Preconception

External Links and Resources

**Improving Health and Fertility**
- [http://www.marilynglenville.com/infertility.htm](http://www.marilynglenville.com/infertility.htm)

**Preconception Checkup**
- [http://www.cdc.gov/ncbddd/preconception](http://www.cdc.gov/ncbddd/preconception)

**Monitoring Fertility to Increase Conception Chances**
- [http://www.fertilityfriend.com](http://www.fertilityfriend.com)

**Reproductive Technology**
- [http://www.cdc.gov/ART](http://www.cdc.gov/ART)
Preconception

Improve Your Health and Enhance Fertility

As you prepare for pregnancy, it’s key to remember that your health and the father-to-be's health are important for a healthy egg and sperm, and a healthy pregnancy and baby! The time to begin improving your health is four months prior to conception, as sperm development and egg maturation both take about 100 to 120 days. The sooner you start making healthier choices, the better. Even if you’ve already been trying to conceive, you can improve your chances of becoming pregnant and having a healthy pregnancy with the tips below.

PRECONCEPTION WELLNESS

*Eat a healthy diet to prepare your body for pregnancy.*

Start by taking 400 micrograms of folic acid per day (or 1 milligram if you have diabetes or epilepsy, or are obese). Folic acid greatly reduces the risk of certain birth defects and miscarriage. It may be best to get folic acid in supplement form; the Institute of Medicine says that the body only absorbs about 50 percent of the folate (naturally occurring folic acid) in foods and 85 percent of the folic acid in fortified foods (like bread and cereal), but 100 percent of the folic acid in vitamin supplements.

*Drink plenty of fluids:* Budget a ½ ounce a day per pound that you weigh (for example, a 150-pound woman should drink 75 ounces of fluids).

*Take a good multivitamin,* but avoid taking over 10,000 international units (IU) of vitamin A in one day. Taking in too much vitamin A can cause birth defects.

Choose healthy, whole foods (organic, if possible) with few additives and hormones. For more nutritional recommendations, see Chapter 6 (Eating Well) of *Pregnancy, Childbirth, and the Newborn* and the Nutrients, Vitamins, and Minerals: Daily Recommendations chart in the Eating Well section. The recommendations for pregnancy will be helpful for you, but don’t add any extra calories yet!

*It’s also important to diagnose food allergies, intolerances, and malabsorption problems before you become pregnant.*

*Get to a healthy weight before conceiving.*

Ideally, your body mass index (BMI) should be between 20 and 25 before pregnancy. A BMI under 18 is considered underweight and a BMI over 25 is considered overweight. (Visit [http://www.nhlbisupport.com/bmi/](http://www.nhlbisupport.com/bmi/) to calculate your BMI.)

If you are underweight, you might have reduced fertility. While your ovaries might produce and release eggs, the lining of your uterus might not be adequate for a healthy pregnancy. If you are severely underweight, you might not be menstruating, and might be infertile. Additionally, beginning pregnancy underweight can increase your chances of preterm birth and your baby’s chances of a low birth weight and the complications that come with it. If you’ve had an eating disorder, work with a counselor and your physician to address any related issues prior to pregnancy. If the father-to-be is underweight or has lost significant body weight recently, he may have decreased sperm count or function.

If you are overweight (BMI between 25 and 30) or obese (BMI over 30), you may find it difficult to conceive. And if you do become pregnant, you have a higher risk of gestational diabetes, pregnancy induced high blood pressure, preterm labor, complications during pregnancy and birth, and cesarean birth, and your baby is more likely to be big, have birth defects, and experience childhood obesity.

*Do what you can to reach a healthy weight, and maintain that weight prior to becoming pregnant.*

*Exercise: Begin pregnancy strong and fit.*

Moderate exercise (two to six hours per week) can enhance fertility by regulating hormones, improving circulation to the ovaries and uterus (or to the testes for the father-to-be). It also improves mood and reduces stress. But don’t overdo it. Extreme exercise (such as running 100 miles in a week) can decrease fertility through impaired ovulation for women and reduced sperm count for men.
PRECONCEPTION HEALTH CARE

See your dentist for a checkup before you conceive.

Have any fillings that need to be done, but ask for those without mercury (it's not necessary to remove existing mercury fillings). It's important to treat any existing gum disease, as it can increase the risk of miscarriage and premature birth.

See your physician for a medical checkup before you conceive.

Your physician should screen both you and the father-to-be for human immunodeficiency virus (HIV), syphilis, and other sexually transmitted infections, as they can increase the risk of infertility, miscarriage, and disabilities in babies, including cognitive delays and blindness.

Your physician should also address any medical conditions that could complicate conception, pregnancy, or birth. For chronic conditions, try to optimize control of the condition and medication levels before pregnancy. Chronic conditions (such as hypertension, diabetes, and epilepsy) could cause health problems for you and your baby if they are not well controlled prior to pregnancy.

Several medications are known to cause birth defects or otherwise affect pregnancy and healthy fetal development. Below are medical conditions and corresponding medications that could cause problems. It's important to discuss these conditions with your caregiver before pregnancy, and some may also require close monitoring during pregnancy.

- **Diabetes**: Improve your diet and exercise and optimize your medication use to keep your blood sugar well controlled before pregnancy. Talk to your physician about whether you need to switch from oral medications to insulin. For more information, see http://www.marchofdimes.com/professionals/19695_1197.asp.
- **Hypertension**: You can improve your blood pressure through eating a better diet, exercising, and quitting smoking. Work with your physician to adjust your medications before pregnancy. Avoid angiotensin-converting enzyme (ACE) inhibitors, angiotensin II receptor antagonists or blockers (ARBs), and thiazide diuretics. For more information, see http://www.babycenter.com/0_chronic-hypertension-during-pregnancy_1427404.bc?showAll=true.
- **Epilepsy**: Optimize control and take 1 milligram of folic acid daily. Avoid Lamictal. For more information, see http://www.epilepsyfoundation.org/living/women/pregnancy/wepregnancy.cfm.
- **Depression/anxiety**: Seek counseling and support; avoid Paxil and benzodiazepines, which may cause birth defects. Tricyclic antidepressants and some selective serotonin reuptake inhibitors (SSRIs) are okay.
- **Hypothyroid**: Increase medication dosage early in pregnancy.
- **Anticoagulants**: Switch from those known to cause birth defects, such as warfarin (Coumadin), to Heparin.
- **Acne**: Avoid Accutane.
- **Ulcers**: Avoid misoprostol (Cytotec).
- **Birth control**: Stop taking birth control pills six months before you plan to conceive or Depo-Provera six to nine months before you plan to conceive.

It's important for your physician and pharmacist to know that you're planning to conceive, so they can assess new medications, herbs, and supplements for any potential risks and make substitutions as needed.

Get up-to-date on your vaccinations.

If you haven't had the chicken pox, you should get the varicella vaccine. You can be tested for immunity to rubella and if you're not immune (10 percent of U.S. women aren't), you should get vaccinated, as rubella during pregnancy can cause miscarriage, stillbirth, and birth defects. Rubella and varicella are live-virus vaccines, so they should be given at least one month before you conceive. Consider getting the hepatitis B vaccine if you're at risk of sexually transmitted or blood exposure.

Consider genetic screening.

Genetic screening may be recommended to you, depending on your and the father-to-be's age and ethnicity. Here are the diseases you may be screened for, as well as how common they are for each ethnic background. (The percentage indicates what number of each ethnic group is a “carrier” of the disease. If only one parent is a carrier, your child will not have the disease. However, if both parents are carriers, your child will have a one in four chance of having the disease.)

- **African**: sickle cell anemia (10 percent), beta thalassemia (5 percent)
- **European Jewish**: Tay-Sachs disease (4 percent)
• **French-Canadian:** Tay-Sachs disease (5 percent)
• **Mediterranean:** Alpha and beta thalassemia (10 to 20 percent)
• **Southeast Asian:** Alpha and beta thalassemia (20 to 40 percent)
• **Indian, Middle Eastern:** Sickle cell anemia, alpha and beta thalassemia (Incidence varies depending on specific ethnic group.)
• **Caucasian:** Cystic fibrosis (3 percent)

If certain diseases, such as cystic fibrosis and congenital hearing loss, are present in your family history, you may need additional screening.


