test (non-invasive) does not mean the baby has the condition if you screen positive. A screening test is simply used to determine who may be at high risk and need a diagnostic (invasive) test. Chorionic Villus Sampling (CVS) and Amniocentesis are diagnostic tests that examine fetal chromosomes for the condition and are close to 100% accurate.

It is important to note that maternal as well as paternal age plays a role in assessing one's risk of chromosomal abnormalities. Advanced maternal age is set at 35 years and advanced paternal age is set at 40 years by some criterion.

I. California Screening Program

The California Prenatal Screening Program is a set of optional screening tests offered to all pregnant women to screen for certain genetic defects. A screening test is a method of determining who is at risk for a condition that may warrant further diagnostic testing. This screening test is a non-invasive test and carries no risk to you or the baby. The test does not detect 100% of birth defects. Only a diagnostic test can tell if the fetus actually has a specific birth defect. The California Prenatal Screening Program screens for Down syndrome, Trisomy 18, anencephaly, open spina bifida, abdominal wall defects and Smith-Lemli-Opitz Syndrome (SLOS). There are 3 components to the CA Prenatal Screening Program which are detailed in the Prenatal Patient Booklet available online at: http://www.cdph.ca.gov/programs/pns/Pages/default.aspx. These components can be combined for the most accurate screen, or done individually and still yield some useful screening information. The three different tests available are described further below.

1. Blood test drawn at 10 weeks to 13 weeks 6 days
2. Nuchal Translucency (NT) ultrasound from 11 weeks 2days to 13 weeks 6 days
3. Another blood test drawn at 15 to 20 weeks

What is the Nuchal Translucency (NT)?

An ultrasound is performed between 11 weeks 2 days and 14 weeks at a Prenatal Diagnosis Center to measure the clear ("translucent") space in the tissue at the back of the developing baby's neck. This measurement assesses the baby's risk for Down syndrome and Trisomy 18. Babies with abnormalities tend to have more fluid accumulated at the back of their necks during the first trimester, causing this clear space to be larger. Based on statistical probability, the measurements are used along with the maternal age and maternal blood tests to calculate the baby's chances of having Down syndrome or Trisomy 18. A thickened NT can also be an indicator of a heart defect. If your NT is >2.5mm, it is recommended that you have a fetal echo ultrasound between 18-22 weeks since this finding may be associated with heart defects.

What Abnormalities can the California Screening Program detect?

Down Syndrome - A chromosome abnormality that causes mental retardation and certain types of birth defects. It is due to an extra copy of chromosome 21- three copies (trisomy) instead of the normal two copies of this particular chromosome are present. Down syndrome affects approximately one in every 800 newborns. The chance of having a pregnancy affected with Down syndrome increases with increased maternal age due to the quality of one's eggs.

Trisomy 18 - Trisomy 18 results when the fetus has three, instead of the normal two, copies of chromosome 18. Occurrence increases with maternal age and it causes multiple birth defects along with profound mental retardation. Few Trisomy 18 infants survive their first year.

Open Neural Tube Defects (ONTD) - A major birth defect where the bones of the spine fail to close around the spinal cord at 6 weeks. This may cause paralysis and other problems of the central nervous system such as loss of bowel and bladder function. Taking folic acid pre-conception helps decrease the risk of ONTD. Examples of ONTD are spina bifida and anencephaly (incomplete development of the brain, results in death).

Abdominal Wall Defects – A major birth defect where the abdominal wall fails to close and internal organs may lie external to the fetus' torso in a sac. Examples include omphalocele and gastroschisis.

Smith-Lemli-Opitz Syndrome (SLOS) - A very rare metabolic defect in which babies cannot make cholesterol normally, causing both mental retardation and physical defects. Screen positive results for SLOS can also indicate increased chances of other congenital abnormalities and fetal demise.

What are the three options that are available under the California screening program?

- **Quad Marker Screening -** The Quad Marker Screening test is a screening test for pregnant women during the second trimester (between 15 and 20 weeks) of pregnancy who choose to do *only* a second trimester blood test. The detection rates for this test are 80 out of 100 Down syndrome and 67 out of 100 for Trisomy 18.

- **Serum Integrated Screening -** This is a combination of a first and a second trimester blood test that detect 85 out of 100 for Down syndrome and 79 out of 100 for Trisomy 18. This series of two blood tests *does not* include an ultrasound (NT).

- **Full Integrated Screening -** This includes the Serum Integrated Screening with nuchal translucency (NT) ultrasound and detects 90 out of 100 for Down syndrome and 81 of 100 for Trisomy 18. This is the best test the State of California has to offer as a screening test.

All three of the above screening tests detect

- Anencephaly: 97 out of 100
- Open Spina Bifida 80 out of 100
- Abdominal Wall Defects 85 out of 100

- Smith-Lemli-Opitz Syndrome (SLOS) 60 out of 100

What is a Preliminary Risk Assessment?

First trimester results are delivered as a ratio to express your baby's chances of having Down syndrome or Trisomy 18. It is based on your age, the baby's age, the nuchal fold measurement, and your blood samples done in the first trimester. A normal result (sometimes called "screen negative") is not a guarantee that your baby is normal, but it suggests that a chromosomal problem is unlikely. Nor does an abnormal result (sometimes called "screen positive") mean that the baby has a chromosomal problem -just that it has an increased risk of one. (Even so, most "screen positive" babies still end up being normal.)

Based on the screening risk, you can decide if you want to have diagnostic testing done. Individual parents-to-be have different feelings on what is an "acceptable" risk for them. The California State test considers a first trimester risk of 1 in 100 for Down syndrome as a "negative" test. A risk of 1 in 50 is a negative test for Trisomy 18. Our affiliated perinatal diagnostic centers offer genetic counseling and the option of additional testing if the risk is greater than 1 in 500.

Only you can decide what your comfort level is for accepting or declining further testing. With the addition of the second trimester blood work, the ratio of your individual risk may increase, decrease, or stay the same. In order to get to the 90% detection rate for Down syndrome and 81% detection rate for Trisomy 18, you have to complete the second trimester blood work. If you stopped all testing after the first trimester blood work and NT, you are only at the 75% detection rate for Down syndrome. The cut off values change with the addition of the second trimester labs. The state considers 1 in 200 a negative risk for Down syndrome and 1 in a 100 a negative risk for Trisomy 18.

A detailed ultrasound can provide additional information, but definitive tests that can diagnose a chromosomal defect are chorionic villus sampling (CVS) and amniocentesis.

What does it mean that the Full Integrated Screening test is "90% accurate?

You may have read that the results of this test are 90% accurate in detecting your risk of having a baby with Down syndrome. That means that if your baby has Down syndrome, there's a 90% chance that the test will pick that up and give a "screen positive" result that indicates further testing is recommended. It also means there is a 10% chance that the test will miss the Down syndrome and give a "screen negative" result and diagnostic testing will not be recommended. This does NOT mean that a "screen positive" baby has a 90% chance of having Down syndrome. It just means that 90% of babies who have Down syndrome will have screening results that are suspicious enough to recommend diagnostic testing. And 10% of babies who have Down syndrome will be shown to be at normal risk—that is, the results will be falsely reassuring. This screening test also has up to a **5% false positive rate**. (A "false positive" result is when a test suggests there may be a problem when, in fact, there is no problem.) In this case, a 5% false positive rate means that 5% of all the babies with normal chromosomes who are tested will be "screen positive" meaning that the test will show them to be at an

increased risk even though they are normal. Considering this "false positive" result, their mothers may opt for invasive diagnostic testing that they otherwise might not have done.

What are the advantages of the Full Integrated Screening?

The advantage to these screening tests is that they can give you a better estimate of your baby's risk for chromosomal problems at an early date without subjecting you to the small risk of miscarriage from a more invasive diagnostic test like CVS. If the risk is low, you can find out as soon as possible and may be relieved. If the risk is high you can decide whether to have CVS (done between 10 and 13 weeks 6 days), or amniocentesis at about 16 weeks. These tests give a definitive answer while still early in the pregnancy. The NT is noninvasive and carries no more risk than an ordinary ultrasound. Even if you forgo diagnostic testing (CVS or amniocentesis), you can get more information about your baby's health and development by following up with a second trimester ultrasound at 18 to 20 weeks that looks for "soft markers" of chromosome disorders, such as short limbs, a bright dot in the heart, bright intestines, cysts in a portion of the baby's brain, and certain problems in the kidneys.

What's the downside of these screening tests?

Like any screening test, they are not diagnostic—that is, they cannot tell you definitively if your baby has normal chromosomes. In some cases, they will lead the patient towards additional intervention. In other cases, the tests will be incorrectly reassuring.

Is there any other information that is gained from these screening tests?

The maternal blood samples test for PAPP-A, hCG, AFP, uE3, and Inhibin. Your doctor will look at the actual numbers. There is some data that abnormal values are associated with an increase risk of pre-eclampsia, growth restriction, pre-term delivery, and fetal loss. If appropriate, your doctor may order additional ultrasounds in pregnancy to further evaluate fetal growth.

What is the cost of the various components of these tests? What if my insurance does not pay?

Because this procedure is separate and additional from your global obstetric services, it may not be a covered benefit. Since the California Prenatal Screening Program offers these tests, they are usually covered by insurance – but not always, so it is important to check with your insurance company. If you screen positive, the initial fee covers additional diagnostic testing (genetic counseling, Level II ultrasound, and CVS or amniocentesis). The nuchal translucency ultrasound for the Full Integrated Screening is not included in the California Prenatal Screening Program fee. *The current procedure code for NT is 76813 (singleton) and 76814 (twins). The diagnosis code is 655.83.*

II. Non-Invasive Prenatal Screening or Testing (NIPS or NIPT)

Non-Invasive Prenatal Screening (NIPS or NIPT) tests can be used to screen for common chromosome abnormalities. The results of these tests can indicate whether trisomy 21 (Down

syndrome), 18, 13, or sex chromosome abnormalities are highly suspected in your pregnancy. These tests are not diagnostic – both false positive and false negative results have been reported. The results can reveal if you are having a boy or a girl. This test does not screen for all chromosomes and is NOT a replacement for CVS or amniocentesis.

What is the NIPT and how does it differ than the California Screening Program?

This is a blood test usually done after 10 weeks on a sample of the mother's blood. It analyzes the amount of cell-free fetal DNA picked up from the maternal blood sample. It can detect an increased amount of chromosomes 21, 13 and 18, which are associated with Trisomy 21 (Down syndrome), Trisomy 13 and Trisomy 18. It can also detect the sex chromosomes. The detection rates of chromosome 21, 13 and 18 abnormalities are significantly higher than the California Screening Program. It is important to remember it is still a screening test and not a diagnostic test.

Who should be tested?

This test was developed and tested for pregnant women with one or more of the following:

- Advanced maternal age (35 or older)
- Fetal ultrasound abnormality suggestive of chromosomal abnormality
- Positive 1st or 2nd trimester California Screening Test
- Personal or family history of Down syndrome.

Can I do the test if I am under 35? What is the cost?

Yes, you can do the test, though your insurance company will often deny coverage, especially if you are not high risk. Check your cost with the company that will do the test. *If you plan to check with insurance for coverage, the code is V28.9.* Some of the companies will discount the fee (often $0-$200) if it is not covered by insurance. Be sure you know your financial responsibility before doing the test, as it could be very expensive.

When can I have this test?

Most companies recommend doing this test after 10 weeks. Results are available in about two weeks. Genetic counseling is available to further discuss the risks, benefits and alternatives of the various prenatal screening methods in this group of high risk women for whom this testing may be considered.

How are the test results given?

The test results are given as low risk or high risk. The test has a sensitivity of approximately 99.1% and a specificity of 99.9%. The false positive rate is 0.2% for Down syndrome and trisomy 18 and 1% for trisomy 13, both of which are lower than the California Screening Program. For this reason, CVS or amniocentesis should be considered for any positive result.

How do I interpret a positive California NT Screening test and a negative NIPT?

Multiply the result by 72. If you have a 1 in 80 risk of Trisomy 21 with the California Prenatal screening test, the new risk becomes 1 in 5760. With a risk of 1 in 80 (1.25% chance of Down

syndrome), there is a 98.75% chance the baby does not have Trisomy 21. With the addition of a negative NIPT, the risk decreases to .01% chance of Down syndrome.

What if I have a positive result?

A diagnostic test (CVS or amniocentesis) is recommended to confirm this blood test.

Does the NIPT test for other conditions?

Right now, this blood tests for Chromosomes 21, 18, and 13. It also reports on the sex chromosomes and some labs are reporting on abnormalities of the sex chromosomes. This test does not detect all of the types of chromosome problems that genetic amniocentesis or CVS can detect.

Can it detect the sex of twins?

Some companies can detect the sex of twins. (Harmony, MaterniT21, and Verify)

Can it be done if donor egg was used?

Yes, only MaterniT21 or Verify can be used if your pregnancy involved a donor egg.

	informaSeq **Integrated Genetics**	**MaterniT21** **Sequenom**	**Panorama** **Natera, Inc**
What types of chromosome abnormalities can be detected?	Trisomy 21(Down syndrome), Trisomy 13 & 18 45, X; 47; XXY, XXX, XYY	Trisomy 21(Down syndrome), Trisomy 13 & 18 45, X; 47; XXY, XXX, XYY; Trisomy 16 & 22 8 microdeletion syndromes	Down syndrome Trisomy 13 & 18 45, X; 47; XXY, XXX, XYY; Triploidy 5 microdeletion syndromses
Possible results	Aneuploidy detected (high risk) Aneuploidy suspected No aneuploidy detected (low risk)	Positive (high risk) Negative (low risk)	High risk (e.g. >99/100) Low risk (e.g. <1/10,000)
Blood draw location	LabCorp	Pathology, Inc Quest Diagnostics	Bioreference Pathology, Inc Labcorp (draw station only at Los Olivos)
	available if under 35		available if under 35
Lab contact number	(800) 848-4436	(877) 821-7266 option 3	877-476-4743

Where do I have my blood drawn?