**PRECONCEPTION HAZARDS**

*Reduce or eliminate use of harmful substances.*

Both you and the father-to-be should reduce your use of caffeine, alcohol, tobacco, and illegal substances four months before you plan to conceive. This chart summarizes the potential risks of each hazard.

### Harmful Substances

<table>
<thead>
<tr>
<th>Harmful Substances</th>
<th>Affects sperm count/motility</th>
<th>Causes sperm malformation</th>
<th>Reduces fertility</th>
<th>Increases miscarriage</th>
<th>Increases birth defects</th>
<th>Increases preterm birth or low birth weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caffeine</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td>Alcohol</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Tobacco/Smoking</td>
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<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Illegal substances</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

All effects are dose-related. If you consume only a small amount of a substance, the potential side effects are small. The more you use, the higher your risks will be.

- **Caffeine:** Consuming caffeine in amounts up to 200 to 300 milligrams per day (1 or 2 cups of coffee, 3 cups of tea or 72 ounces of soda) is considered safe for preconception and pregnancy by most authorities. However, multiple studies indicate that drinking even 1 cup of regular coffee per day can decrease chances of conceiving by half, and some show a clear correlation between miscarriage and even small amounts of caffeine. It’s probably best to avoid or minimize caffeine use during preconception to maximize your chances of conceiving and maintaining a pregnancy.

- **Alcohol:** Drinking as few as five drinks per week can significantly reduce fertility, so consider avoiding alcohol when trying to conceive. You should also avoid it after conception. Alcohol use in pregnancy increases the chance of miscarriage, developmental delays, and growth retardation.

- **Smoking and secondhand smoke:** If you and/or your partner are smokers, your fertility can be significantly impaired.

Once pregnant, you have a higher risk of miscarriage, premature birth or low birth weight, and are more likely to have a baby with congenital malformations, especially cleft palate, deafness, and abnormalities of the central nervous system. For more on harmful substances and resources to help you quit using them, visit [http://www.childbirthconnection.org/article.asp?ck=10299&ClickedLink=486&area=27](http://www.childbirthconnection.org/article.asp?ck=10299&ClickedLink=486&area=27).

*Reduce your exposure to environmental hazards.*

Both you and the father-to-be should reduce your exposure to the following environmental hazards:

- **Heavy metals, which are linked to infertility, miscarriage, and birth defects, including:**
  - **Lead:** Avoid traffic fumes, lead-based paint, and home renovation.
  - **Mercury:** Avoid fish containing high levels of mercury, amalgam fillings, tattoo inks, and manufacturing involving mercury.
  - **Cadmium:** Avoid smoking cigarettes and ingesting secondhand smoke.
  - **Aluminum:** Avoid food or beverages cooked or stored in aluminum and use aluminum-free baking powder, antacids, and deodorant.
• **General:** Filter your water. Take garlic, vitamins C, B₁, B₁₂, calcium, magnesium, iron, zinc and manganese to combat heavy metal toxicity.

• Solvents, pesticides, chemical fumes from paints, thinners, wood preservatives, glues, benzene, and dry cleaning fluids

• Bisphenol-A (BPA) plastics (For more information, see http://children.webmd.com/features/bisphenol-a-9-questions-and-answers)

• Carbon monoxide and anesthetic gases

• Ionizing radiation (from x-rays and radioactive materials)

• High temperatures: Fathers-to-be should limit hot showers, saunas, and hot tub use to under ten minutes with a temperature of lower than 102°F. Excessive heat to the testicles can reduce sperm production and sperm motility.

If you’re exposed to hazards at your workplace, shower afterward and wash your work clothes separately. Ask your employer for Material Safety Data Sheets (MSDS), good ventilation, and protective gear.

**Reduce your exposures to infections.**

Use good food safety practices to protect yourself from food-borne illnesses. Wash your hands and use gloves and other universal precautions to protect yourself from other bacterial and viral infections.

**PRECONCEPTION EMOTIONAL WELLNESS**

**Focus on your emotional health.**

Like many people, you may have emotional baggage from difficult life situations that could challenge your coping mechanisms in pregnancy and labor. Attending counseling, workshops, or support groups, as well as journaling and reading self-help books are ways to explore and process these issues, and learn new coping skills before your baby is born.

**Reduce stress**

There is no clear evidence that stress can reduce fertility; however, stress can depress your immune system, raise your blood pressure, and alter your hormonal function. And stress *does* increase the risk of miscarriage.

Follow these steps to reduce stress:

• Identify things that cause stress for you.

• Eliminate the causes that you can.

• Find ways to cope, such as journaling, counseling, and relaxation techniques.

• Do things that help you feel good: Exercise, sleep well, eat well, spend time with friends, and do other things that you enjoy.

**Work on your relationship with your partner.**

The stronger your relationship is before your baby is born, the more easily it will weather the challenges of parenting. Read *And Baby Makes Three* by John Gottman and Julie Schwartz Gottman or other books on becoming parents, or take a Bringing Baby Home workshop (http://www.bbhonline.org), a Becoming Parents workshop (http://becomingparents.com/), or other workshops on relationship skills. Try any by Gary Chapman, Marlena Lyons and Jett Psaris, or Gay and Kathlyn Hendricks. Consider couples’ counseling.

**Think about your finances.**

FERTILITY ISSUES

If you’re worried about your fertility, keep the following information in mind:

• It’s normal to take six months to conceive.
• For adults under thirty, the chance of conceiving on any monthly cycle is 20 percent. For adults in their forties, the chance is 5 percent.6
• You are not considered a couple with fertility issues until you have been trying for more than a year (or more than six months if you’re over age forty.)
• Optimum fertility can be an issue of timing. Sperm can survive within a woman for three days. Once an egg is released (ovulation), it’s viable for twelve to twenty-four hours. Thus, timing intercourse in the three days prior to ovulation significantly increases your chance of conceiving.7

• For more on how to predict and detect ovulation, go to http://www.fertilityfriend.com to learn about fertility awareness (monitoring cervical position and cervical mucus) and ovulation detection (through basal body temperature charting, saliva testing or ovulation predictor kits).
• For couples of all ages who timed intercourse so that it fell within their fertile window of five days prior to ovulation: 38 percent became pregnant in the first month of trying, 81 percent were pregnant by the end of six months of trying, and 92 percent were pregnant by the end of one year of trying.8
• Intercourse two days before ovulation carries a 50 percent chance of conception for a couple aged nineteen to twenty-six (30 percent at ages thirty-five to thirty-nine) versus intercourse four days before ovulation, which carries a thirty percent chance of conception (20 percent at ages thirty-five to thirty-nine).9
• Infertility is often due to an imbalance that can be corrected:
  - Pay attention to your overall nutrition and fitness level and minimize exposure to hazards, as described above, to enhance fertility.
  - Certain nutrients are especially helpful to ingest when you’re trying to conceive, especially antioxidants: vitamins B6, E, and C, and zinc and selenium, as well as anti-inflammatory omega-3 fatty acids (for both you and the father-to-be). Amino acids L-arginine and L-carnitine are helpful for men.10
  - Some herbal supplements also can enhance fertility: You can try vitex (chaste tree berry), Siberian ginseng, red clover blossom, red raspberry leaf for women. With all supplements, it’s best to consult with a trained provider before taking.
  - Many personal lubricants can reduce sperm motility or weaken sperm.11 Pre-Seed is a brand of lubricant that claims to enhance fertility, by providing an environment similar to fertile cervical mucus.
  - Acupuncture can also aid conception. Consult with a practitioner for advice.

If the measures described here are not enough to help you conceive, you may consider using assisted reproductive technology (ART). To learn more about ART, visit http://www.cdc.gov/ART or http://www.marchofdimes.com/pnhec/173_14308.asp.

END NOTES

You’re Having a Baby

External Links and Resources

Birth Stories

Video Interviews with Women before and after Their Births
- http://doctorberlin.com/custom_content/c_105122_birth_stories.html

The Realities of Early Parenting
- On http://www.amazon.com, use the search term “memoirs of parenting babies” or “memoirs of motherhood,” and choose the ones that appeal to you!
- *The Expectant Father: Facts, Tips, and Advice for Dads-to-Be* by Armin A. Brott (2001). Information-packed guide to the emotional, financial, and physical changes the father-to-be may experience during the course of his partner’s pregnancy.
You’re Having a Baby
Your Experience of Finding Out about Your Baby

How did you find out you were pregnant? ____________________________________________________________
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Who did you tell first? How did they react? __________________________________________________________
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Calculating your due date (Pregnancy, Childbirth, and the Newborn page 36, The Simple Guide to Having a Baby page 4.)

<table>
<thead>
<tr>
<th>Standard Formula</th>
<th>Sample</th>
<th>Your Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of first day of your last period (LMP)</td>
<td>April 15</td>
<td></td>
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<tr>
<td>Minus 3 months</td>
<td>January 15</td>
<td></td>
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<tr>
<td>Plus 7 days to get your due date</td>
<td>January 22</td>
<td></td>
</tr>
</tbody>
</table>

Have you been given other due dates? (for example, from ultrasound dating) ________________________________
_______________________________________________________________________________________________

It’s normal for a baby to be born anywhere from two weeks before to two weeks after the due date. Write those dates here, so you remember that your baby might be born any time between ________________ and ________________.

Connecting to your baby
When did you first hear the heartbeat? (Typically occurs after twelve weeks with Doppler stethoscope.) ________________
_______________________________________________________________________________________________
When did you first feel your baby move? (Typically occurs after eighteen weeks.) __________________________
_______________________________________________________________________________________________
When was the first time someone else could feel your baby move? ________________________________
_______________________________________________________________________________________________

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You’re Having a Baby

Your Experience of the First Trimester
(From conception to fourteen weeks)

How are you feeling physically?
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________________________________________________________________________________
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Describe your emotions at this point:
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________________________________________________________________________________
________________________________________________________________________________
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What are your friends and family members thinking about your pregnancy and baby?
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________________________________________________________________________________
________________________________________________________________________________
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What are you doing to prepare for your baby?
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You’re Having a Baby

Your Experience of the Second Trimester
(From fifteen to twenty-seven weeks)

How are you feeling physically?
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Describe your emotions at this point:
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What are your friends and family members thinking about your pregnancy and baby?
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What are you doing to prepare for your baby?
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You’re Having a Baby

Your Experience of the Third Trimester

(From twenty-eight to thirty-eight weeks)

How are you feeling physically?

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Describe your emotions at this point:

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What are your friends and family members thinking about your pregnancy and baby?

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What are you doing to prepare for your baby?

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You’re Having a Baby
Your Experience of the Final Weeks

How are you feeling physically?
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Describe your emotions at this point:
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What are your friends and family members thinking about your pregnancy and baby?
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What are you doing to prepare for your baby?
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________________________________________________________________________________
You’re Having a Baby

Your Experience of Early Labor

Fill this out when you think you *may* be in labor. Note that many women have several “false starts”—they think they’re in labor, and then contractions stop, only to start again a few days later… so you may need a few copies of this page.

Date: _______________


What are your signs?__________________________________________________________________________________________
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________

**Distractions** (PCN page 243, SG page 87)

What are you doing to distract yourself, stay calm and relaxed, and not get too worked up about early labor?__________

____________________________________________________________________________________________________________
____________________________________________________________________________________________________________

**Timing Contractions**

When distractions aren’t working anymore, and you need to work to cope with the contractions, time them. (See the Early Labor Record chart in the When and How Labor Begins section.)

<table>
<thead>
<tr>
<th>Starting Time (in seconds)</th>
<th>Duration (in seconds)</th>
<th>Interval or Frequency (minutes since beginning of last contraction)</th>
<th>Comments</th>
</tr>
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<tbody>
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</tbody>
</table>

**Coping with Early Labor** (PCN page 243, SG pages 86-87)

What are you doing?__________________________________________________________________________________________
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________

**Calling Your Care Provider** (PCN page 244, SG page 85)

When did you call? ____________________________________________

What did he or she say?______________________________________
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________

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You’re Having a Baby

Your Experience of Active Labor and Birth

During labor, fill out as much of this work sheet as is convenient. Then write in more notes in the days after the birth, while your memories are still fresh.

**Deciding to go to the hospital or birth center, or calling the midwife to come:**
How did you know it was time? How was the trip?________________________________________________________________
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________

**Arriving at the birthplace or your midwife’s arrival**
What was the news on arrival?_________________________________________________________________________________
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________

What was it like? How did you cope? What happened?____________________________________________________________
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________

**Birth (Pushing or Cesarean)** (*PCN* 258-65, *SG* 98-101)
What was it like? How did you feel? What happened?____________________________________________________________
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________

**Birth Date:** ____________________________  **Time of Birth:** ____________________________

**Baby’s Name:** ____________________________  **Weight:** ____________________________  **Length:** ____________________________
You’re Having a Baby
Your Experience of Beginning a New Family


What were your first thoughts and feelings after the birth? What was happening?
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________

Baby’s First Day

What did your baby look like?
____________________________________________________________________________________________________________
What did your baby do?
____________________________________________________________________________________________________________
What were the most challenging parts of the day?
____________________________________________________________________________________________________________
The funniest?
____________________________________________________________________________________________________________
The sweetest?
____________________________________________________________________________________________________________

Introducing Your Baby to Your Community

Who were the first people you told about the birth?
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________
Who were your baby’s first visitors?
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________
Were there gifts for you or your baby?
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________

Introducing Your Baby to the World

What was it like going home for the first time?
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________
So Many Choices

External Links and Resources

Learn More about Your Maternity Care Choices
- http://www.childbirthconnection.org
- *Deliver This! Make the Childbirth Choice That's Right for You… No Matter What Everyone Else Thinks* by Marisa Cohen (2007)

Questions to Ask When Choosing a Birthplace

Consumer Reviews of Local Birthplaces and Caregivers; Information about Local Intervention Rates
- http://www.thebirthsurvey.com

Find a Birth Center
- http://www.birthcenters.org/find-a-birth-center/

Find an Obstetrician
- http://www.acog.org/member-lookup/

Learn More about Family Physicians
- http://familydoctor.org

Learn More about Midwifery
- http://cfmidwifery.org

Find a Nurse-midwife
- http://www.acnm.org/find.cfm

Find a Licensed Midwife or Certified Professional Midwife
- http://www.mana.org/memberlist.html
- http://cfmidwifery.org/find/

Find a Childbirth Educator
- http://www.icea.org
- http://www.lamaze.org
- http://www.bradleybirth.com
- http://www.birthingfromwithin.com

Find a Birth or Postpartum Doula
- http://www.dona.org
- http://www.doulamatch.net

Find a Lactation Consultant
- http://www.ilca.org

World Health Organization’s Baby-Friendly Award for Hospitals That Support Breastfeeding
- http://www.babyfriendlyusa.org

Information about Childbirth Preparation Classes
Benefits of Classes

- http://www.parenttrust.org/for-families/parenting-advice/parenting-tips/additional-tips/class-or-epidural/

Information about Doulas


Waterbirth

- Waterbirth International: http://www.waterbirth.org
- Evidence-based review: http://pdfcast.org/pdf/the-use-of-water-during-childbirth

Maternity Leave

So Many Choices

Questions to Ask about Health Insurance


If you need help paying for health care, call 1-800-311-BABY (1-800-311-2229) or contact your local health department.

Timing: Find out about your options as early in pregnancy as possible.

Find out what your insurance covers:
Check your written policy guidelines, contact your insurance company, or check with your employer's human resources department to find out the answers to these questions.