It depends on the company. Some companies use use Quest or Labcorp, but others use private labs or mobile phlebotomy services. Please ask your provider or contact the company directly.

Diagnostic Testing for all Chromosomal Abnormalities

The only way to be certain whether your baby has any chromosomal abnormalities is by doing an invasive diagnostic test – chorionic villus sampling (CVS) or amniocentesis. Both tests provide a sample of tissue from the placenta or amniotic fluid that has the same genetics as the baby. This allows the baby's chromosomes to be analyzed.

Because of the small increased risk of miscarriage associated with these two tests, they are not generally recommended unless the fetus is at increased risk. Traditionally, this is a mother over 35 years old or with positive screening results. Genetic counseling is recommended for women over 35 and those with a California Screen showing greater than 1 in 500 chance of having a baby with trisomy 21, 13, or 18 or positive for neural tube defect.

The risks associated with the procedure are discussed with you by the genetic counselor and the physician that performs the procedure. You will have time to have all your questions answered. The risks of an amniocentesis include bleeding, fluid leakage, infection and miscarriage. There is about a 1 in 570 risk of miscarriage from an amniocentesis. It is a slightly higher risk with CVS.

If you are at higher than average risk of a chromosomal abnormality, review your options with your physician. It may be helpful to schedule genetic counseling in the first trimester.

Chorionic Villus Sampling (CVS)

A CVS is done by a perinatologist (high risk specialist) between 10 and 13 weeks. It involves taking a small amount of tissue from the placenta. Although methods vary, the procedure involves inserting a small tube through the cervix or abdomen into the uterine cavity depending on the location of the placenta. It may be performed for patients who want an early diagnostic test or after a positive first trimester California Screen to evaluate the chromosomes of the fetus for abnormalities. CVS does not evaluate for neural tube defects such as spina bifida, so the second trimester California Screen should be performed in addition to a Detailed ultrasound at a Prenatal Diagnosis Center.

Amniocentesis

An amniocentesis is a procedure where a small amount of amniotic fluid (fluid surrounding the developing baby) is removed from the uterus through a thin needle, using ultrasound guidance. This procedure is typically performed during 16 to 20 weeks of pregnancy and includes a Detailed ultrasound. Some women say amniocentesis does not hurt, while others say they feel pressure or a cramp.

What tests can be performed on amniotic fluid specimen?

Different tests can be done on amniotic fluid; the most common tests are listed below.

- Chromosome analysis to detect chromosome abnormalities such as Down syndrome or Trisomy 18. All 23 pairs of chromosomes will be evaluated as well as the sex chromosomes.

- AFP (alpha-fetoprotein) and AChE (acetylcholinesterase) measurements to detect neural tube defects such as spina bifida and anencephaly. In spina bifida there is an opening in the back or

spinal cord, usually requiring multiple surgeries, and may be associated with physical disabilities. In anencephaly, the brain development is incomplete, usually resulting in death.

• Genetic diseases that can be diagnosed prenatally, including Cystic fibrosis, Fragile X syndrome, Hemophilia, Sickle cell disease, Thalassemia, Tay-Sachs disease, Canavan disease and Gaucher's disease.

Who should consider having an amniocentesis?

• Women who will be 35 years or older at the time of delivery. The risk of having a child with Down syndrome or other chromosome abnormalities increases with increasing maternal age.

• Either parent can be a carrier of a chromosome rearrangement. Some individuals have chromosome rearrangements, in which some of the genetic materials on a chromosome may be moved from their normal location. These individuals are healthy, but they may have a child with a chromosome imbalance that can be associated with developmental and physical defects.

• Having a previous child with chromosome abnormality. These couples have an increased risk of having another child with a chromosome abnormality.

• Parents who are carriers of a prenatally diagnosable genetic disorder. These couples have an increased risk of having a child with the genetic disorder. If diagnosis for the disorder is available, amniocentesis can be performed for this purpose. Carrier screening is available for a number of disorders.

• Women with abnormal ultrasound findings. When ultrasound examination shows abnormalities, amniocentesis for diagnostic testing of the amniotic fluid may be recommended.

• Women with abnormal California Prenatal Screening test results. This may indicate an increased risk for chromosome abnormalities or neural tube defects.

• Family history of neural tube defects. The risk of having a child with a neural tube defect, such as spina bifida, is increased when a close relative has the disorder.

• Certain seizure medications may increase the risk for neural defects and amniocentesis should be considered.

Carrier Testing for Genetic Diseases

The purpose of genetic screening tests is to determine the carrier status of common genetic abnormalities. These common inherited diseases can occur even without a family history. The tests do not detect all carriers of the diseases. Carriers are usually healthy; however, they have a risk of passing on a genetic condition to their children if both parents are carriers for the same condition. You and your partner are welcome to both be tested at the same time, but this is not necessary. If you screen positive as a carrier for any of the conditions, your partner will then be tested.

For autosomal recessive conditions, both partners must be carriers for the same condition in order for the baby to have a risk of being affected. If both parents carry the same genetic condition, the baby has a 25% chance of being affected. If your partner is also a carrier for the same condition, genetic counseling and further diagnostic testing is recommended. Carrier

screening is usually only done once. If you have already been screened, it is not necessary to test again. These tests are optional. The California Prenatal screening test and the Non-invasive prenatal test (NIPT) are screening tests are for chromosomal abnormalities in the baby and are not genetic carrier screening tests.

Panel Carrier Testing for Genetic Conditions

Several companies test for a panel of genetic tests. The Disease include Cystic fibrosis, SMA, Fragile X, Sickle cell anemia, Tay Sachs as well as many additional conditions.

Carrier testing can be performed on saliva or blood. Kits are available at our office. If the mother tests positive for a genetic condition, then the father should be tested for the same condition. If both parents are positive for the same condition, the baby may be affected. Genetic counseling is encouraged. A diagnostic chromosomal test might be indicated.

Individual Carrier Testing for Genetic Conditions

Cystic Fibrosis

Cystic fibrosis (CF) is one of the most common genetic disorders in the Caucasian population, affecting approximately 1 in 3,000 people. The most common problems are chronic lung infection and poor absorption of nutrients due to the accumulation of thick mucus in the lungs and pancreas of patients with CF. While much progress has been made in the understanding and treatment of the disease, there is no cure. Symptoms of the disease range from mild to severe. Typical lifespan of an affected person is 37 years, though some may live longer.

What causes Cystic Fibrosis?

CF is an autosomal recessive disorder. If both parents are carriers, there is a 1 in 4 (25%) chance to have a child with cystic fibrosis. For an individual to be affected with CF, he or she must inherit one copy of the mutated CF gene from each parent. Individuals having one copy of the mutated gene and one copy of the normal gene are known as carriers. Carriers do not have any symptoms of the disorder. The CF carrier frequency differs among different ethnic groups. The frequency is approximately 1 in 25-30 in individuals of Northern European or Ashkenazi Jewish ancestry, 1 in 50 in Hispanics, 1 in 65 in African Americans and 1 in 50 in Asians.

How can Cystic Fibrosis be detected?

A DNA blood test for some of the mutations causing CF is available. The test can be performed on blood specimens or amniotic fluid to detect carriers or affected individuals. Since there are over 900 different mutations within the CF gene, this test cannot detect all the mutations. The detection rate varies among different ethnic groups, with 97% for Ashkenazi Jews, 90% for Caucasians, 68% for Hispanics, 45% for African Americans and 30% for Asians. If you are a carrier of CF and your partner has a negative test and no family history of CF, the chance that your baby will have CF is less than 1%.

Who should be tested for Cystic Fibrosis?

Because it is increasingly difficult to assign a single ethnicity, it is reasonable to offer cystic fibrosis carrier screening to all pregnant patients, provided that women are aware of their

carrier risk and of the test limitations. CF carrier testing is strongly recommended for individuals with a family history of CF, spouses of CF carriers and pregnant couples who are of Northern European or Ashkenazi Jewish ancestry. Prenatal diagnosis is recommended when both parents have been found to be carriers, there is a family history of CF and one parent is found to be a carrier, a previous child has been diagnosed with CF or certain ultrasound abnormalities are seen in the fetus. This test is only done once. Please let us know if you have already done this test.

Thalassemia

Thalassemia includes several different types of anemia. Alpha and beta thalassemias are named for the part of the oxygen carrying protein that is lacking in the hemoglobin of the red blood cells. Thalassemia occurs most frequently in people of Italian, Greek, Middle Eastern, Asian and African descent. The disease can cause the child to have frequent infections and an enlarged spleen, liver and heart. A hemoglobin electrophoresis to diagnose thalassemia is indicated if the MCV value on the routine blood count (CBC) is less than 80. If both parents are carriers, there is the chance that their child could be severely affected and possibly need blood transfusions in utero. Life expectancy for those severely affected is often shortened. This test is only done once. Please let us know if you have already done this test.

Ashkenazi Jewish Genetic Screening

These tests only need to be done once, so let us know if you have done them in the past.

What is an Ashkenazi Jewish Disease?

Ashkenazi is the term used to describe Jewish individuals who have ancestors from Eastern Europe. Roughly 90% of the six million Jewish individuals in the United States are of Ashkenazi descent. Similar to most ethnic populations, the Ashkenazi Jewish population has a higher prevalence of certain genetic disorders. Individuals of Jewish descent should be screened for Tay-Sachs disease, Canavan disease and Gaucher's disease.

What is Tay-Sachs Disease?

Tay-Sachs disease is a fatal genetic disorder that occurs more frequently in the Ashkenazi (Eastern European) Jewish population. Approximately 1 in 27 Ashkenazi Jewish individuals are carriers of this disease. A baby with Tay-Sachs disease appears normal at birth, but after six months of age, the child progressively develops mental retardation followed by paralysis, blindness, and seizures. Death usually occurs by the age of five. Tay-Sachs disease is caused by a deficiency of an enzyme called Hexominodase-A. As a result of this deficiency, there is an accumulation of certain substances, which damage the nervous system.

What is Canavan Disease?

Canavan disease is a progressive disorder in which the brain and nervous system degenerate. Symptoms of Canavan disease include brain damage, mental retardation, feeding difficulties, blindness, and a large head. There is no treatment, and death usually occurs in the first decade of life.

What is Gaucher's Disease?

Gaucher's Disease is an inborn error of metabolism that results from a specific malfunction in one of the body's individual chemical processes. Although there are at least 34 mutations known to cause Gaucher's Disease, there are 4 genetic mutations, which account for 95% of the Gaucher Disease in the Ashkenazi Jewish population. The carrier rate is 1 in 14 Jewish people of Eastern European ancestry and 1 in 100 of the general population.

How are these diseases inherited?

All three diseases are inherited in an autosomal recessive pattern. For an individual to be affected, he or she must inherit one copy of the abnormal (mutated) gene from each parent. Individuals having one copy of the particular disease-causing gene and one copy of the normal gene are known as carriers. Carriers usually do not have any symptoms of the disorder. If both parents carry the same mutated gene, their child has a 25% chance of having the disease. If only one parent carries the disease gene, their child is not at risk for having that disease but has a 50% chance of being a carrier. If both parents are carriers, the couple should undergo prenatal genetic counseling.

Fragile X Syndrome

It is the most common form of inherited mental retardation and accounts for approximately 40% of cases with X-linked mental retardation. Clinical characteristics include mild learning disabilities to severe mental retardation. Approximately one-third of all children diagnosed with fragile X syndrome also have autism and hyperactivity. Almost all males with full mutations have developmental delay or mental retardation. Approximately 50% of females with a full mutation have IQs in the borderline or mentally retarded range; of the remaining 50%, half have learning disabilities. This test is only done once. Please let us know if you have already done this test.

Who should be tested?

It is recommended that any person with unexplained mental retardation, developmental delay or autism be tested. The American College of Medical Genetics also recommended carrier testing on the basis of a family history of unexplained mental retardation.

How common is Fragile X Syndrome?

The incidence is 1 in 4,000 males and 1 in 8,000 females. The carrier frequency is 1 in 260 and occurs in all ethnic backgrounds. If the test shows that you are a carrier of fragile X, your partner does not need testing because this disease is inherited only through the woman. If a mother is a carrier, there is a 50% chance to have a child with fragile X syndrome. Therefore, the next step is for you to consider diagnostic testing by amniocentesis or chorionic villi sampling (CVS) to determine if your baby is affected.

Where can I find out more information?

For more information see: www.fragilex.org/
or http://www.cdc.gov/genomics/hugenet/factsheets/FS_FragileX.htm

Spinal Muscular Atrophy (SMA)

SMA is an autosomal recessive condition that causes progressive degeneration of the lower motor neurons, muscle weakness and, in the most common type, respiratory failure by age two. Muscles responsible for crawling, walking, swallowing and head and neck control are the most severely affected. It is variable in severity and age of onset and does not affect intelligence. There is no cure or treatment. This test is only done once. Please let us know if you have already done this test.

What is the carrier frequency?

The frequency varies by ethnicity and ranges from 1 in 35 to 1 in 117 in the United States. The incidence is 1 in 6,000 to 10,000

What is the carrier detection rate?

Caucasian: 95%, Ashkenazi Jewish: 90%, African American: 71%, Hispanic: 91%, Asian: 93%.

Sickle Cell Disease

Sickle cell anemia is an inherited disorder that affects hemoglobin, a protein that enables red blood cells to carry oxygen to all parts of the body. The disorder produces abnormal hemoglobin, which causes the red blood cells to become crescent or sickle shaped. Normal red blood cells are round and move through blood vessels in the body to deliver oxygen. Sickle red blood cells become hard, sticky and have difficulty passing through the small blood vessels. When these hard, pointed red cells go through capillaries, they clog the flow and break apart. This causes pain, damage and anemia. This test is only done once. Please let us know if you have already done this test.

What is Sickle Cell Trait?

Sickle cell trait is seen in a person who carries one sickle hemoglobin producing gene inherited from their parents and one normal hemoglobin gene. Normal hemoglobin is called type A. Sickle hemoglobin is called hemoglobin AS on the hemoglobin electrophoresis. This combination of one normal and one abnormal gene will NOT cause sickle cell disease.