- Does your insurance cover pregnancy and birth?
- What types of care providers are covered: OB ☐ Family practice ☐ Midwives ☐
  Is there a specific list of providers you must choose from?
- What birthplaces are covered: Hospital ☐ Birth center ☐ Home birth ☐
  Are there certain facilities you must use?
- Are there set copayments? ______________. Do you need to pay a percentage of the costs? ______________
- Will they cover routine prenatal care?
- Will they cover prenatal tests, including ultrasound, amniocentesis, etc.? ______________
- Will they cover prescription medications? ______________ Is there a copay? ______________
- What do you need to do to inform them of the pregnancy and birth?
- Will they cover childbirth preparation classes? ______________ Will they cover birth doula services?
- Will they cover pain medication and anesthesia fees?
- How long can you stay at the hospital after the birth?
- What newborn care will they cover? Routine care ☐ Special care ☐ Circumcision ☐
- Will they cover lactation consultants to help with breastfeeding?

If you do need to pay out of pocket, or pay a portion of the costs:
- Call the patient account office at your birthplace or call your caregiver to find out what to expect.
- What is the typical charge for prenatal and postpartum care?
- What is a typical charge for a vaginal delivery with a one-day stay?
- What is the typical charge for a cesarean with a three-day stay?
- What are the costs for pain medication for labor, or for a cesarean?
- Will you be charged for nursery care for your baby, even if your baby stays in your room with you?
- What will happen if your baby needs any special care?
- Can you prepay the costs? ______________ If you prepay for pain medication, can that money be refunded if you choose not to use pain medication?

After the birth
Plan to contact your health insurance company within thirty days of your child’s birth, adoption, or placement for adoption and request a special enrollment to cover the event.
So Many Choices

Questions to Ask about Birthplaces


**Timing:** Plan to visit or call birthplaces in your first or second trimester. Before you visit, review the birthplace’s web site and any written materials you have, to see which questions are answered there. Also, review the birth plan chapter to see what issues you may want to ask about (PCN Chapter 8, SG Chapter 4).

<table>
<thead>
<tr>
<th>Birthplace:</th>
</tr>
</thead>
</table>

**Who can be with me:**

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Who can be with me during labor and birth?</td>
<td>______________________________________________________________________</td>
</tr>
<tr>
<td>What are the visitor policies after the birth?</td>
<td>______________________________________________________________________</td>
</tr>
<tr>
<td>What is the ratio of patients to nurses during early labor</td>
<td>__________________________</td>
</tr>
<tr>
<td>Are doulas welcome?</td>
<td>______________________________________________________________________</td>
</tr>
</tbody>
</table>

**Hospital routines for labor and birth:**

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are birth plans encouraged?</td>
<td>_____________________________________________________________________</td>
</tr>
<tr>
<td>What happens during a normal labor and birth in this setting?</td>
<td>_____________________________________________________________________</td>
</tr>
<tr>
<td>What equipment is used to monitor the baby’s heart rate?</td>
<td>_____________________________________________________________________</td>
</tr>
<tr>
<td>How often is it monitored?</td>
<td>_____________________________________________________________________</td>
</tr>
<tr>
<td>Can I walk and move around during labor?</td>
<td>_____________________________________________________________________</td>
</tr>
<tr>
<td>Do most laboring women have intravenous (IV) fluids?</td>
<td>_____________________________________________________________________</td>
</tr>
<tr>
<td>Can I eat during labor?</td>
<td>_____________________________________________________________________</td>
</tr>
<tr>
<td>What positions are suggested for the birth?</td>
<td>_____________________________________________________________________</td>
</tr>
<tr>
<td>What non-drug methods of pain relief are encouraged?</td>
<td>_____________________________________________________________________</td>
</tr>
<tr>
<td>What comfort tools are available? (Bathtub? Birth ball?)</td>
<td>_____________________________________________________________________</td>
</tr>
<tr>
<td>How often is the bathtub used for comfort?</td>
<td>_____________________________________________________________________</td>
</tr>
<tr>
<td>Can I give birth in the tub?</td>
<td>_____________________________________________________________________</td>
</tr>
<tr>
<td>Is anesthesia available at all times?</td>
<td>_____________________________________________________________________</td>
</tr>
<tr>
<td>If I have a cesarean, where will it take place?</td>
<td>_____________________________________________________________________</td>
</tr>
<tr>
<td>Who can be with me?</td>
<td>_____________________________________________________________________</td>
</tr>
</tbody>
</table>

**After the birth:**

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>What usually happens to a baby immediately after birth?</td>
<td>_____________________________________________________________________</td>
</tr>
<tr>
<td>Will my baby go to the nursery or stay with me?</td>
<td>_____________________________________________________________________</td>
</tr>
<tr>
<td>May I hold my baby for the initial assessments?</td>
<td>_____________________________________________________________________</td>
</tr>
<tr>
<td>What if my baby is born early or has special problems?</td>
<td>_____________________________________________________________________</td>
</tr>
<tr>
<td>How long is the usual stay after a vaginal birth?</td>
<td>_____________________________________________________________________</td>
</tr>
<tr>
<td>After a cesarean?</td>
<td>_____________________________________________________________________</td>
</tr>
<tr>
<td>How does the birthplace help mothers who want to breastfeed?</td>
<td>_____________________________________________________________________</td>
</tr>
<tr>
<td>Are there breastfeeding specialists on staff?</td>
<td>_____________________________________________________________________</td>
</tr>
<tr>
<td>May I call them after I go home?</td>
<td>_____________________________________________________________________</td>
</tr>
<tr>
<td>Does the birthplace offer support after I go home?</td>
<td>_____________________________________________________________________</td>
</tr>
</tbody>
</table>
Your Options: Preparing for a Home Birth

If you’re considering a home birth, interview your potential midwife(s). You can ask her the questions on the Questions to Ask about Birthplaces list above, and those on the Questions for Potential Caregivers list. She will be able to answer these questions and tell you what supplies you’d need for a home birth, when to call her to attend your birth, what happens if she needs to transfer you to a hospital, and more.
So Many Choices

Questions for Potential Caregivers


Timing: It’s best to choose a caregiver in early pregnancy, so you can begin getting prenatal care. These questions may aid you in your initial choice or if you need to switch care providers in later pregnancy.

• Physician or Midwife’s name: ______________________________________________________________________________
• Where were you trained? _____________________________________ How long ago? ______________________________
• How many births have you attended? _______________________________________________________________________
• What portion of the labor and birth process do you typically attend? _____________________________________________

Who Provides Care:

• Will I see you or another caregiver at each prenatal appointment? _______________________________________________
• Does a nurse sometimes handle prenatal visits? _______________________________________________________________
• Do the caregivers in your group share a similar philosophy of care? _____________________________________________
• What are the chances you’ll attend my birth? __________________________________________________________________
• Will your colleagues respect the birth plan I’ve made with you? _________________________________________________
• Will the hospital staff respect the birth plan? _________________________________________________________________
• Do you recommend childbirth preparation classes? _____________ Doulas? _____________ Birth plans? _____________

Managing Labor:

• Which non-drug ways to relieve labor pain do you recommend? ________________________________________________
• May I move around during labor? _____________________________________________________________________ May I eat? ____________________
• What positions do you recommend for birth? _______________________________________________________________
• How many of your clients attempt natural childbirth (birth without pain medication)? __________________________
  How many succeed? ______________________________________________________________________________________
• Do you avoid routine interventions if possible? __________________________________________________________________
  What are your standard orders related to IV fluids and fetal monitoring? _________________________________________
  Can those routines be altered to conform to my needs and desires? ___________________________________________
• How often do you find it necessary to perform an unplanned cesarean birth with a first-time mother having a low-risk
  pregnancy? ____________ How many of your clients—low- and high-risk—have a cesarean? ______________________
  What can I do to help reduce the likelihood of needing a cesarean? ___________________________________________
  ______________________________________________________________________________________________________
• If I develop complications during pregnancy or labor, will you manage my care or will you refer me to another caregiver?
  __________________________________________________________________________________________ Who is that person? ______________________
• When and how often will I see you for checkups after the birth? __________________________________________________
• How do you help mothers who want to breastfeed? __________________________________________________________
• For midwives, ask: Who is your backup physician? __________________________________________________________
• What conditions lead to a physician referral? _________________________________________________________________

For questions to ask doulas, see: PCN page 24 or http://www.dona.org/mothers/how_to_hire_a_doula.php.
So Many Choices

Finding a Health Care Provider for Your Baby

For more information, see: Pregnancy, Childbirth, and the Newborn page 25. Find out what options are available to you by asking for referrals from: your insurance company, physician, friends, or family.