How do you get Sickle Cell Anemia or Trait?

You inherit the abnormal hemoglobin from your parents, who may be carriers with sickle cell trait or parents with sickle cell disease. You cannot catch it. You are born with the sickle cell hemoglobin and it is present for life. If you inherit only one sickle gene, you have sickle cell trait. If you inherit two sickle cell genes you have sickle cell disease.

How common is Sickle Cell Anemia?

It is most common in people whose ancestors come from sub-Saharan Africa, Spanish-speaking regions of Central and South America, Saudi Arabia, India and the Mediterranean. The disease occurs in approximately 1 in every 500 African American births and 1 in every 1,200 Hispanic-American births. One in 12 African-Americans carries the sickle cell trait.

Common Discomforts in Pregnancy

Abdominal cramping

It is common to have cramping as the uterus grows. Pain can occur in the ligaments as the uterus enlarges. Braxton-Hicks are irregular uterine contractions and are common in the second and third trimester. Use a heating pad, increase fluid intake, rest and try Tylenol to help with discomfort. Call for severe pain, bleeding or regular contractions (more than 4 in one hour).

Acne

Acne occurs during pregnancy due to hormonal changes. Keep your face clean and dry. Benzoyl peroxide, erythromycin and clindamycin can help with acne if prescribed by a dermatologist. Do not use Accutane or Tetracycline while pregnant.

Allergies

Hormonal changes can increase nasal sensitivity resulting in nasal stuffiness and allergies. Avoid allergens such as mold, dust and pets. Antihistamines such as Claritin or Zyrtec may help. Nasal saline spray may help. Prescription nasal steroids such as Flonase or Nasonex are safe. A humidifier is often useful.

Backache

The increasing uterine size causes a shift in the center of gravity and posture. A hormone called relaxin causes the ligaments to soften and elongate. Practice good posture and keep core muscles strong. Bend at the knees instead of the waist when lifting. Wear low heels and avoid standing for long periods of time. A heating pad, ice or Tylenol may be helpful. Wear a support bra if needed. Try stretching, pelvic rocking, or wearing an external abdominal binder or "Belly band". Physical therapy or a massage may also help.

Bleeding gums

The high level of estrogen increases gum sensitivity. Practice good oral hygiene. Use a soft toothbrush & floss regularly. Try warm saline mouthwashes. Increase Vitamin C intake.

Braxton-Hicks contractions

Irregular contractions of the uterus in preparation for labor. Braxton-Hicks do not usually signify labor is going to start. Rest on your left side and drink lots of fluid. Keep your bladder empty. Call if the contractions become regular (more than 4 in one hour) and intense and you are less than 34 weeks pregnant.

Breast changes

The increased hormone levels thicken the fat layer of the breast and stimulate the development of milk ducts causing breast pain. As the blood supply to the breasts increases, the blood vessels enlarge and bluish veins may appear on the breasts. The areola and nipple darken and Montgomery glands, the small pores around the areola, enlarge. Colostrum may leak during pregnancy. Avoid caffeine, take Vitamin E 800 IU and wear a support bra.

Carpal tunnel syndrome

Fluid retention causes compression of the ulnar nerve in the wrist resulting in numbness and pain in the hands. Wear a wrist splint while sleeping. The numbness usually disappears about 6-8 weeks postpartum. Remove rings from your fingers before they become too swollen.

Constipation

Progesterone produced in pregnancy relaxes smooth muscle in the colon and decreases intestinal motility resulting in constipation. Iron and calcium supplementation, decreased exercise, stress and dehydration can contribute to constipation. Drink 8 glasses of water daily, eat prunes and a high fiber diet. Increase exercise and use a stool softener such Benefiber. Use Miralax if necessary.

Diarrhea

Caused by hormonal changes affecting intestinal motility. This frequently occurs during early labor. Drink liquids to avoid dehydration. Eat rice, bananas, and toast. Avoid dairy products.

Dizziness

The enlarged uterus compresses the vena cava. Dizziness can also be caused by dehydration, nausea, vomiting, and blood sugar fluctuations. It may be caused by standing or sitting in the same position for long periods of time causing blood to accumulate in the lower extremities. Lay on your side (left or right) while sleeping. Eat frequent, small meals and stay well hydrated. Do not get up from sitting too quickly or take very hot showers. Move your legs while standing in place to increase blood circulation.

Fatigue

Caused by a fall in the metabolic rate, hormone level changes and sleep disturbances. Rest or take naps frequently. Avoid exercise before bed. Avoid caffeine.

Flatulence

Increased progesterone relaxes the anal sphincter. Avoid gas-producing foods, chewing gum, or drinking carbonated drinks. Try Mylicon.

Headaches

Caused by stress, increased blood volume, low blood sugar, or hormone level changes. Rest, drink fluids, and try relaxation techniques or massage. Use Tylenol.

Heartburn

Increased progesterone relaxes the lower esophageal sphincter and decreases intestinal motility. Production of stomach acids increases and the baby puts upward pressure on the stomach. Avoid acidic foods such as citrus fruits, tomatoes, red peppers and chocolate. Avoid spicy foods. Eat small, frequent meals rather than large meals. Do not lie down after eating. Try Maalox or Milk of Magnesia. Elevate the head of the bed when sleeping. Pepcid and Zantac decrease stomach production of acid. Tums will neutralize the stomach acid and Reglan (prescription) may increase gastrointestinal motility.

Hemorrhoids

Straining during bowel movements and constipation can cause veins in rectum to become inflamed and swollen. Increased blood volume and pressure due to additional weight from the pregnancy can cause varicose veins in the rectal area. Eat a high fiber diet, bran, whole grains and fruit. Try frequent sitz baths, sitting on a rubber ring, Preparation H, Tucks, or Anusol HC.

Hip pain

Commonly caused by ligaments become softer and looser due to hormonal changes. Keep active by walking and stretching. A heating pad and massage may help.

Insomnia

Caused by hormonal changes and discomfort due to physical changes in pregnancy. Try a warm bath, relaxation techniques, and a body pillow. Exercise daily, avoid caffeine, and reduce noise while sleeping. Experiment with comfortable sleeping positions. Benadryl causes fatigue and is commonly used to help with insomnia.

Itching

Caused by changing hormone levels. Increase fluid consumption. An Aveeno bath and moisturizing lotion may help. Use Benadryl cream, calamine lotion or hydrocortisone cream.

Leg cramps

The uterus puts pressure on pelvic blood vessels causing decreased circulation to the lower extremity muscles. Stretch by straightening the affected leg. Flex the toes forward and away. Try leg elevation and massage. Calcium and magnesium supplements may help. A heating pad, hot water bottle or a warm bath may decrease symptoms.

Mood swings

Occur from constant fluctuation of hormone levels, fatigue, and stress. Make time for yourself, rest, and exercise.

Nasal congestion

The hormone changes increase nasal mucosa sensitivity. Rapid breathing increases the dryness in the nasal passages. Use a humidifier, drink fluids, and try saline nasal sprays.

Nausea and vomiting

This occurs from changing hormone levels, slowed intestinal motility, stretching of the internal organs and the enlarging uterus putting pressure on the stomach. Avoid spicy or greasy foods. Eat small, frequent meals. Drink tea and liquids between meals. Keep crackers, popcorn, or toast at bedside. Try Vitamin B6 50-100mg with ½ a Unisom tablet. Acupressure wristbands and ginger may help. Several prescription medications are available if symptoms persist and interrupt daily life.

Nose bleeds

Caused by high estrogen levels, which increase nasal sensitivity. Sit with head tilted forward and pinch your nostrils for 10 - 15 minutes. Avoid overheated, dry air and excessive exertion.

Blow your nose gently. Try sleeping with a room humidifier. Use Vaseline on the nasal passages or saline nasal spray to keep the nostrils moist. Try a nasal decongestant (pseudoephedrine) to shrink the swollen vessels.

Numb spot on the abdomen

Caused by the baby pushing on nerves to the abdomen. It is normal and no treatment is necessary.

Pain with intercourse

Occurs from pelvic and vaginal congestion, uterine enlargement, and changing hormone levels. Try changing positions, more foreplay and using a lubricant.

Palpitations

Heart palpitations (pounding or rapid beats) are a normal response to the extra blood volume and are common in the first trimester. Take slow, deep breaths and reduce stress and anxiety.

Round ligament pain

The ligaments that support the enlarging uterus are stretching. Flex your knees to your abdomen. Try warm baths, a heating pad, exercise, or sleeping with a body pillow.

Shortness of breath

The enlarging uterus presses up against the diaphragm causing shortness of breath. Avoid restrictive clothing. Use pillows to elevate the back while sleeping.

Skin changes

Estrogen and progesterone hormones have pigment stimulating effects, causing a dark line on the abdomen (linea nigra) and a facial rash (chloasma). Avoid sun exposure and wear sunscreen. Be patient, it should resolve by 6 months after delivery.

Stretch marks

There is nothing that prevents stretch marks, although avoiding excessive weight gain in pregnancy may minimize them. The marks occur when the skin's normal elasticity does not accommodate the growing uterus. Stretch marks can occur on the abdomen, breast, thighs and upper arms. The marks usually fade after delivery. Moisturizing lotion may help with itching or discomfort.

Swollen hands or feet

Water retention in the extremities occurs from a pressure differential between the blood vessels and the lymphatic system. It occurs more often in the third trimester and can cause discomfort and carpal tunnel syndrome. Avoid restrictive clothes and long periods of standing. Wear support hose and try elevating the legs. Increase exercise and water intake.

Urinary frequency

The heavy weight of the uterus putting pressure on the bladder may cause urinary frequency. Drink fewer fluids before bed. Wear easily removable clothing and do Kegel exercises to prevent urinary leakage.

Urinary tract infection

Bladder infections occur due to relaxation of the sphincters in the perineum and slower movement of urine through the urinary system. Drink more fluid and consider cranberry juice, cranberry tablets or Vitamin C tablets. After urination, wipe from front to back. Urinate after intercourse. Call the office if you suspect an infection.

Vaginal discharge

Estrogen causes increased cervical mucus formation. Wear cotton underwear and panty liners. Call if odor, persistent itch, changes in color or consistency. Avoid pantyhose, girdles, and tight pants. Over the counter yeast medications are safe if symptoms warrant treatment.

Varicosities or varicose veins

Varicose veins are caused by impaired circulation, pressure of the uterus on the circulatory system, and hormonal effects on veins. They may be hereditary. Avoid restrictive clothing, long periods of standing, and crossing legs at the knees. Elevate legs and wear support hose. Continue exercising.

Yeast infection

Caused by a change in vaginal flora due to hormonal fluctuations and pH changes. Use good hygiene. Wear cotton underwear. Try yeast medication (available without a prescription).

Special Considerations for the Pregnant Woman

Caffeine

The March of Dimes recommends that women who are pregnant consume no more than 200 mg of caffeine per day. This is equivalent to two 8 ounce cups of coffee or four soft drinks per day. The Organization of Teratology Information Specialists http://mothertobaby.org/fact-sheets-parent/ states that caffeine has not been shown to cause an increased chance for birth defects. Caffeine crosses the placenta and in large quantities can affect babies in the same way as it does adults.

Alcohol

Fetal Alcohol Syndrome (FAS) is the leading known cause of mental retardation. It is preventable. Please DO NOT drink alcohol during your pregnancy or use any illicit drugs such as amphetamines, cocaine, marijuana, or hallucinogenic drugs. There is no known safe amount of alcohol use in pregnancy.

Herbal Supplements

We do not recommend any herbal supplements during pregnancy. Most have not been studied so no safety record is available. If you are taking a supplement, please bring it to your appointment and discuss its use with your physician.

DHA and Omega-3 Supplements

Docosahexaenoic acid (DHA) is an omega-3 fatty acid. It is found in cold-water fatty fish and fish oil supplements, along with eicosapentaenoic acid (EPA). Vegetarian sources of DHA come from seaweed. Because omega-3 fatty acids are needed for brain development, research is being done to see if DHA may prevent Attention Deficit Hyperactivity Disorder (ADHD) in children. At this time, there is no proven benefit for pregnant women who take fish oil supplements. Supplements can cause a prolonged bleeding time, interaction with other medications and may have side effects (loose stools, abdominal discomfort and belching). Additionally, it is recommended that pregnant women avoid eating fatty fish due to the mercury content in fish.

Food Handling

Tips for preventing food borne illnesses can be found on the FDA website at http://www.fsis.usda.gov/wps/portal/fsis/topics/food-safety-education/get-answers/food-safety-fact-sheets/safe-food-handling/basics-for-handling-food-safely Use the same precautions when you are pregnant that you normally use for food preparation and storage. Soft cheeses are safe as long as they are pasteurized. Deli meats should only be consumed if fresh. Cooking food destroys bacteria and parasites.

Toxoplasmosis

Toxoplasmosis is a parasite that is sometimes found in birds. If you have a cat that catches and eats birds and uses an indoor litter box, feces from the cat may contain toxoplasmosis. This can be harmful to a developing fetus if ingested by the mother. Please have someone else change the litter box.

Dental Exams

Local anesthesia injections are safe. Use a lead apron if X-rays are necessary. Pain medications and most antibiotics are safe (your dentist will prescribe correctly). Dentists commonly use Lidocaine and Ampicillin for dental procedures which are both safe in pregnancy.

Smoking

Smoking while pregnant increases the incidence of low birth weight babies, placental abruption, miscarriage and pre-term labor. It also increases the baby's risk for future ear infections, colds and Sudden Infant Death Syndrome. Please do not smoke during your pregnancy. Call the American Cancer Society for information on quitting 800-662-8887.

Hot Tubs and Saunas

Studies have shown that there is an increased incidence of miscarriage if a sauna is used during the first three months of pregnancy. We recommend against using the sauna during the entire pregnancy and not using a hot tub during the first three months of pregnancy. After the first three months of pregnancy, limit the hot tub to 100 degrees temperature. The danger to the fetus appears to be from raising the mother's core body temperature. Warm baths and showers are safe throughout pregnancy.

Vaccinations

The Tdap (Tetanus, diphtheria and pertussis) vaccine is recommended for all adults in contact with newborns and toddlers under the age of one to prevent transmission of pertussis, also known as whooping cough. You should receive the vaccination between 27 and 36 weeks of pregnancy The Flu shot is recommended for all pregnant women. The H1N1 vaccine is recommended for all pregnant women. The most up-to-date information is available at http://www.cdc.gov/h1n1flu/pregnancy/.

Fish and Seafood

Currently the FDA suggests that pregnant women eat 8-12 ounces of fish each week. The nutritional value of fish is important during growth and development of the fetus before birth. Choose fish low in mercury including salmon, shrimp, pollock, light canned tuna, tilapia, catfish, and cod. Albacore has more mercury than light canned tuna so the limit for this fish is six ounces. The FDA has warned that some fish (shark, swordfish, king mackerel, tuna, and tilefish) may contain levels of mercury that could lead to brain damage in the developing fetus and should not be consumed. For more information on fish consumption advisories, go to the website: http://www.fsis.usda.gov/wps/portal/fsis/topics/food-safety-education/get-answers/food-safety-fact-sheets/foodborne-illness-and-disease/foodborne-illness-and-disease Cooking fish does not decrease the mercury content.

Zika Virus

Pika virus disease is caused by Zika virus that is spread to people primarily through the bite of an infected Aedes species mosquito. It can also be spread by a man to his sex partners. Pika virus can be passed from a pregnant woman to her fetus during pregnancy or at delivery. It has not been shown to be passed through breast milk. The most common symptoms of Zika are

fever, rash, joint pain, and conjunctivitis (red eyes). The illness is usually mild with symptoms lasting for several days to a week after being bitten by an infected mosquito. Once a person has been infected, he or she is likely to be protected from future infections.

Zika infection in the mother during pregnancy has been associated with microcephaly (baby's head is smaller than expected and is often associated with smaller brain). Pregnant women should avoid travel to areas that have Zika Virus http://www.cdc.gov/mmwr/zika_reports.html. http://wwwnc.cdc.gov/travel/page/zika-information

If travel is necessary, avoid mosquito bites. Use insect repellent https://www.epa.gov/insect-repellents/find-insect-repellent-right-you and wear gear treated with permethrin and wear long sleeved shirts and long pants. http://wwwnc.cdc.gov/travel/page/avoid-bug-bites If your partner has traveled to an area with Zika virus, use condoms for intercourse during the pregnancy. there is no treatment for the Zika virus.

Toxic Substance Exposures

Toxic Substances are chemicals and metals that can harm your health. Minimizing your exposure during pregnancy can protect you and your baby. Here are some tips to prevent or reduce your exposure to these substances. For more information visit: www.prhe.ucsf.edu/prhe

1. Don't spray bugs: Pesticides are toxic chemicals for killing insects, rodents, weeds, bacteria and mold. Keep pests out of your home by cleaning up crumbs and spills. Store food in tightly closed containers. Seal cracks around doors and windows. Repair drips and holes and get rid of standing water. Use baits and traps. Don't use chemical tick and flea collars, flea baths or flea dips.
2. Mop more. Toxic substances like lead, pesticides and flame retardants are present in dust. Sweeping or dusting with a dry cloth can spread the dust in the air instead of removing it. Use a wet mop or wet cloth to clean floors and surfaces.
3. Take off your shoes. Shoes can carry toxic chemicals into your home. Wipe shoes on a sturdy doormat if you want to keep them on.
4. Clean your home with non-toxic products. It is cheap and easy to make effective, non-toxic cleaners. You can use common items like vinegar and baking soda.
5. Avoid dry-cleaning clothes. Most dry-cleaning systems use a chemical called perchloroethylene (PERC). Dry-cleaned clothes release PERC, polluting your home. Use water instead. Most clothes labeled "dry clean only" can be washed with water. Hand wash them yourself or ask the dry-cleaner to "wet clean" them for you.
6. Use non-toxic personal care products. Many products have ingredients that can harm reproductive health.
7. Avoid toxic substances in food and water. Eat organic food when possible to reduce your exposure to pesticides. If you don't buy organic produce, buy the fruits and vegetables with the lowest pesticide levels. Limit foods with a lot of animal fat. Many

toxic substances build up in animal fat. Avoid canned foods and beverages as much as possible to avoid exposure to the BPA used in the lining of most cans.

8. Prevent exposure from work. If you are exposed to toxic substances at work, request a change in your duties. If you live with someone who works with toxic substances, that person should shower after work.

Processed Foods and Plastic Bottles

Minimize your exposure to processed foods. Ham and bacon contain sodium nitrate, which may be harmful in large quantities. Plastic bottles may contain Bisphenol A (BPA), a synthetic chemical that interferes with the body's natural hormonal messaging system. Health advocates also recommend not reusing bottles made from plastic #1 (polyethylene terephthalate, also known as PET or PETE), including most disposable water, soda and juice bottles. Such bottles may be safe for one-time use, but reuse should be avoided because studies indicate they may leach DEHP—another probable human carcinogen—when they are in less-than-perfect condition. Use BPA free water bottles. Do not microwave food in plastic containers. Use only glass or ceramic dishes in the microwave oven.

Reference

Mother To Baby - http://www.mothertobaby.org **866-626-6847**

Prenatal Nutrition

Healthy Eating During Pregnancy

The following are guidelines for healthy eating in pregnancy. The United States Department of Agriculture has an excellent website for pregnancy: www.choosemyplate.gov/pregnancy-breastfeeding.html. The website can help with the plan that is right for you. Enter your information for a quick estimate of what and how much you need to eat.

Additional folate or folic acid (400 mcg) is important during the development of the baby's neural tube, which occurs during the first trimester. Prenatal vitamins contain folic acid. Foods rich in folic acid include beans, lentils, peanuts, sunflower seeds, walnuts, almonds, orange juice, pineapple, cantaloupe, bananas, avocados, broccoli, asparagus, spinach, dark green lettuce and okra. Many cereals and breads may be fortified with folate. The nutrition label on the foods should list any supplements. Patients with a history of a pregnancy complicated by a neural tube defect (NTD) should take 4 mg per day.

Food Guide Pyramid: Daily Choices for Pregnant Women

Food Group	Recommended Servings	What Counts as a Serving?
Breads, Cereal, Rice, and Pasta Group—especially whole grain and refined (enriched)	6 - 11 servings	1 slice bread ½ hamburger bun or English muffin 3 - 4 small or 2 large crackers ½ cup cooked cereal, pasta, or rice About 1 cup ready-to-eat cereal
Fruit	2 - 4 servings	¾ cup juice ¼ cup dried fruit 1 medium apple, banana, orange, pear ½ cup chopped, cooked or canned fruit
Vegetable (Eat dark-green, leafy, yellow or orange vegetables, and cooked dry beans and peas often.)	3 - 5 servings	1 cup raw leafy vegetables ½ cup other vegetables—cooked or raw ¾ cup vegetable juice

Meat, Poultry, Fish, Dry Beans, Eggs, and Nuts—preferably lean or low fat	3-4 servings	2-3 ounces cooked lean meat, poultry, fish ½ cup cooked, dry beans** or ½ cup tofu counts as 1 ounce lean meat 2 tablespoons peanut butter or ⅓ cup nuts counts as 1 ounce meat
Milk, Yogurt, and Cheese—preferably fat free or low fat (1%)	3 - 4 servings*	1 cup milk 1 cup buttermilk 8 ounces yogurt 1½ ounces natural cheese 2 ounces processed cheese 1 cup calcium-fortified soy milk
Fats and Sweets	Use sparingly	Limit fats and sweets

Weight Gain During Pregnancy

Pregnant women need about 300 calories a day more than before pregnancy to support growth of the fetus. Before pregnancy, most active women need about 2,200 calories daily. Sedentary women need 1600 calories. If activity levels decline with pregnancy, fewer additional calories are needed.

Weight gain during pregnancy should be gradual with the most weight being gained in the last trimester. If you are a normal weight at the beginning of your pregnancy, you should gain about 2 to 8 pounds during the first three months of pregnancy and then 3 to 4 pounds per month for the rest of your pregnancy. Your BMI can be calculated at http://www.bmi-calculator.net

BMI	Recommended Weight Gain in Pregnancy
Underweight	28-40 pounds
Normal BMI	25-35 pounds (with Twins- 35-45 pounds)
Overweight BMI	15-25 pounds
Obese	Not to gain more than 15 pounds

**Obese women should not gain more than 15 pounds during the pregnancy. Obesity is a risk factor for having babies with neural-tube defects and other malformations. They are twice as likely to need a cesarean section for delivery. Babies born from obese mothers are more likely to be overweight later in life.

Suggestions to Avoid Excessive Weight Gain

- Do not eat for two. Your metabolism is more efficient during pregnancy and absorbs more nutrients. Eat an additional 300 calories as long as your activity level remains constant.
- Limit the amount of fat (butter, mayonnaise, salad dressing, sauces) that you add to your foods.
- Avoid fast food.
- Drink nonfat or low-fat milk rather than whole milk.
- Eat three small meals and three snacks daily at 2-3 hour intervals (graze, rather than eat large meals).
- Chose fresh fruit or raw vegetables for snacks rather than sweets.
- Read juice labels. Many drinks that seem to be fruit juices are really drinks that have little or no fruit juice. Since fruit-type drinks are mostly sugar, they do not count as a serving. Remember, fresh fruits and dried fruits have more fiber than fruit juice, so they are a better choice.
- Incorporate more activity and exercise into your daily routine.
- Drink at least 8 to 10 glasses of water per day.

Calcium

Pregnant and lactating women need 1200 mg of calcium daily. If your nutritional calcium intake is not adequate, calcium from your bones is used for the baby's development. This puts you at risk for osteopenia (weak bones) or osteoporosis later in life. Foods are the best source of usable calcium. Food sources of calcium include milk and milk products, cheese, fish, and many vegetables. Other food sources are fortified breads and cereals. High fat dairy products should be taken sparingly.

If you are unable to obtain all the necessary calcium from foods, a combination of foods and a moderate amount of supplement may be the best therapy. If you don't ingest enough calcium in your diet, consider calcium supplements.

Calcium carbonate provides the largest percentage of usable calcium and should be taken with meals to increase absorption. If you have a history of kidney stones or if calcium carbonate causes gas or constipation, consider calcium citrate. Calcium citrate should be taken between meals for best absorption. A list of common foods that contain calcium is available at https://ods.od.nih.gov/factsheets/Calcium-HealthProfessional/.

Vitamin D Supplement

Vitamin D3 is important for calcium absorption. Vitamin D is added to fortified milk and occurs naturally in fish and eggs. Exposure of skin to sunlight also creates Vitamin D. It is very difficult to have a normal vitamin D level without taking a supplement. The current recommendation is 1000 - 2000 IU daily or 10,000 IU once per week. Low levels of vitamin D has been linked with gestational diabetes, hypertension, osteoporosis, depression and some types of cancer.

Iron

Iron is a mineral that the body needs to produce red blood cells. When the body does not get enough iron, anemia occurs. The best dietary source of iron is lean red meat. Chicken, turkey, and fish are also sources of iron, but they contain less than red meat. Dried apricots, molasses, potatoes, raisins, dark leafy greens such as spinach, chard, parsley and strawberries also contain some iron.

Iron Supplement

Anemia may lead to unusual tiredness, shortness of breath, decrease in physical performance, and learning problems. Different preparations include ferrous sulfate, ferrous gluconate or ferrous fumerate. Your body can absorb only a small amount each day, so any of these preparations is adequate for iron supplementation. Some iron preparations contain vitamin C, which increases iron absorption or a stool softener if you have problems with constipation. Nature Made (65mg of iron sulfate) or Slow FE (45 mg) can be taken up to three times daily. If you are taking more than one iron tablet per day, separate the times that you take it and do not take it with your multivitamin. Iron should not be taken with antacids. Stools may turn black in color while taking iron supplementation.

Prenatal Exercises

Exercise Guidelines for Pregnancy (Adapted from Alton, Exercise guidelines for pregnancy - ACOG Tech Bulletin 267)

Exercises for Pregnancy and Childbirth

Knee press, abdominal strengthening exercises and pelvic rock information is available on the lowmg.com website. Pilates and prenatal yoga are helpful for maintaining strength and stability during the pregnancy. Exercise and general fitness decrease the incidence of preterm labor. The length of labor and need for pain medication are also decreased in women who exercise on a regular basis.

Benefits of Exercise During Pregnancy

- Improved posture and relief of back pain
- Improved circulation and flexibility
- Increased energy level and less fatigue
- Stronger muscles for labor with reduced need for pain medication in labor
- Shorter labor
- Reduced risk of preterm labor

Physiologic Changes that Occur During Pregnancy

- Progesterone, relaxin, estrogen and cortisol soften and stretch the connective tissue resulting in laxity and instability of ligaments and joints, thus increasing the risk of musculoskeletal injury.
- As the uterus and breasts enlarge, the center of gravity shifts, resulting in balance problems and increasing the risk of falling and of straining the hips and back.
- Blood volume expansion and increased resting cardiac output decrease the cardiac reserve during exercise. Increased resting oxygen consumption reduces availability of oxygen during aerobic exercise.
- The effects of progesterone on respiratory function combined with the upward displacement of the diaphragm by the enlarging uterus lower the threshold for hyperventilation.
- Dehydration and hypoglycemia occur more readily.
- There have been no reports that hyperthermia associated with exercise causes birth defects.

Exercise Precautions

Avoid vigorous exercise during hot, humid weather or if you have a high fever. Avoid use of a sauna, exercising while fatigued or to the point of exhaustion, exercises that strain the lower back, stress ligaments, injure knees, or promote separation of the pubic bone (symphysis pubis). Avoid holding your breath or straining. Avoid exercising while on the back in the third trimester (causes nausea, dizziness and decreased blood pressure).