Timing: Make this choice during the last trimester of pregnancy.

Think about which kind of care provider you would prefer:
- Pediatrician (a physician who specializes in infants and children)
- Family practice doctor (who could see the whole family)
- Nurse practitioner (who focuses on well-child care and would refer you to a physician for any serious illnesses)
- Naturopathic doctor or other alternative practitioner

Think about what kind of health care setting you would prefer:
- Private clinic
- Children's health clinic (May cost less, staffed by physicians and nurses who are completing medical training and are supervised by experienced providers. May see a different caregiver at each visit.)
- Well-child clinic (May be free or low-cost, run by health department. Can provide checkups and vaccinations. May not provide care for illnesses.)

Interview

Once you have narrowed down your choices to your best option, call the clinic and ask the receptionist about: health insurance coverage, your care provider's availability for answering questions during office hours and after hours, and backup care providers. Ask to meet with the care provider. During the interview, ask his or her opinion on these topics:

- Do you support breastfeeding? Formula feeding? Do you have expertise in breastfeeding? _________________________
- Do you work with lactation consultants or other breastfeeding resources? _______ Do you refer to them? __________
- What are your thoughts on circumcision? ____________________________________________________________________
- What are your thoughts on vaccinations? _________________________ Do you support delayed schedules? ________
- How about the refusal of vaccinations? _______________________________________________________________________
- How comfortable are you with the use of home remedies or alternative therapies for minor ailments and common illnesses? _________________ When would you prescribe antibiotics?________________________________________________________
- How available are you (or your office) for phone consultation? ________________________________
  Who takes calls when you're unavailable?___________________________________________________________
- Do you have hospital privileges? _______ Where? _________________________________ If my child must be hospitalized, how involved will you be in his or her care? ____________________________________________
- Will you be available to examine my baby soon after the birth (at the hospital or in my home)?_________

Pay attention to how the question is answered as well as what is said. Try to find someone whose style and philosophy is compatible with your own, and whom you feel you could trust.
So Many Choices

Plan for Maternity/Paternity Leave

For more information, see: http://americanpregnancy.org/planningandpreparing/maternityleave.html or Maternity Leave Insider: http://www.wombtobloom.com/MaternityLeaveInsider.pdf.

**Timing:** Begin exploring options in early pregnancy. Then develop a strategy, so you have a well-planned proposal to present to your employer in your second trimester.

**What options are available to you?**

- Paid parental leave: Does your employer offer it? ____________ If so, how much time is offered? ________________
  What are the requirements for its use? _______________________________________________________________________

- Accrued time: How many days do you have available for pregnancy, birth, and baby care?
  Sick days _______________ Vacation days ___________________ Personal days ________________________

- Short-term disability: Do you have short-term disability coverage through your state, employer, or union? ______ Can it be applied to pregnancy and birth? ______ How much will it pay, and for how long? ________________

- Unpaid leave: Is your employer required to offer twelve weeks of unpaid family leave under the Family and Medical Leave Act (FMLA)? ______ Does your employer have limitations on how you can use this leave time? ________________

- Bringing your baby to work: Is this an option? ________________

**Additional questions to consider:**

- How will leave affect your employee benefits (health insurance, seniority, etc.)? ________________________________

- When do you plan to begin your leave? _____________________________________________________________________

- What can you do to make your leave time go as smoothly as possible for your employer and coworkers? __________

- When do you expect to return to work? _____________________________________________________________________

- Do you want to return to full-time right away, or work part-time at first? ________________________________

**Write your plan here:**

_________________________________________________________________________________________________________

_________________________________________________________________________________________________________

_________________________________________________________________________________________________________

_________________________________________________________________________________________________________

_________________________________________________________________________________________________________

_________________________________________________________________________________________________________

_________________________________________________________________________________________________________

_________________________________________________________________________________________________________

_________________________________________________________________________________________________________

Once you have a plan, present it to your employer so you can begin negotiating the solutions that come closest to meeting your desires while still honoring the needs of your employer and coworkers.
So Many Choices

Choosing a Childbirth Class

For more information, see: *Pregnancy, Childbirth, and the Newborn* page 21, *The Simple Guide to Having a Baby* page 62.

**Timing:** It's usually best to sign up for classes early in your second trimester. Plan to enroll in classes that will end about two to five weeks before your due date, so all the information is still fresh in your mind.

**Find out your options for classes:**

If you have a choice of classes, contact them and ask these questions:

- **Who sponsors the classes?**
- **What is the instructor's background/training?**
- **What is the instructor's experience with birth?**
- **What is the instructor/agency's philosophy about birth?**
- **Does the instructor cover normal childbirth as well as complications?**
- **Does she cover all choices and include their pros and cons?**
- **What topics are covered in the class?**
- **Does she teach self-help comfort measures and natural childbirth techniques?**
- **Are pain medications covered?** Does she describe disadvantages and risks as well as advantages?
- **Does the series cover postpartum adjustment, newborn care, and infant feeding?**
- **How are the classes scheduled:** How many weeks is the class? How long is each session?
- **How much time is spent in lecture, and how much in practicing skills?**
- **What is the cost of the series?**
- **How many students are typically in a class?**
- **Is the instructor available to students by phone, e-mail, or in person for questions outside of class and after the series?**
- **Is there a reunion class after all the babies are born?**
Common Changes and Concerns

External Links and Resources

**Overall Best Books on Pregnancy and Birth**

**Web Sites, E-mails, and Texts**
- [http://text4baby.org/](http://text4baby.org/): Free messages each week on your cell phone to help you through your pregnancy and your baby’s first year.
- [http://apps.facebook.com/birthwatch/](http://apps.facebook.com/birthwatch/): BirthWatch, a Facebook application that posts updates about your pregnancy on your Facebook page and sends you weekly e-mails with helpful tips.

**Specific Pregnancy Issues**

Common discomforts:
- [http://www.mymidwife.org/pregnancy_body.cfm](http://www.mymidwife.org/pregnancy_body.cfm)

Sex during pregnancy:
- [http://www.mymidwife.org/sex.cfm](http://www.mymidwife.org/sex.cfm)

**Special Situations**

Teen parents:

Parents of multiples:
- *Everything You Need to Know to Have a Healthy Twin Pregnancy* by Gila Leiter and Rachel Kranz (2000)

Survivors of childhood sexual abuse:
- *Survivor Moms: Women’s Stories of Birthing, Mothering and Healing after Sexual Abuse* by Mickey Sperlich and Julia Seng (2008)
- [http://www.survivorshealingcenter.org](http://www.survivorshealingcenter.org)
Pregnancy after a previous loss:

Disability and pregnancy:

Videos about Birth (all available from Netflix):
- *Orgasmic Birth*, directed by Debra Pascali-Bonaro (2008)
Having a Healthy Pregnancy

External Links and Resources

Prenatal Testing
- http://www.mymidwife.org/prenatal_guide.cfm
- http://www.marchofdimes.com

Substances to Avoid

Alcohol:
- Alcoholics Anonymous (AA): 212-870-3400 or http://www.alcoholics-anonymous.org (or http://www.aa.org)

Tobacco and smoking:
- 800-CDC-INFO (232-4636) or http://www.cdc.gov/tobacco/quit_smoking/cessation/index.htm

Narcotics:

Drugs and substances:
- U.S. Substance Abuse and Mental Health Services Administration (SAMHSA): 800-662-HELP (800-662-4357) or http://www.samhsa.gov

Environmental Hazards and Other Exposures to Avoid

- U.S. Food and Drug Administration (FDA): 888-INFO-FDA (888-463-6332) or http://www.fda.gov
- March of Dimes: 914-997-4488 (national office) or http://www.marchofdimes.com
- U.S. Environmental Protection Agency (EPA): Visit http://www.epa.gov/epahome/hotline.htm for a listing of hotlines specific to your concerns.
- Environmental Working Group (EWG): 202-667-6982 or http://www.ewg.org
- U.S. Centers for Disease Control and Prevention (CDC): 800-CDC-INFO (232-4636) or http://www.cdc.gov
- The Organization of Teratology Information Specialists (OTIS): http://www.otispregnancy.org/hm/. Dedicated to providing accurate evidence-based, clinical information to patients and health care professionals about exposures during pregnancy and lactation.

Workplace Hazards

- The National Institute for Occupational Safety and Health (NIOSH): 800-CDC-INFO (232-4636) or http://www.cdc.gov/niosh
- U.S. Occupational Safety & Health Administration (OSHA): 800-321-OSHA (6742) or http://www.osha.gov

Domestic Violence

- The National Domestic Violence Hotline: 800-799-SAFE (7233) or http://www.ndvh.org
Having a Healthy Pregnancy

Routine Prenatal Examinations and Screening Tests

I. COMMON ROUTINE EXAMS AND SCREENING TESTS DONE AT PRENATAL VISITS

For more information about the pregnancy complications listed, see Chapter 7 (When Pregnancy Becomes Complicated) in Pregnancy, Childbirth, and the Newborn. To learn about diagnostic tests that are used when a screening test suggests a problem, see page 143 or [LINK to PCNGuide Chart on Diagnostic Tests in When Pregnancy Becomes Complicated].

<table>
<thead>
<tr>
<th>Routine Exam/Test</th>
<th>Purpose</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pelvic (vaginal) exam</td>
<td>First or second prenatal visit: • Confirm pregnancy and estimate size of uterus. • Estimate size and shape of pelvis. • Obtain vaginal secretions to detect infectious organisms. • Screen for cervical cancer (Pap smear).</td>
<td>Might not be done if you’ve had a recent physical exam. See page 132 for a discussion of infections. Having a Pap smear may cause dark brown or reddish vaginal discharge. This is common and doesn’t indicate a problem. Cervical exams in late pregnancy may cause spotting.</td>
</tr>
<tr>
<td></td>
<td>Late pregnancy: • Assess the cervix and station (descent) of baby. • Obtain vaginal secretions to detect infection.</td>
<td></td>
</tr>
<tr>
<td>Urine test</td>
<td>First prenatal visit: • Confirm pregnancy. • Screen for urinary tract bacteria. Each prenatal visit: • Screen for sugar, which might indicate diabetes. • Screen for protein, which might indicate preeclampsia or infection. As indicated: • Detect bacteria or other infectious organisms. • Diagnose a urinary tract infection.</td>
<td>See page 134 for discussion of the blood test for diabetes. See page 140 for discussion of preeclampsia and page 132 on infections. Infectious organisms might or might not cause infection. Other symptoms are investigated to determine infection. Early treatment could decrease risk of preterm labor.</td>
</tr>
<tr>
<td>Blood test</td>
<td>First or second prenatal visit or later, if indicated: • Confirm pregnancy. • Determine blood type and Rh factor or screen for antibodies if you’re Rh-negative. • Test for anemia (hematocrit and hemoglobin). • Test for infectious organisms or antibodies against them (syphilis, hepatitis B virus, human immunodeficiency virus [HIV], rubella (German measles)). • Evaluate blood glucose levels if you have diabetes mellitus.</td>
<td>See page 135 on Rh incompatibility. See page 132 on infections. Other screening tests (see page 67) also involve blood samples.</td>
</tr>
<tr>
<td>Blood pressure check</td>
<td>Each prenatal visit: • Screen for high blood pressure, which might indicate gestational hypertension and/or preeclampsia.</td>
<td>See page 140 for a discussion of gestational hypertension and preeclampsia. Blood pressure readings can be affected by exertion or stress.</td>
</tr>
<tr>
<td>Maternal weight check</td>
<td>Each prenatal visit: • Detect sudden weight gain that could be due to preeclampsia. • Help monitor your nutritional status</td>
<td>See Chapter 6 for a discussion of nutrition and weight gain.</td>
</tr>
<tr>
<td>Abdominal examination</td>
<td>Each prenatal visit: • Measure growth of the uterus (fundal height), which indicates fetal growth and gestational age. Each visit in last weeks of pregnancy: • Estimate position of the fetus (Leopold’s maneuvers). • Estimate amniotic fluid volume. • Detect breech presentation.</td>
<td>If problem is suspected, an ultrasound scan is recommended. See page 295 for more on breech presentation.</td>
</tr>
</tbody>
</table>
### Routine Exam /Test

**Purpose**
- Listening to fetal heart tones (FHT) (with Doppler or fetal stethoscope)
  - Each prenatal visit after FHT can be heard:
    - Check that the fetus is living and doing well.
    - Check the heart rate for fetal well-being.
- Breast exam
  - Once during pregnancy:
    - Screen for breast cancer.
    - Assess condition of your breasts for breastfeeding.
- Dental exam
  - Once or twice during pregnancy, see your dentist:
    - Check for tooth decay and repair, if necessary.
    - Clean teeth, which may prevent gum disease.
    - Check for infection of the gums (gingivitis).
- Fetal movement counts (a.k.a. kick counts)
  - During late pregnancy, you count and record your baby’s movements during a brief period each day.
  - Helps assess well-being of baby.
  - Used to detect changes in the normal pattern of fetal activity.
  - Helps you learn about your baby.
  - Keeping track of your baby’s movements is a more reliable predictor of outcome than reliance on your impressions of fetal activity.
- Ultrasound scan (sonography or sonogram)
  - Ultrasound scans can be performed at any time during pregnancy. Timing depends on the reason for testing.
  - Confirm pregnancy.
  - Help estimate due date and fetal age by measuring structures such as the skull, femur, or crown-rump length.
  - Screen for pregnancy with multiples.
  - Screen for fetal growth problems.
  - Screen for placenta previa.
  - Screen for Down syndrome as part of the integrated screening (as described below).
  - For information about ultrasound used as a diagnostic test, see the Diagnostic Tests chart in the When Pregnancy Becomes Complicated section.

### Comments

- Listening to fetal heart tones (FHT) (with Doppler or fetal stethoscope)
  - With Doppler FHT can be heard at about 9-12 weeks; with a fetal stethoscope, at about 18-20 weeks gestation.
  - Hearing the FHT is exciting for expectant parents and makes the baby seem more real.
- Breast exam
  - Continue breast self-exams regularly throughout pregnancy.
  - See pages 399-405 for conditions that influence breastfeeding.
- Dental exam
  - Gum tenderness and bleeding is common in pregnancy.
  - Gingivitis may worsen during pregnancy or appear for the first time (due to hormonal changes, more bacterial growth, and gum sensitivity).
  - Gingivitis has been associated with preterm labor.
  - Tell your dentist that you are pregnant.
- Fetal movement counts (a.k.a. kick counts)
  - Is noninvasive, free, and simple.
  - Can be done yourself, at your convenience, in your own home.
  - May raise (or lower) your anxiety over your baby’s well-being.
  - See page 69 for directions.
- Ultrasound scan (sonography or sonogram)
  - Appears safe, but it’s unknown if excessive exposure is harmful. Should only be used if medically indicated and not for “keepsake” pictures.
  - Adds expense to prenatal care.
  - Gives immediate results to sonographer who performs the ultrasound, but he or she doesn’t give the information to you. A physician interprets and reports results to you or to your regular caregiver.
  - Accuracy varies depending on the quality of equipment, skill of person interpreting results, and gestational age of fetus.
  - Vaginal ultrasound may be better for detecting some problems such as placenta previa and ectopic pregnancy and for checking cervical length to evaluate risk for preterm labor.
  - May help identify your baby’s gender (sex).
  - Accuracy depends on fetal age, fetal position, and quality of testing.
  - May increase your anxiety if “possible problems” are reported without a way to immediately confirm results.