Exercise Recommendations

- Regular, aerobic exercise of mild-to-moderate intensity for 30 minutes daily is preferable to intermittent activity or a sudden increase in exercise level.
- Intensity should be light enough to allow conversation during exercise (there are no heart rate limitations).
- Exercise should be preceded by an extended warm-up and followed by a cool-down period and stretching.
- Ample fluid intake is important before, during and after exercise.
- Carbohydrates (milk, fruit, juice, grains) should be consumed before and after exercise to prevent hypoglycemia.
- Caloric intake should be adequate to support exercise and promote optimal weight gain.

Warning Signs to Stop Exercising

Stop exercising if you experience vaginal bleeding, dizziness, headache, chest pain, muscle weakness, calf pain or swelling, preterm labor, decreased fetal movement, or amniotic fluid leakage.

Exercises Considered Safe During Pregnancy (adapted from Cont OB/Gyn 1995:5:62-90)

Stationary bicycling, bowling, dancing, golf, jogging, light weight-training, low-impact aerobics, rowing, running, swimming, tennis, walking, and water aerobics.

Exercises Not Considered Safe During Pregnancy (adapted from Cont OB/Gyn 1995:5:62-90)

Contact sports, marathon running, diving, downhill skiing, gymnastics, heavy weight-training, high-impact aerobics, horseback riding, ice skating, mountain climbing, racquetball, rollerblading, roller-skating, scuba diving, sky diving, surfing, and water skiing.

Contraindications to Exercise During Pregnancy (ACOG Tech Bulletin No. 267)

Pregnancy-induced hypertension, severe anemia, cardiac disease, cervical incompetence or cerclage, extreme underweight, hemoglobinopathies, three or more prior miscarriages, intrauterine growth retardation, severe infection, multiple gestation at risk for preterm labor, placenta previa, polyhydramnios, preterm labor, renal disease, preterm rupture of membranes, uncontrolled seizure disorder, uncontrolled diabetes, persistent second or third trimester bleeding, poorly controlled hypertension, poorly controlled hyperthyroidism.

Posture

Good posture can decrease low back and neck pain and fatigue. During pregnancy the weight of the baby causes the center of gravity to move forward. To prevent this, it is important to maintain a pelvic tilt with the pelvis tucked under the spine. It is important to maintain the "core" abdominal muscles and keep the shoulders down to prevent curvature of the spine and back pain. Since traditional crunches and abdominal work are difficult in the third trimester,

consider using a yoga ball for crunches. Try doing planks focusing on the side abdominals and keeping the pelvis tilted to support the lower back. Consider wearing a maternity support belt. Avoid high heels late in pregnancy as they can cause the center of gravity to move forward. While sitting, maintain the pelvic tilt and avoid slouching. Sit with knees level to hips. During the third trimester, avoid lying flat as it can compress the vena cava (large blood vessel) and cause decreased blood pressure. This will cause nausea and dizziness in the mother and may cause distress in the baby. To avoid this, place a pillow under your hip to tilt the uterus.

Kegel Pelvic Floor Strengthening Program

What are Kegel Contractions?

Kegel pelvic floor muscle exercises help women improve stress incontinence or the involuntary loss of urine with sudden increases in their abdominal pressure (i.e. sneezing, coughing, running, or exercising). The Kegel exercise is an isometric program designed to strengthen the internal pelvic muscle called the pubococcygeus muscle (the "P.C." muscle). This muscle forms the floor of the pelvis and surrounds the urethra, vagina, and anus, thereby, providing support for all the pelvic organs. It is the muscle used to stop urination, to prevent a bowel movement, or to tighten the vagina during intercourse.

The P.C. muscle contains two types of muscle fibers called "slow-twitch" muscle fibers (70%) and "fast-twitch" muscle fibers (30%). Both muscle fiber types should be exercised to improve the muscle's resting tone (slow-twitch) and its rapid reflex contraction (fast-twitch) during episodes of sudden increases in intra-abdominal pressure (i.e., a cough or sneeze). The muscle can be felt by placing your fingers one to two inches inside your vagina, tightening your PC muscle, and feeling the squeeze.

Incorporate the one-minute series of contractions as a regular part of your normal voiding routine for the rest of your life. You will significantly improve the strength of your pelvic floor muscles and improve your bladder control and vaginal tightness. During a sudden cough or sneeze, the pelvic floor muscles will contract by reflex, thereby stabilizing the position of the bladder neck and decreasing the accidental loss of urine.

How Do You Identify the P.C. Muscle?

Sit on the toilet and begin urinating. When your bladder is nearly empty, attempt to stop the flow of urine WITHOUT contracting your abdominal, buttocks, or inner thigh muscles. This will help you identify the correct muscle. (Contraction of the P.C. muscle is performed by "drawing in" the vaginal muscles and tightening the bladder and anal sphincters as if to stop urination or defecation.) When you can successfully start and stop urinating or feel the vaginal muscle contract, you are using your P.C. muscle.

Performing Kegel exercises

Every time you go to the bathroom (after you finish urinating, but before you stand up) remain sitting on the toilet for one minute and perform either of the following muscle exercises (perform on alternating days):

Slow-Twitch Exercise

Hold the muscle tight for a slow count of three to ten-seconds, relax, and repeat again for a total of five to ten contractions.

Fast-Twitch Exercise

Quickly contract and relax your P.C. muscle ("quick flicks") 20 to 50 times, relax for five-seconds, and repeat again for a total of two to four sets. You may only be able to start out with a total of 40 "quick flicks"; however, over a period of a few weeks you will be able to increase the number up to a total of 200.

High Risk Pregnancy

Bleeding During Pregnancy

Bleeding or spotting may occur in 30-40% of pregnancies during the first trimester. Twenty percent of all pregnancies result in miscarriage. The usual cause of a miscarriage is a chromosomal abnormality in the fetus, not something that could have been avoided. Viability can be determined by a vaginal ultrasound. Once a normal heartbeat is visualized, the risk of miscarriage decreases to less than 5% in the first trimester.

It is common to have bleeding after a Pap smear or pelvic examination. Bleeding after exercise or intercourse may also occur. Bleeding during labor is also common as the cervix stretches and softens. Most cases of heavy bleeding in the 2nd or 3rd trimester are caused by placental problems. These include a placenta previa (the placenta covers part or all the cervix) or a placental abruption (a separation of the placenta from the uterine wall). If you experience heavy bleeding in the second or third trimester, call your physician.

Morning Sickness (Hyperemesis)

Changing hormone levels may cause morning sickness or hyperemesis during the first trimester. Increased progesterone causes slowing of intestinal movement causing bloating and increased acid reflux into the esophagus. Nausea and vomiting may result in little or no weight gain during the first trimester. To help alleviate symptoms, stay hydrated and rest. Eat small, frequent meals and avoid spicy and greasy foods. Eating more protein or complex carbohydrates (crackers, popcorn, toast) may help. Antacids and antiemetic (anti-vomiting) medications can be used. Vitamin B6 50-100mg with a Unisom tablet works well and can be purchased without a prescription. Accupressure wrist bands and ginger may help. Your physician may prescribe Zofran, Reglan, Phenergan or Scopolamine patches. These medications all work differently and can be taken individually or together as needed under the advice of your physician

Rh Negative Mothers and Rhogam

If the mother's blood is Rh negative and the father of the baby is Rh positive, then the baby's blood can be either Rh negative or positive. If the baby is Rh positive, then there is Rh incompatibility with the mother. During pregnancy, the baby's red blood cells have the potential to leak into the maternal blood system causing the mother to produce antibodies against the baby's blood. The antibodies remain in the maternal system and can cause serious damage to subsequent babies. Because the baby's blood type and Rh cannot be determined during the pregnancy, all women that are Rh negative should receive Rhogam, unless they are certain the father's blood type is also Rh negative. Rhogam is a synthetic antibody that will block maternal antibody response. Rhogam is injected at 28 weeks and within 72 hours after a birth, miscarriage, abortion or amniocentesis. If the baby is Rh negative, a second Rhogam injection is not necessary after birth.

If the baby's father has written documentation of having Rh negative blood, obtained before or during your pregnancy, then you will not require a Rhogam injection at 28 weeks.

Twins

There are two types of twins, fraternal and identical. Fraternal twins are more common; and each fetus develops from a separate egg and has its own placenta and gestational sac. Mothers of twins are at increased risk of high blood pressure, pre-eclampsia, anemia, gestational diabetes, hyperemesis, preterm labor and postpartum hemorrhage. Babies are more at risk of preterm labor, slowed growth, low birth weight or unequal size (discordance) and birth defects (identical twins). Twin pregnancies are monitored closely with more frequent ultrasounds and non-stress testing. Because of the risk of preterm labor, women carrying twins may stop working sooner than those with a singleton pregnancy.

Preterm Labor

Labor that begins before 37 weeks is considered preterm. It occurs more frequently in women with medical health problems such as kidney or heart disease, twin pregnancy, uterine anomalies such as fibroids or an incompetent cervix, previous history of preterm labor, delivery within the last year and maternal age younger than 18 or older than 40. Symptoms of preterm labor include regular uterine contractions that get longer, stronger and closer together. Braxton-Hicks contractions are not regular and are not usually strong. Call if you have more than 5 regular contractions per hour, have abdominal cramps, pain, pressure, bleeding, or think you may have ruptured the membranes. If you are unsure if you are having Braxton-Hicks contractions or preterm labor, go home, rest, and drink lots of fluid. If your contractions persist at 5 per hour and are regular, call the office to be seen. A fetal fibronectin test may be done to predict the possibility of a pre-term delivery.

Pregnancy Induced Hypertension or Preeclampsia

Preeclampsia is also called Pregnancy Induced Hypertension (PIH) or toxemia and can occur in about 5% of pregnancies. The cause is unknown. PIH is diagnosed by a triad of physical signs that include hypertension (high blood pressure), edema (swelling) and proteinuria (protein in the urine). Symptoms may include severe headache, upper abdominal pain, blurred vision and rapid weight gain. PIH is more common in first pregnancies, multiple gestations, gestational diabetes, teenage pregnancy and pregnancy with hypertension diagnosed before 20 weeks of gestation. The treatment for PIH is delivery. If you develop PIH before your baby can be safely delivered, you may be recommended to start bed rest either at home or in the hospital. In severe cases of PIH, you may be delivered despite the gestational age as the risks of PIH to the mother may outweigh the risks of premature delivery. Severe preeclampsia can result in kidney failure, severe bleeding, stroke and eclampsia (seizures). Magnesium sulfate is frequently used to help prevent seizures during labor.

Gestational Diabetes

Not passing the three-hour glucola screening test indicates gestational diabetes. If you are diagnosed with gestational diabetes, you will be referred to the Sweet Success Program. At Sweet Success, you will meet with a dietician to discuss and monitor your diet during pregnancy. A nurse will teach you how to check your blood sugar. Most women are able to control their blood sugar through diet and exercise. A food pyramid and a preliminary diet for gestational diabetes are available at:

http://www.niddk.nih.gov/health-information/health-topics/Diabetes/gestational-diabetes/Pages/index.aspx

What is gestational diabetes?

Approximately 5 percent of expectant mothers develop gestational diabetes. During pregnancy, the placenta can produce a hormone that makes the mother resistant to her own insulin. This results in an elevated glucose level. Glucose is a small molecule that passes through the placenta and causes the baby to increase its insulin production. This results in complications for the pregnancy as well as the infant. Neonatal (baby) complications from persistent elevated blood sugars may include macrosomia (big baby) and stillbirth. Macrosomia may lead to a shoulder dystocia (shoulders get stuck resulting in neurologic damage to the baby) with a vaginal delivery. It also increases the risk of cesarean section.

After delivery, the baby may produce too much insulin and develop hypoglycemia (low blood sugar). This can cause jitteriness and seizures. The baby is also at increased risk for jaundice and polycythemia (high red blood cell count). The baby's glucose is tested at delivery with a heel stick blood test. If the sugar level is low, the baby may need to be given a sugar water bottle or even an IV glucose solution. Some studies have found a link between severe gestational diabetes and an increased risk for stillbirth in the last two months of pregnancy. Having gestational diabetes makes you about twice as likely to develop pre-eclampsia as other pregnant women.

What factors would put me at risk for gestational diabetes?

All patients are screened with the first trimester labs and again between 24 and 28 weeks. There is increased risk with obesity (body mass index over 30), a history of gestational diabetes in a previous pregnancy, a strong family history of diabetes, previous birth of an unusually large baby, a prior unexplained stillbirth, a prior baby with a birth defect, or if you have high blood pressure.

How is gestational diabetes managed?

It depends on how serious your condition is. You'll need to keep diligent track of your glucose levels using a home glucose meter or strips. Eating a well-planned diet can help you keep well-controlled glucose levels. The American Diabetes Association recommends getting nutritional counseling from a registered dietician who will help you develop specific meal and snack plans based on your height, weight, and activity level. Once enrolled in the Sweet Success Program, you will be asked to monitor your diet and keep a record of your blood sugars.

Studies show that moderate exercise also helps improve your body's ability to process glucose, keeping blood sugar levels in check. Most women with gestational diabetes benefit from 30 minutes of aerobic activity, such as walking or swimming, each day.

If you are not able to control your blood sugar well enough with diet and exercise alone, you may have a medication prescribed. You may be a candidate for oral medications (glyburide or metformin). About 15 percent of women with gestational diabetes need insulin.

Will my baby be monitored during my pregnancy to avoid complications?

You should begin kick counts after 28 weeks of pregnancy. Your doctor may ask you to initiate kick counts in the 3rd trimester of your pregnancy. A common way to do a kick count is to see how much time it takes to feel 10 movements. Ten movements (such as kicks, flutters, or rolls) in 1 hour or less are considered normal. But do not panic if you do not feel 10 movements. Less activity may simply mean the baby is sleeping. If an hour goes by and you have not recorded 10 movements, have something to eat or drink and count for another hour. If you do not record 10 movements in the 2-hour period, call your doctor right away. Most physicians will perform non-stress tests during the last few weeks of your pregnancy. You will also have an ultrasound to determine a size estimate and make sure the placenta is not overly mature.