### II. Other Exams and Screening Tests Offered in Pregnancy

<table>
<thead>
<tr>
<th>Routine Exam /Test</th>
<th>Purpose</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fetal movement counts (a.k.a. kick counts)</td>
<td>Helps assess well-being of baby.</td>
<td>Is noninvasive, free, and simple.</td>
</tr>
<tr>
<td></td>
<td>Used to detect changes in the normal pattern of fetal activity.</td>
<td>Can be done yourself, at your convenience, in your own home.</td>
</tr>
<tr>
<td></td>
<td>Helps you learn about your baby.</td>
<td>May raise (or lower) your anxiety over your baby’s well-being.</td>
</tr>
<tr>
<td></td>
<td>Keeping track of your baby’s movements is a more reliable predictor</td>
<td>See page 69 for directions.</td>
</tr>
<tr>
<td></td>
<td>of outcome than reliance on your impressions of fetal activity.</td>
<td></td>
</tr>
<tr>
<td>Ultrasound scan (sonography or sonogram)</td>
<td>Ultrasound scans can be performed at any time during pregnancy. Timing</td>
<td>Appears safe, but it’s unknown if excessive exposure is harmful. Should only be used if medically indicated and not for “keepsake” pictures.</td>
</tr>
<tr>
<td></td>
<td>depends on the reason for testing.</td>
<td>Adds expense to prenatal care.</td>
</tr>
<tr>
<td></td>
<td>Confirm pregnancy.</td>
<td>Gives immediate results to sonographer who performs the ultrasound, but he or she doesn’t give the information to you. A physician interprets and reports results to you or to your regular caregiver.</td>
</tr>
<tr>
<td></td>
<td>Help estimate due date and fetal age by measuring structures such as</td>
<td>Accuracy varies depending on the quality of equipment, skill of person interpreting results, and gestational age of fetus.</td>
</tr>
<tr>
<td></td>
<td>the skull, femur, or crown-rump length.</td>
<td>Vaginal ultrasound may be better for detecting some problems such as placenta previa and ectopic pregnancy and for checking cervical length to evaluate risk for preterm labor.</td>
</tr>
<tr>
<td></td>
<td>Screen for pregnancy with multiples.</td>
<td>May help identify your baby’s gender (sex). (Accuracy depends on fetal age, fetal position, and quality of testing.)</td>
</tr>
<tr>
<td></td>
<td>Screen for fetal growth problems.</td>
<td>May increase your anxiety if “possible problems” are reported without a way to immediately confirm results.</td>
</tr>
<tr>
<td></td>
<td>Screen for placenta previa.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Screen for Down syndrome as part of the integrated screening (as</td>
<td></td>
</tr>
<tr>
<td></td>
<td>described below).</td>
<td></td>
</tr>
<tr>
<td>Integrated prenatal screening</td>
<td>Combines the results of sequential screening tests in the first and</td>
<td>Full combination of screening tests has a higher detection rate and a lower false positive rate than using only some of these tests.</td>
</tr>
<tr>
<td></td>
<td>second trimesters.</td>
<td>If test results are outside the normal range, then further testing may include a repeat blood test to confirm findings, ultrasound, genetic counseling, and amniocentesis.</td>
</tr>
<tr>
<td></td>
<td>To provide risk assessment for certain birth defects.</td>
<td>Useful for those not wanting invasive testing, although it does not detect the many other possible inherited disorders that can be detected by amniocentesis or chorionic villus sampling.</td>
</tr>
<tr>
<td></td>
<td>Test results usually available to you after both tests are done (about</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a week after the second trimester blood tests).</td>
<td></td>
</tr>
</tbody>
</table>

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## First Trimester Screening Tests

<table>
<thead>
<tr>
<th>Routine Exam/Test</th>
<th>Purpose</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ultrasound measurement of tissue on back of baby’s neck (nuchal translucency or NT)</td>
<td>At 10-13 weeks gestation (ideally at 11 weeks):</td>
<td>- If a trained sonographer is not available, the ultrasound is not done and only the maternal serum test is done in the first trimester, which is then combined with second trimester blood test.</td>
</tr>
<tr>
<td>2. Blood test for a plasma protein (PAPP-A) in maternal serum</td>
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<td></td>
</tr>
</tbody>
</table>

## Second Trimester Screening Tests

<table>
<thead>
<tr>
<th>Routine Exam/Test</th>
<th>Purpose</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>A maternal blood test measuring serum levels of four substances produced by the fetus and/or placenta:</td>
<td>At 16-20 weeks gestation (ideally at 16-17 weeks):</td>
<td>- The second trimester blood tests may be called “quadruple screen,” “multiple marker screening,” “triple screen,” “personal risk profile,” or “maternal serum screen.”</td>
</tr>
<tr>
<td>1. Alpha-fetoprotein (AFP)</td>
<td></td>
<td>- Serum levels vary depending on maternal age, gestational age, maternal weight, race, diabetic status, and pregnancies with multiples. Adjustments are made for these factors.</td>
</tr>
<tr>
<td>2. Human chorionic gonadotropin (hCG)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Unconjugated estriol (uE3), a byproduct of estrogen metabolism, affected by fetal and placental function.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Dimeric inhibin-A (DIA), a substance produced in the placenta.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other genetic screening Depending on your family history and racial background, you may be offered carrier-screening tests. The decision is yours whether to have the test or not.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A sample of your blood or saliva is tested to determine if you carry a gene that might cause a genetic birth defect.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Glucose Screening (a.k.a. 1-hour Glucose Tolerance Test or GTT)

A blood sample is taken from your arm 1 hour after you drink a very sweet (glucose) drink or eat a special sugary snack.

At 26-30 weeks gestation:

- Screen for gestational diabetes, which, if untreated, may cause problems for you and your baby.
- This is not a “fasting” test—you can eat or drink before it.
- If your blood sugar is elevated, a 3-hour GTT is planned.
- Many women with a high reading in the screening test will be found to have normal blood sugar levels in the full 3-hour GTT.
- See page 134 for a discussion of gestational diabetes.

## Group B streptococcus (GBS) screening

Vaginal and rectal swabs are taken and the secretions are sent to a laboratory for a culture to determine the degree of GBS colonization.

At 35-37 weeks gestation:

- Screen for presence of GBS.
- Some caregivers also screen for GBS early in pregnancy with a urine test.
- High GBS colonization could cause a dangerous GBS infection in an affected newborn. See page 131.
## Having a Healthy Pregnancy

### Common Over-the-Counter (OTC) Medications

Limit or Use with Caution during Pregnancy. Do not take any medication without checking with your caregiver.

<table>
<thead>
<tr>
<th>Drugs and Products* Containing Them with Their Benefits</th>
<th>Possible Side Effects and Pregnancy Risks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FOR PAIN OR FEVER:</strong></td>
<td></td>
</tr>
</tbody>
</table>
| Acetaminophen (Tylenol)                                 | • Appears safe in pregnancy, but check with your caregiver.  
  • Frequently combined with other ingredients in OTC and prescription drugs, which could lead to overdose.  
  • Toxic doses (above recommended dosage) cause liver damage.  
  • Risk of child having asthma if you are high-risk for asthma and allergies. |
| Aspirin, ibuprofen, and nonsteroidal anti-inflammatory drugs (NSAIDs), such as naproxen (Aleve) and ketoprofen | • Affect blood clotting and prolong bleeding time.  
  • Using within one week of delivery may increase bleeding in you and your baby.  
  • Interfere with prostaglandin production.  
  • May delay onset of labor.  
  • Do not use in late pregnancy.  
  • Only use aspirin in first and second trimester if prescribed by caregiver. |
| **FOR ALLERGY AND COLD SYMPTOMS:**                     |                                          |
| Chlorpheniramine (Chlor-Trimeton)                       | • May be safe in pregnancy, but check with your caregiver before use.  
  • Causes slight drowsiness. |
| Diphenhydramine (Benadryl)                             | • In animal study on rats, associated with specific fetal malformations.  
  • Could cause sedation of baby if used just prior to birth.  
  • Is in Tylenol PM and Advil PM, which are sleep aids. |
| Nasal sprays with some antihistamines or cromones (Afrin and Nasalcrom) | • Appear safe in pregnancy and have fewer side effects than antihistamines taken by mouth. |
| **FOR COLD SYMPTOMS:**                                 |                                          |
| Dextromethorphan (Robitussin DM)                       | • May be safe in pregnancy, but check with your caregiver before use.  
  • Causes drowsiness. |
| Guaifenesin (Robitussin)                               | • May be safe in pregnancy, but check with your caregiver before use. |
| Pseudoephedrine, phenylephrine, ephedrine, epinephrine, or phenylpropanolamine (Sudafed and Sudafed PE) | • Raise blood pressure.  
  • May decrease uterine blood flow.  
  • Phenylpropanolamine is less likely to cause birth defects, but is associated with adult strokes.  
  • In first trimester, ephedrine, phenylephrine, and epinephrine may cause birth defects.  
  • If needed, use pseudoephedrine. |