Third Trimester Information

Cord Blood Collection - Saving Newborn Stem Cells

Your baby's umbilical cord blood and tissue are rich in valuable stem cells. These genetically unique newborn stem cells can only be collected after birth, immediately after the umbilical cord has been cut. If they are not saved for your family or donated for public use, your baby's stem cells are discarded as medical waste. Here are some of the most common questions expectant parents have about saving newborn stem cells:

Why do families choose to collect and store their babies' cord blood?

Most families save their babies' cord blood stem cells for the assurance of having these stem cells safely stored in case they are needed by a family member. Each family has its own reasons for saving their baby's stem cells whether to potentially harness the advances in stem cell science or because of an illness in the family. Here are some common reasons why expectant parents save their newborn's stem cells:

• **Family History** – If your family has a history of a disease that is treatable with stem cells, such as certain cancers and blood disorders, consider banking your baby's stem cells. It is important to remember, however, that not all medical needs can be foreseen.

• **Minority or Mixed Ethnicity** – Ethnic minorities and children of mixed ethnicity may have greater difficulty finding stem cell donors when needed.

• **Fertility Issues/Absence of Full Sibling** – Families preparing to adopt a newborn, use a surrogate, or undergo fertility treatments may choose to save their baby's stem cells because, if needed, the cord blood may be the only genetically related source of stem cells available.

Are cord blood and cord tissue stem cells different?

Yes, cord blood is a rich source of hematopoietic stem cells, which create the blood and immune system. Cord tissue is a rich source of mesenchymal stem cells, which create connective tissue. Because of the different functions of these stem cells, cord blood and cord tissue may help repair the body in different ways. Newborn stem cells are currently being studied in a broad range of applications, including treatment for spinal cord injury, cartilage damage, and brain trauma.

How are cord blood and cord tissue collected?

Cord blood and cord tissue collection are simple, safe, and painless procedures that usually take less than five minutes and can be performed after vaginal or cesarean births.

• **Cord Blood** — After your baby has been born and the cord has been clamped and cut, the blood will be drawn from the umbilical cord. Your baby's cord blood will then be sent to a laboratory for processing and storage.

• **Cord Tissue** — Following cord blood collection, your doctor will collect a 4- to 8-inch segment of the umbilical cord and place it in a provided container. The collection will then be sent to a laboratory for storage.

How do I choose a cord blood bank?

Many companies provide this service. A list can be obtained at www.parentsguidecordblood.org. When choosing, look for a well-established bank that has the best technology to collect, process, and save the most stem cells for your family. Having more stem cells for treatment has been shown to improve medical outcomes. Look for a company that has a strong reputation with Ob/Gyns, has a long history of providing samples for transplant and treatment, and is proactive in clinical trials using cord blood stem cells.

Labor Information

Birth Plans

Many first-time expectant couples attend prenatal classes. After you complete your classes, please ask your physician any questions that arise. The philosophy of the physicians at OB/GYN Partners for Health is one of nonintervention. Many patients choose natural child birth, and your physician and the labor and delivery staff are supportive. Keep an open mind to additional options should they be needed. Pain medications and anesthesia are usually available if requested. Shaves, enemas, intravenous fluids, internal monitoring, and episiotomies are not performed routinely. Intervention is kept to a minimum. Our goal is to keep you and the baby healthy and to provide a positive experience. A written birth plan is not necessary.

Signs of Labor

- Contractions – during the last weeks of pregnancy, you may experience uterine contractions. Braxton-Hicks contractions serve as warm-up exercises for the uterine muscle. Labor contractions are more regular in timing and stronger in intensity, frequency, and duration. Labor contractions do not go away when you lie down or rest.
- Rupture of membranes – Either a gush of fluid or a slow leaking of fluid may occur when the amniotic sac ruptures. This occurs before labor begins about 15% of the time. The fluid is usually clear and odorless.
- Bloody show – A small amount of bleeding is commonly seen after an exam in the office or just before the onset of labor. This may or may not contain the mucus plug. Unfortunately, neither the passage of blood nor the mucus plug will predict when labor will begin. It is not necessary to call the doctor if you have bloody show or lose your mucus plug.

False Labor (Braxton-Hicks)

These contractions often are irregular and do not become closer together. They may stop when you walk, rest, or change position. Often felt low in the abdomen, these contractions are usually weak and do not become stronger in intensity. Resting usually makes them stop.

Preterm Labor

Preterm labor occurs at less than 37 weeks. Many patients have occasional irregular contractions, also known as Braxton-Hicks that may be painful. If you have more than 5 contractions in an hour, stop all activities, drink extra fluids and stay in bed. If you continue to have more than 5 contractions in an hour before 37 weeks, call your obstetrician.

Full Term Labor

Your baby is considered mature after 37 weeks. It is normal to have bloody show and mucus during early labor and after office visits if your cervix has been checked. This is due to the cervix softening or stretching.

Call Your Doctor

When in doubt, call. The guidelines offered here are guidelines, not rules. Please call if you have any one of the following:

- When contractions are 5 minutes apart, from the start of one contraction to the start of the next, and when contractions are 45 seconds to one minute in length, and have been so for at least one hour. If you can talk through the contraction, it is probably too early to call.
- If your water breaks and you have a positive Group B Streptococcus culture (GBS).
- If you have heavy bleeding.
- If your baby is not moving normally.
- If the baby is known to be other than head down (breech or transverse) and labor begins or the water breaks.
- If you are scheduled for a cesarean section and labor begins.
- If this is not your first labor and your cervix is dilated when checked in the office, call when you know you are truly in labor. Your second delivery may be much faster than your first delivery.

If this is your first baby, and your pregnancy has been uncomplicated, you may want to stay home as long as possible. When labor begins, try resting. Start timing contractions when they become very painful and difficult to speak through. You may try walking, taking a warm bath, or watching a movie to keep yourself distracted until it is time to call your doctor.

If you have had a prior vaginal delivery, your labor may be more rapid than your first experience. Call when your contractions are regular or painful. If you have had very rapid labors or are dilated before labor, your doctor may tell you to call at a time earlier than suggested above.

During the day, call the office at (510) 893-1700. If you are calling after hours and you are in active labor, call the same number and leave your message with the answering service operator, who will then contact the physician on call. They doctor on call will ask you some additional questions and possibly may ask you to come in to be evaluated. If that occurs, go straight to the Labor and Delivery unit is and they will most likely direct you to the triage area. After an initial evaluation by the nursing staff, they will contact the doctor on call for orders. If you are preterm or have any other problems after hours other than normal labor, please make sure you specify that. Please spell your name completely, give your date of birth, the physician that you normally see and the correct phone number. Please have the exchange “read back” the information so that it can be conveyed correctly to the doctor on call.

When the doctor calls you, please communicate anything unusual about your pregnancy such as diabetes, history of herpes, positive group B strep culture, high blood pressure, breech presentation or previous cesarean section. If the doctor on call is delivering a baby or is in surgery, there may be a slight delay in returning your call. If you feel the delay is too long, please do not hesitate to contact the answering service a second time, usually after about 15 minutes. You may also call labor and delivery directly or go straight to labor and delivery if there is still no return call.

Hospital Preparation – Labor and Delivery

The nurses at the hospital will evaluate your labor and communicate with the doctors throughout your labor. Your baby will be monitored when you first arrive, and later in labor when you are no longer able to walk. Orders are given to nursing that include recommendations for walking, using the shower or spa, diet, monitoring, and pain medications or epidural. Shaves, enemas, intravenous fluids, internal monitoring, and episiotomies are not performed routinely. Intervention is kept to a minimum. Our goal is to keep you and the baby healthy and to provide a positive experience.

When you are admitted to the hospital, you will be assigned a room and a nurse. If you know that you want pain medication or if you are a GBS carrier, an IV may be started. Your blood pressure, the contractions and the baby's heart rate will be monitored. Your cervix will be checked to assess dilation, effacement, and the baby's head position.

The baby's heart rate and electronic pattern will be evaluated with an external fetal monitor. A small monitor is held in place by a thin elastic band and records the baby's heart rate to determine the baby's well-being. A second monitor shows the frequency and length of the uterine contractions.

After you are in strong labor and no longer wish to walk or sit in the room, you can rest in the labor bed. You may be positioned on your side, sitting up or lying down depending on what is most comfortable to you and what position the baby tolerates best. No food is allowed during labor due to an increased risk of nausea and vomiting. You will be offered ice chips and clear liquids instead.

What should I bring to the hospital?

You may wish to bring your pillow, slippers, camera, music, nightgown or pajamas, nursing bras, robe, toilet articles, computer or iPod, baby outfit, and infant car safety seat. If you know that your baby is going to be small, make sure the car seat is the appropriate size.

How long does labor last?

Labor begins with uterine contractions and the opening of the cervix. The uterus tightens and relaxes at regular intervals, causing the abdomen to feel hard, then soft. These contractions make the cervix thin (efface) and dilate. Labor is considered active when the cervix is dilated to 5-6 centimeters. On average, a first labor lasts 12-20 hours. Second and subsequent labors are much faster.

How long will I stay in the hospital after delivery?

Your insurance will allow you to stay in the hospital for 48 hours after a vaginal delivery and 96 hours (4 days) after a cesarean section. If you are feeling good, the baby is doing well, and you have help at home, you may request an earlier discharge from the hospital. To be discharged after a cesarean section, you must be tolerating a normal diet, taking oral medications and walking. It is not necessary to have a bowel movement before discharge.

Stages of Labor

Labor consists of regular contractions that occur closer together as time goes on and continue despite movement or rest. They increase in strength and severity with time. Contractions are usually felt in the lower back and radiate to the front of your abdomen. Blood-tinged mucous (bloody "show") is caused by cervical mucus, which passes out of the vagina as the cervix dilates. It does not mean that labor will start soon, only that the cervix is beginning to soften and dilate in preparation for labor.

Labor begins when the cervix starts to dilate and ends when the baby is born. Labor is divided into several phases, beginning with the latent phase. Latent phase is of variable duration and can last many hours or even days. The latent phase of labor ends and active phase begins when the cervix is 5-6 centimeters dilated. In a low risk pregnancy, it is best to stay at home during this phase. The active phase of labor usually progresses rapidly at about one centimeter per hour in first labors and much more rapidly with subsequent labors.

The second stage of labor begins when the cervix is fully dilated and it is time to push the baby out. Once the cervix is fully dilated, you will often feel extreme pelvic pressure. “Pushing” involves bearing down during each contraction until the baby is born. This stage may last for generally 1-3 hours and ends with the birth of the baby. Rest between contractions so as not to exhaust yourself. Once your baby's head is delivered, the airways are cleared by suction. The baby is delivered and usually placed on the mother’s abdomen. The cord is clamped by the physician and is then cut, often, by a family member. The baby stays with the mother until additional baby assessment is needed.

After delivery, the placenta is delivered and the vagina is repaired if stitches are needed. This is the third stage of labor. Pitocin is generally given to help the uterus contract and control bleeding.

Vaginal Delivery

Most deliveries are spontaneous without intervention. If your doctor finds it necessary to induce you, the indication will be explained. Most interventions are used to prevent a worse outcome. Interventions are not used unless they are considered both safe and necessary. Risks and benefits of interventions as well as alternatives will be discussed. Forceps and vacuum are used to prevent a cesarean section; an episiotomy is used to prevent lacerations. The following are brief explanations of possible procedures:

Episiotomy

A small incision on the perineum used to open the vagina and allow delivery of the head or to facilitate delivery in the event of fetal distress. It is used to prevent lacerations and tears into the rectum, clitoris and vagina. Most physicians will cut an episiotomy only if necessary. K-Y jelly and massage are often used during the second stage of labor to stretch the vagina and allow a smaller tear or episiotomy. Local or epidural anesthesia is given before the episiotomy to avoid discomfort.

Forceps

These instruments look like large spoons. They are inserted in the vagina and gently placed on baby's head to facilitate delivery in the event of fetal distress or a very long second stage.

Vacuum

A soft plastic cup is placed on the baby's head to facilitate vaginal delivery. Suction is used to hold the cup in place so that the infant can be delivered during a contraction with the mother pushing. It is frequently used for prolonged pushing and maternal exhaustion to avoid a cesarean section.

Cesarean Delivery

Reasons for a cesarean section include an abnormal position of the fetus (breech), a medical complication of the pregnancy (pre-eclampsia, active herpes, heart disease), a previous cesarean section, a large baby, a fetal heart rate abnormality signaling distress, or a baby that is “stuck” (cephalo-pelvic disproportion or CPD). Cesarean sections are either scheduled (planned or elective) or unplanned (emergency or after laboring). If a cesarean section is required, the reason will be discussed with you in detail. Your partner may stay with you throughout the procedure.

If you are scheduled for a planned cesarean section, you should arrive at the hospital two hours before your surgery time. Enter through the main entrance and go directly to Labor and Delivery.

If you have not preregistered, please do so at least one day before your surgery. For a scheduled cesarean section, do NOT have anything to eat or drink (including water) after midnight the night before surgery or 8 hours prior to surgery. You will meet the anesthesiologist the morning of surgery. A spinal is normally given for a scheduled cesarean section.

If you have been laboring and have an epidural already, this will be used for your delivery. If you do not have an epidural, a spinal is the usual anesthetic. Your anesthesiologist will discuss this with you. Once you are comfortable with your anesthetic, your lower abdomen is shaved, a catheter is placed in your bladder and your abdomen is washed with sterile soap. Drapes are placed to maintain a sterile environment. Your physician will start the procedure after you are ready and comfortable.

After delivery, the baby will be examined by a pediatric nurse and a neonatologist in a room next to the operating room. Amniotic fluid is suctioned from the baby’s mouth and nose and the baby will be returned to you in the operating room. Your partner can stay with the baby during the brief time that the baby is out of the operating room. After the procedure, you will be in the recovery room with your family until your anesthesia wears off. This usually takes about two hours. Your baby is usually weighed in the recovery room after your surgery. The baby remains with you during the entire hospitalization unless you request the nurses to watch the baby in the nursery.

The IV and bladder catheter will remain in place for the first 12 – 24 hours. Once you are tolerating liquids, the IV can be discontinued. The nurses will ask you to stand during the first day and then start walking soon after. You may eat regular food when you are hungry. We encourage you to start oral pain medication as early as possible. Ibuprofen is also given to increase the effectiveness of the narcotic (Tylenol with Codeine, Vicodin or Percocet) and decrease the discomfort from uterine contractions after delivery.

Labor Induction

Labor can be initiated by your physician for medical reasons or electively. Induction can be initiated with a cervical ripening agent (misoprostol or cervidil), by breaking the amniotic sac or with pitocin. If your doctor recommends induction, the indication and the process will be discussed in detail. Generally, an induction is "scheduled" at the hospital for a specific day and time. Orders are faxed to the hospital by your physician. Call Labor and Delivery at least 2 hours before your scheduled induction time to see if you can go in as scheduled. If the hospital is busy due to already laboring patients, the labor and delivery nurses will ask you to arrive at a later time, and if your induction is semi-elective, there is a chance that you will have to be rescheduled to another day.

Reasons for induction include postdates (usually one week past your due date), a history of complications in labor, premature rupture of membrane (water breaking early), high-risk pregnancy (diabetes or hypertension), low amniotic fluid, macrosomia (big baby) or elective (after 39 weeks).

Postpartum Information

Appointments

If you have had a cesarean section, schedule an appointment 2 to 3 weeks after surgery. Your doctor will advise you if you need additional appointments. If you have had a vaginal delivery, schedule an appointment 6 weeks after delivery, unless otherwise instructed by physician. Be prepared to discuss birth control options at your postpartum appointment.

Activity

Rest as much as possible. During your first weeks at home, restrict your activities to caring for the baby. You will heal faster and be at less risk for depression. Take frequent naps. Limit your visitors. You may begin light exercise when you feel like it. Do not push yourself. Walking is better for you than running or lifting weights the first six weeks after birth. After six weeks, you may slowly build back up to your normal exercise routine.

If you had a cesarean section, walking up and down stairs will not harm you. You probably should not carry anything heavier than the baby for the first week or two. Use common sense – if it hurts, don't continue with that activity.

You may drive when you feel comfortable and have stopped taking pain medications. Wait two weeks or more if you have had a cesarean section. Sitz baths, showers, and baths are safe after vaginal delivery. Do not use a Jacuzzi until the vaginal discharge stops or bathe after a cesarean section until the incision is healed (usually 5-7 days).

Intercourse is permissible after the vaginal discharge and bleeding stop, usually at three to four weeks. If you have had vaginal stitches, you should wait six weeks. Condoms should be used with a water-soluble lubricant such as K-Y jelly or Astroglide.

Vaginal Delivery

After delivery, you will experience bleeding and a discharge for 4 to 6 weeks. It may last longer. The discharge is called lochia. It may be any color, and often has an odor. This continues until the uterus has healed. If you had a vaginal tear or episiotomy, your vaginal area may be swollen or sore. Urination may cause external stinging and should resolve after several days. Taking sitz baths or a warm bath 2 to 3 times a day will help with the discomfort and promote healing. You may use Tucks on stitches or hemorrhoids for comfort. These may be bought without a prescription. The stitches will dissolve by themselves, and do not need to be removed. Do not worry if you see a stitch or knot fall off.

Cesarean Section

Cesarean section incisions have many layers that heal at the same time. There are strong stitches below the skin. Glue and steri-strips should be removed a few days after the surgery. It is not necessary to cover your incision while showering. Use a blow dryer to keep the incision dry if your skin folds over the incision. Your incision may ooze slightly as the skin heals. Call the office for an appointment if your incision opens, has a large amount of discharge or bleeding, or if it becomes red or painful.

Recovery: Diet, Bowel and Bladder Care

You may return to your regular diet at home. If you are breast-feeding and took prenatal vitamins during your pregnancy, continue them while nursing. Increase your diet by 500 calories, and drink 8 to 10 glasses of water each day. Consume more fruits and vegetables.

After delivery, you may become constipated. Fiber supplements and stool softeners (Colace) are available without a prescription. Benefiber, Citrucel, and Fibercon are effective fiber supplements. Drinking water is very important for the stool softeners to work. If you become constipated with no bowel movement for a few days, you may need a laxative such as Miralax, Ducolax or Senakot. If still no bowel movement occurs within a few days, use a Fleets enema.

To prevent a bladder infection, drink plenty of water and urinate frequently. If you develop burning or pain with urination, call the office.

Medications

You may also continue to use the same medications used during your pregnancy. If you have any questions about medication, call your doctor.

Anti-inflammatory Medication

Ibuprofen and Naprosyn are nonprescription pain relievers that reduce cramping, bleeding and discomfort. The usual dose of Ibuprofen (Advil, Nuprin, Motrin) is 600 mg every 6 hours, not to exceed 2400 mg in 24 hours and Naprosyn (Aleve) is 220 mg, 2 initially, then 1 every 6-8 hours, not to exceed 1100 mg in 24 hours. Tylenol is also useful for pain relief and can be taken with Ibuprofen and Naprosyn as they work differently.

Narcotics

Percocet, Vicodin, or Tylenol #3 are narcotics that may be prescribed by your physician if you have had a cesarean section. Narcotics may cause drowsiness, fatigue, nausea, and constipation in the mother. They can be used while breast-feeding. Ibuprofen and Naprosyn work synergistically with the narcotic so that you need less of it. You may use Ibuprofen 2400 mg/24 hours or Naprosyn 1100 mg/day. Continue the anti-inflammatory medication after you stop taking the narcotic to continue with pain relief. Because narcotics contain Tylenol, do not take additional Tylenol. Ibuprofen is best with narcotics or by itself.

Symptoms to Report

- Excessive bleeding, soaking a pad in one hour with bright red blood, or passing large clots (call immediately).
- Chills or fever over 100.4 degrees.
- Severe pain.
- Persistent headache, changes in vision, rapid swelling of face, feet, hands or overall body.
- Increased pain, redness, swelling odor or discharge from episiotomy site or cesarean incision.
- Depression lasting more than 2-4 weeks.
- Breast infection - fever in association with red, painful breast.
- Bladder infection - frequency, urgency, or pain with urination.

Common Postpartum Discomforts

Bleeding

You may stop bleeding and then restart bright red bleeding several times during the first six weeks after delivery. Called "lochia," bleeding and discharge can occur in 3 stages. The first stage is red, lasting for about 3 days. The second is watery-pink, lasting for 1-3 weeks, and the third is yellowish-white, lasting another 3-6 weeks. Change sanitary pads frequently. Passing clots is also common during the postpartum period. Clots can be bright red, dark red, small or large and are frequently associated with severe cramping. Ibuprofen helps with the pain. Call for excessive bleeding, soaking one pad per hour with bright red blood or continuing to pass large clots.

Cesarean Incision

Your scar may pucker and be tender for 2-3 months as it heals. It is common to feel numbness up to the umbilicus for 6 months. The edges of the incision may be more swollen than the center because of knots used to close the layers located at the sides of the incision. The top of the incision frequently hangs over the lower edge during the healing process until the lymphatic system begins to function normally. Call the office if the incision becomes red, more inflamed, more tender, or begins to leak fluid. Please remove steri-strips or glue from the incision one week after delivery.

Constipation

Hormonal changes, dehydration, breast-feeding and inactivity cause constipation. Try increasing the fiber in your diet, drinking more water, and using stool softeners.

Cramping

These are due to the uterus contracting as it returns to normal size. These may be increased with breastfeeding. We recommend changing your position often, emptying your bladder often, using a heating pad, and taking Ibuprofen to help with the contractions.

Depression and Emotional Changes

It is normal to feel overwhelmed, exhausted, and sleep deprived. The lifestyle changes, exhaustion, and fluctuating hormones frequently cause anxiety and feelings of helplessness. After delivery, your body will undergo many changes. The demands of a new baby and inadequate sleep may lead to feelings of depression. For most women, these feelings may only last 4-7 days. Resting, maintaining a good diet, and planning time for you away from baby are important. Ask for help from your family and friends. If depression persists longer, or seems more severe, please do not hesitate to schedule an appointment with your doctor.

Engorged Breasts

Try using ice packs and wearing a sports bra or nursing bra all the time. If you are nursing, your body should regulate the engorgement within the first few weeks. Nursing is supply and demand. If you are not breastfeeding, avoid stimulation of the breasts.

Episiotomy

Use ice packs the first 1-2 days and Ibuprofen as needed for swelling and discomfort. Taking a warm bath, using a sitz bath, a spray bottle, or a rubber ring/donut to sit on may also help. As you heal, you may notice the stitches beginning to pull and itch. Swelling decreases so the stitches begin to loosen. The body absorbs sutures used in repairing an episiotomy over the next 6 weeks.

Hair Loss

Thinning hair is normal postpartum, with the most noticeable change 5-6 months after delivery.

Hemorrhoids

Keep your stools soft by using a stool softener. Try Preparation H, Anusol creams, and using a spray bottle after bowel movements. Do not over wipe. Consider Tucks pads and baby wipes.

Hormonal Changes

It is common after delivery to experience hot flashes, night sweats, mood swings, and vaginal dryness similar to what women experience in early menopause. Your estrogen level drops with delivery and is reduced until you finish nursing and your regular menses resumes. If the symptoms are troublesome, you can discuss estrogen replacement with your physician. A small dose of oral or transdermal (patch) estrogen will reduce the vasomotor symptoms of hot flashes and night sweats. If vaginal dryness is the only symptom, vaginal estrogen cream can be prescribed.

Hot Flashes

Hot flashes occur frequently when nursing. The body treats nursing like menopause with all the same symptoms due to lack of estrogen. Hot flashes, depression, and vaginal dryness all increase during breast-feeding. Starting a combination oral contraceptive pill or using an estrogen patch usually helps decrease the symptoms. If you are nursing, the estrogen in the pill may decrease milk supply. Vaginal estrogen does not affect nursing.

Leg Swelling

It is normal for your legs to swell after the delivery. There are large fluid shifts after delivery. This usually resolves by your 6-week postpartum check.

Sex

If you had a cesarean section or a vaginal delivery without an episiotomy, you may attempt intercourse four weeks after delivery. If you had a vaginal delivery with an episiotomy or laceration, wait until after your postpartum visit. You may need to use lubrication (Astroglide or K-Y Jelly), especially if you are breastfeeding. If vaginal dryness persists, vaginal estrogen cream can be prescribed by your physician.

Urinary Leakage

Urinary stress incontinence is caused by decreased perineal muscle tone and lack of estrogen. Do Kegel exercises to reverse the process. Using estrogen vaginally (prescription) can also help restore the tissue if dryness is an issue.

Vaginal Dryness

Breast-feeding causes vaginal dryness. Lubrication may help the symptoms. It can be treated with prescription estrogen products that are placed vaginally.

Breast Care and Breastfeeding

If you are breast-feeding your milk should come in within 3 to 5 days after delivery. Breast-feeding on demand will help reduce engorgement and increase the milk supply. Use warm water, without soap, to keep your breasts clean. Soap may dry and crack your nipples. If your nipples crack, expose them to air for 15 minutes after breast-feeding. Lanolin ointment may be applied after this. Most babies eat about eight times each day. Try to nurse your baby for at least 15 minutes on one breast and for about 10 minutes on the other breast. It is normal to have more bleeding and/or cramping when breastfeeding. This is a hormonal response to the breast stimulation.

If you have difficulty nursing, contact Women and Children's services or La Leche League. Pump rentals may also be arranged. Breast milk can be stored in a sterile container in the refrigerator for up to 72 hours or in a standard freezer for 1-2 weeks. A good on-line source for information is www.kellymom.com.

Mastitis (breast infection)

You may be developing mastitis if you have a high fever associated with a painful, red breast. Other signs of a breast infection include increased pulse rate, chills, malaise, headaches, and an area on the breast that is red, tender, and hard. Treatment involves antibiotics, rest, frequent breastfeeding or pumping, and analgesics for pain and fever. Please call if you suspect mastitis.

If you are not nursing the baby

Wear a tight-fitting bra to reduce engorgement. Cold compresses may help, and consider Tylenol or Ibuprofen for the discomfort. There is no medication approved by the Food and Drug Administration to prevent engorgement.

Medication use while nursing

- Safety of commonly used medications while nursing can be accessed at LactMed (https://toxnet.nlm.nih.gov/newtoxnet/lactmed.htm). LactMed is a database of medications that women might be exposed to while breastfeeding. The database is hosted by the National Library of Medicine. It contains information about the medication, ways it might affect the mother or baby, and potential alternatives to consider.
- The Organization of Teratology Information Specialists (also known as OTIS) provides information, in English and Spanish, for women and healthcare providers on the risks and safety of taking medication during pregnancy and breastfeeding. This group maintains a website called Mother to Baby. To speak with an OTIS counselor, you can call 1-866-626-6847. OTIS also conducts studies of pregnant women volunteers who have contacted their services.

Breastfeeding Resources

Women's Health (CDC): www.cdc.gov/women

La Leche League - (800) LA LECHE or www.lllusa.org or www.lalecheleague.com.

Nursing Mothers Counsel - (415) 599-3669 or www.nursingmothers.org

Lactation Institute and Breastfeeding Clinic - (818) 995-1913

Mead Johnson Nutritionals - (800) BABY123. Request Delivery and Beyond (Publication LF63) and Breastfeeding: The Best Start for Your Baby (Publication LF808). http://www.mjn.com/app/iwp/hcp2/content2.do?dm=mj&id=-12539&iwpst=MJN&ls=0&csred=1&r=3455533955

Contraceptive Options

More comprehensive information is available at

http://www.cdc.gov/reproductivehealth/UnintendedPregnancy/Contraception.htm

Withdrawal Method

Removal of the penis from the vagina before ejaculation. The success rate is about 72%.

Rhythm

Intercourse is timed to avoid the fertile period during a menstrual cycle, using body temperatures and graphs, and avoiding intercourse during these fertile times. The success rate is about 70%.

Vaginal Spermicide

Foams, suppositories, tablets, or jellies are inserted into the vagina before intercourse. The success rate is about 79-95%.

Condom

A rubber sheath worn over the penis during genital contact. It acts as a barrier to transmission of semen and/or organisms that may cause sexually transmitted diseases (non-latex condoms do not act as a barrier for HIV). The success rate is about 88-98%.

Diaphragm

A vaginal barrier method used in combination with spermicidal cream or jelly. The success rate is about 82-94%.

IUD (intrauterine device)

A small device placed into the uterus. The Mirena IUD lasts 5 years, the Skyla lasts for 3 years and the Paragard lasts 10 years. IUDs are more effective than the birth control pill and more effective than tubal ligation. See www.mirena-us.com, http://www.skyla-us.com/index.php, or www.ParaGard.com. The success rate is about 98%.

Nexplanon

A small, thin, implantable progesterone contraceptive that is effective for up to three years and is placed under the skin in the forearm. The success rate is 99%.

Minipill

A progesterone only oral contraceptive. It is used frequently while nursing because it does not decrease the quantity of breast milk. The success rate is 97%.

Oral contraceptive pill (OCP)

A cyclic pill of both estrogen and progestin. It suppresses ovulation, diminishes growth of the endometrium, and increases the thickness of mucus around the cervix, preventing the passage of sperm through the cervix. The success rate is 98-99.5%.

Depo Provera (Contraceptive Injection)

A progesterone injection that stops ovulation and prevents sperm from entering the uterus. It is given every 12 weeks (3 months) and starts working within 24 hours after injection. The success rate is 99.5%.

Nuvaring and OrthoEvra

A vaginal ring or patch that secretes both estrogen and progesterone locally into the uterus and vagina to prevent ovulation and implantation. They are as effective as the OCP.

Vasectomy (Male)

This is considered permanent birth control. An incision is made over the vas deferens on each side of the scrotum to cut the ducts and prevent active sperm from release. The procedure is usually performed by a Urologist in his office under local anesthesia. A sperm count is necessary after the procedure to confirm its success.

Tubal Sterilization (Female)

This is a surgical procedure to permanently cut or remove the fallopian tubes. This procedure can be performed at the time of cesarean section, the time of delivery or later as an outpatient surgery. An anesthetic is required for the surgery. Removing the tubes completely will reduce future chance of ovarian cancer.

Fetal Kick Counts

Kick counts are a good way to monitor your baby's movements and should be performed daily after 28 weeks. Monitor the baby's movements at the same time each day. Healthy babies are very active, especially after meals.

The baby normally has sleep and wake cycles or periods of activity and rest. Usually there are at least four noticeable movements or "kicks" most hours of the day. Such activity is reassuring. As the baby grows larger, you may feel fewer "big" movements. When you are busy during the day, you may not notice your baby moving as much as when you are at rest. Kick counts should be done with an empty bladder about one hour after a meal, while resting on your left side to promote circulation.

To perform kick counts, pay attention to any kick or rolling movement of the baby. If four movements occur within 60 minutes, your baby has "passed the test". The best time to do the test is after a meal, the same time each day. If by one hour you have not been aware of four movements, you may have been too busy with other activities. Repeat the test while resting on your left side. If you still have not noted four movements in the next hour, telephone the office (even on weekends and holidays). You may be requested to come into the office or to go to the hospital for further evaluation.

Fetal Kick Count Form

Date	Time	Number of Movements	Date	Time	Number of Movements

Date	Time	Number of Movements	Date	Time	Number of Movements

Additional Resources

Dietary

USDA: http://www.mypyramid.gov/mypyramidmoms/
March of dimes: http://www.marchofdimes.com/pnhec/pnhec.asp
Food insight: http://www.foodinsight.org/
Body mass index: www.nhlbisupport.com/bmi
Patient education: http://patienteducation.upmc.com/Pdf/NutritionPregnancy.pdf
Food and Nutrition Service: www.fns.usda.gov/fns/
Weight guidelines:
http://198.102.218.57/dietaryguidelines/dga2000/document/aim.htm#weight_top
Pregnancy and breastfeeding nutrition information reading list:
www.nal.usda.gov/fnic/pubs/bibs/topics/pregnancy/pregcon.html
National Women's Health Information Center (NWHIC): www.4woman.gov/pregnancy
Perinatal nutrition working group: www.hmhb.org/pnwg/health-and-nutrition.html
Toxic Matters: www.prhe.ucsf.edu/prhe/tmlinks.html
A Seafood Lover's Guide to Eating During Pregnancy:
http://issuu.com/national_fisheries_institute/docs/seafood_lovers_guide?mode=embed&layout=http://skin.issuu.com/v/light/layout.xml&showFlipBtn=true
Expect the Best: Your Guide to Healthy Eating Before, During, and After Pregnancy by Elizabeth M. Ward, MS, RD
What to Expect When You're Expecting (4th ed) by Heidi Murkoff and Sharon Mazel.

Postpartum Depression

http://www.lowmg.com/info/ob/ob_cond/pp_dep_resources.pdf
Postpartum Support International (805) 967-7637 **www.postpartum.net**
Postpartum Support line (888) 773-7090
PPD Support Online **www.ppdsupportpage.com**
Health and Human Services **www.mchb.hrsa.gov/pregnancyandbeyond/depression** Support for Dads **www.postpartumdads.org**The National Women's Health Information Center **http://www.womenshealth.gov/faq/depression-** pregnancy.cfm
Massachusetts General Hospital **www.womensmentalhealth.com**
The March of Dimes **http://www.marchofdimes.com/pnhec/188_15755.asp**Depression After Delivery, Inc. **www.depressionafterdelivery.com/Home.asp**
Maternal Child Health Bureau Hotline: (800) 311-2229;
www.mchlibrary.info/KnowledgePaths/ kp_postpartum.html
American Academy of Family Physicians **http://familydoctor.org/379.xml**

Beyond the Blues, A Guide to Understanding and Treating Prenatal and Postpartum Depression by S. Bennett and P. Indman, 2003 **www.beyondtheblues.com** (408) 255-1730
Conquering Postpartum Depression by Rosenberg, et al., 2003
This Isn't What I Expected by K. Kleiman and V. Raskin, 1994
The Postpartum Husband by K. Kleiman, 2000
Postpartum Depression for Dummies

Glossary of Pregnancy Terms

Abdominal Wall Defects (AWD) – Developmental defects involving the intestines and other organs that form outside the body.

Anencephaly – Anencephaly refers to an incomplete development of the brain that usually results in death.

Amniocentesis – A small amount of amniotic fluid is removed by a needle and is sent to test for chromosomal abnormalities such as Down syndrome and Trisomy 18. Amniotic fluid also screens for neural tube defects such as spina bifida.

Chorionic Villus Sampling (CVS) – This test may be offered at 10-14 weeks of pregnancy. A small number of cells are taken from the placenta and are diagnostic for Down syndrome and Trisomy 18. The advantage over amniocentesis is that it is performed earlier in pregnancy. On the negative side, CVS does not detect neural tube defects.

Detailed or Level II Ultrasound – A specialized ultrasound that includes basic information as well as detailed anatomical information about the fetus in the second trimester. It is recommended for women who will be 35 years or older at delivery, Screen Positive with the Full Integrated or Serum Integrated Screen or who have other high-risk indications. A Level II ultrasound is always performed with an amniocentesis and is performed at a Prenatal Diagnosis Center.

Diagnostic Test – CVS and amniocentesis are invasive tests that obtain amniotic fluid or placental tissue to grow chromosomes from the fetus. The test can tell if the fetus actually has a specific birth defect. Screening tests estimate the risk of certain birth defects.

Down Syndrome – Down syndrome is a chromosome abnormality that causes mental retardation and certain types of birth defects. It is due to an extra copy of chromosome 21, so that, three copies (trisomy) versus the normal two copies of this particular chromosome are present. Down syndrome affects approximately one in every 800 newborns. The chance of having a pregnancy affected with Down syndrome increases with increased maternal age. Women age 35 years and older are more likely to have a child affected with Down syndrome.

FFN (Fetal fibronectin) - A test of the cervical mucus that is used to rule out labor. 99% of the patients with a negative test do not go into labor during the following two weeks. It is used between 22 and 34 weeks in patients with symptoms of preterm labor. The test can be repeated every two weeks in symptomatic women.

First Trimester Testing or Preliminary Risk Assessment – A blood test is drawn between 10 weeks and 13 weeks and 6 days of pregnancy and combined with a nuchal translucency (NT). A positive test results in referral to a Prenatal Diagnosis Center. Another option is having the second blood test at 15-20 weeks to complete the Full Integrated Screen.

Full Integrated Screen – This combines the First Trimester Screening (blood test and NT) with a second trimester blood test to detect 90 out of 100 with Down syndrome, 81 out of 100 with Trisomy 18, 97 out of 100 with anencephaly, 80 out of 100 with open spina bifida, 85 out of 100 with abdominal wall defects and 60 out of 100 with SLOS.

Genetic Carrier Screening - Genetic testing can confirm a suspected genetic condition or help determine a person's chance of passing on a genetic disorder. Individual disease testing or a screening panel can be ordered.

Genetic Counseling – A genetic counselor reviews test results and family medical history. The counselor explains genetic testing, results of genetic tests, genetic conditions and obstetric diagnostic procedures.

Glucola Test - A screening test for gestational diabetes that takes one hour at the laboratory and is taken between 24 and 28 weeks of pregnancy. If the test is positive, a three-hour glucose tolerance test is necessary.

Neural Tube Defects (NTD) – During the first 5 weeks of fetal development, the neural tube develops into the brain and spinal cord. Abnormalities in development may cause spina bifida or anencephaly.

NIPT (Non-invasive Prenatal Test) - DNA from the fetus circulates in the maternal blood. Circulating cell-free fetal DNA (ccffDNA) can be detected as early as 10 weeks of pregnancy. The DNA is used to screen for trisomy 21 and a few other abnormalities. The fetal gender can also be determined with this test. If the test is positive, a diagnostic test is necessary to confirm the results.

Nuchal Translucency (NT) – An ultrasound preformed between 11 weeks 2 days and 14 weeks by a perinatologist to measure the back of the fetus' neck. This measurement helps screen for Down syndrome and Trisomy 18. It is used in conjunction with two blood tests to complete the California Full Integrated Screening. Check with your insurance company to determine your benefits.

Prenatal Diagnosis Center – A center that offers genetic counseling, diagnostic testing and detailed ultrasound for screen positive results. Obstetrix Medical Group (408) 371-7111 is the local diagnosis center.

Prenatal Screening Program – The California screening program offers Serum Integrated Screening. With a Screen Positive result, the California Prenatal Screening Program includes referral to a Prenatal Diagnosis Center for the same fee.

Prenatal Screening Test – Screening tests offer risk assessment to determine whether further diagnostic tests should be done. These tests cannot detect 100% of birth defects.

Quad Marker Screen – One blood specimen drawn between 15 and 20 weeks of pregnancy that gives a risk assessment for detection of 80 out of 100 Down syndrome, 67 out of 100 Trisomy 18, 97 out of 100 anencephaly, 80 out of 100 open spina bifida, 85 out of 100 abdominal wall defects and 60 out of 100 SLOS.

Rh Incompatibility – This is due to the mother having Rh negative antibody in the blood and the father of the baby having Rh positive antibody in his blood. If the baby has Rh positive blood type from the father, it can cause the mother to produce an antibody response against the baby. This is prevented by the mother receiving Rhogam after amniocentesis, at 28 weeks and again after delivery.

Rhogam – Rhogam is a shot given to Rh-negative mothers to prevent Rhesus disease in the newborn. IgG antibody (Rhogam) binds to fetal cells in the maternal circulation to prevent the mother from producing antibodies that could harm subsequent pregnancies.

Risk Assessment – An estimate of certain birth defects obtained with the Prenatal Screening Program.

Serum Integrated Screen – Two blood specimens drawn (first and second trimester) to detect 85 out of 100 with Down syndrome, 79 out of 100 with Trisomy 18, 97 out of 100 with anencephaly, 80 out of 100 with open spina bifida, 85 out of 100 with abdominal wall defects and 60 out of 100 with SLOS.

Screen Negative – The screening result shows that the screen for abnormality is unlikely. California reports risk of 1 in 100 or less to be negative. This does not guarantee that there are no birth defects.

Screen Positive – If the test shows a "positive" of 1 in 200 chance of having a baby with Down syndrome, the program authorizes follow-up services at a Prenatal Diagnosis Center which includes genetic counseling, a detailed ultrasound, CVS and amniocentesis. Obstetrix Medical Group offers genetic counseling and diagnostic testing (CVS or amniocentesis) to anyone who screens less than 1 in 1000 chance of Down syndrome or Trisomy 18. A positive screen does not always mean that there is a birth defect. Most women will have normal follow-up diagnostic tests.

SLOS or Smith-Lemli-Opitz Syndrome – A very rare metabolic defect in which babies cannot make cholesterol normally and results in mental retardation and physical defects. Screen positive results for SLOS can also indicate increased chances of other congenital abnormalities and fetal demise.

Spina Bifida – When there is an opening in the spine, it is called spina bifida and can cause paralysis in the lower extremities as well as loss of bowel and bladder function.

Trisomy 18 – Trisomy 18 is a fatal chromosome abnormality that causes multiple birth defects and profound mental retardation. Few Trisomy 18 infants survive into childhood. Trisomy 18 results when the fetus has three, instead of the normal two, copies of chromosome 18. Like Down syndrome, the chance of an increased risk for fetal abnormality is determined by the test and then genetic counseling, ultrasound examination, and when needed, amniocentesis will aid in the diagnosis. Having a pregnancy affected with Trisomy 18 increases with increased maternal age.

Trisomy 21 - Down Syndrome.

Ultrasound – A device known as a transducer is used to direct high frequency sound waves to visualize the developing baby. The sound waves create an image of the baby's features and can determine growth and development of the baby.

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