---

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### Drugs and Products* Containing Them with Their Benefits

<table>
<thead>
<tr>
<th>Product Type</th>
<th>Benefits</th>
<th>Possible Side Effects and Pregnancy Risks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Antacids</strong></td>
<td>Reduce heartburn and acid indigestion.</td>
<td>Too much calcium (Tums) or other chemicals could lead to constipation. Maalox, Amphojel, and Gelusil appear safe in pregnancy.</td>
</tr>
<tr>
<td><strong>Bismuth subsalicylate (Pepto-Bismol)</strong></td>
<td>Helps relieve upset stomach, heartburn, and diarrhea.</td>
<td>Contains subsalicylate, which is similar to aspirin and may cause prolonged bleeding for newborn or you if taken late in pregnancy.</td>
</tr>
<tr>
<td><strong>Bulk-forming laxatives (Metamucil and Fiberall)</strong></td>
<td>Treat constipation.</td>
<td>Appear safe in pregnancy, but check with your caregiver before use.</td>
</tr>
<tr>
<td><strong>Loperamide (Imodium AD)</strong></td>
<td>Helps stop diarrhea.</td>
<td>May be safe in pregnancy, but check with your caregiver before use. Reduces effect of prostaglandins. May delay onset of labor.</td>
</tr>
<tr>
<td><strong>Simethicone (Gas-X, Mylanta)</strong></td>
<td>Reduces gas in stomach and bowel.</td>
<td>May be safe in pregnancy, but check with your caregiver before use.</td>
</tr>
</tbody>
</table>

*Product names are examples; the list is not intended to be complete.
### Having a Healthy Pregnancy

#### Hazards of Drug Abuse in Pregnancy

<table>
<thead>
<tr>
<th>Name(s) of Drug and How It’s Taken</th>
<th>How Drug Affects You</th>
<th>Possible Harmful Effects from Maternal Use in Pregnancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol (Swallowed)</td>
<td>Sedation, sleepiness, or loss of consciousness</td>
<td>Fetal alcohol syndrome or FAS (physical deformity, mental deficiency, and behavioral disability), intrauterine growth retardation (IUGR), long-term neurological and behavioral problems</td>
</tr>
<tr>
<td>Amphetamines (Pills swallowed)</td>
<td>“uppers,” “speed,” or “diet pills”</td>
<td>Placental abruption, IUGR, premature birth, altered newborn heart rate and behavior, fetal death</td>
</tr>
<tr>
<td>Cocaine or crack (Injected by needle, snorted through nose, or smoked)</td>
<td>CNS stimulant and local vasoconstrictor (narrowing of blood vessels)</td>
<td>Placental abruption, IUGR, fetal stroke or heart attack, fetal death, premature birth, newborn withdrawal symptoms, and childhood learning problems</td>
</tr>
<tr>
<td>Ecstasy—methyleneoxyethamphetamine or MDSA (Pills swallowed)</td>
<td>CNS stimulant causing feelings of warmth, happiness, anxiety, and/or depression</td>
<td>Long-term learning and memory problems in childhood</td>
</tr>
<tr>
<td>Glues and solvents (Inhaled or sniffed)</td>
<td>“huffing”</td>
<td>Low birth weight, head and body growth problems in childhood, and birth defects of limbs, face, and heart</td>
</tr>
<tr>
<td>Heroin and other opioids (Smoked or injected under the skin or into a vein)</td>
<td>“mainlining” when put into a vein</td>
<td>Premature birth, IUGR, fetal death, withdrawal symptoms in baby and learning difficulties in childhood. Methadone (given at drug treatment centers to replace heroin) helps reduce fetal problems, but it’s not risk-free.</td>
</tr>
<tr>
<td>Ketamine (Snorted, eaten, or injected)</td>
<td>Called “special K”</td>
<td>Behavioral and learning problems for baby and in childhood</td>
</tr>
<tr>
<td>LSD—lysergic acid diethylamide (Swallowed)</td>
<td>Called “acid”</td>
<td>Birth defects in baby</td>
</tr>
<tr>
<td>Marijuana (Smoked or eaten)</td>
<td>“grass,” “weed,” or “pot”</td>
<td>Miscarriage, IUGR, and effects similar to exposure to tobacco smoke</td>
</tr>
<tr>
<td>Methamphetamine (Snorted, swallowed, smoked, or injected)</td>
<td>Called “meth” and pure form is called “crystal” or “ice”</td>
<td>Placental abruption, IUGR, premature birth, and newborn problems of tremors, extreme fussiness and difficulties with bonding and attachment</td>
</tr>
<tr>
<td>PCP—phencyclidine (Smoked, eaten, snorted or injected)</td>
<td>Called “angel dust”</td>
<td>Low birth weight and poor muscle control in baby</td>
</tr>
<tr>
<td>Tobacco (Smoked, chewed or inhaled)</td>
<td>Impairs circulation and respiration, reduces blood oxygenation, and increases risk of lung cancer</td>
<td>Miscarriage, IUGR, placental attachment problems, stillbirth, orofacial or limb defects, and SIDS</td>
</tr>
</tbody>
</table>
Having a Healthy Pregnancy
Notes from Prenatal Care Appointment

Date of prenatal visit: ___________________   Gestational week: ________________

Questions you’d like to ask your caregiver at this visit:   Caregiver answers:
__________________________________________________      _____________________________________________________
__________________________________________________      _____________________________________________________
__________________________________________________      _____________________________________________________
__________________________________________________      _____________________________________________________
__________________________________________________      _____________________________________________________
__________________________________________________      _____________________________________________________
__________________________________________________      _____________________________________________________
__________________________________________________      _____________________________________________________

What you learned at this prenatal appointment:
Weight: _____________   Blood pressure: _____________   Fundal height: _____________   Baby’s heart rate: _____________
Other test results: ____________________________________________________________________________________________
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________

Information learned:__________________________________________________________________________________________
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________

Next Appointment:
Date: __________________   Time: _________________   Caregiver: _________________   Location: ____________________
Things to Remember between Now and Then: ________________________________________________________________
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________
Having a Healthy Pregnancy

Noticing Baby’s Movement

For more information, see: Pregnancy, Childbirth, and the Newborn page 69.

**Timing:** Can be done any time after thirty-two weeks.

**Fetal Movement Counting**

Pick a standard time of the day to “tune into” your baby’s movements (it’ll work best about thirty minutes after eating). Each day, write your start time and then keep track of kicks, wiggles, or squirms. Once your baby has moved ten times, record your ending time, and total time.

**Sample:**

<table>
<thead>
<tr>
<th>Date</th>
<th>Starting Time</th>
<th>Record of movements</th>
<th>Time of 10th movement</th>
<th>Total time</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.8</td>
<td>1:15 PM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.9</td>
<td>12:45 PM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.10</td>
<td>1:00 PM</td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Date</th>
<th>Starting Time</th>
<th>Record of movements</th>
<th>Time of 10th movement</th>
<th>Total time</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>
**SLEEP AND ACTIVITY CHART**

Kathryn Barnard, in *Beginning Rhythms*, shows how women can track their babies’ movements during pregnancy and see emerging patterns of how their babies respond to their activities. These patterns may help you predict what your baby’s patterns will be after birth (if before birth, your baby’s kicks awaken you at 4:00 AM every day, then, after birth, your baby may wake up at 4:00 AM). Barnard suggests that women regulate their rhythm before birth by eating and sleeping at regular times, which may help their babies be more predictable after birth. Here’s a sample chart.

<table>
<thead>
<tr>
<th>Key:</th>
<th>➡ Shows mom is sleeping</th>
<th>➈ Shows when mom ate</th>
<th>⌜ Shows baby is active</th>
</tr>
</thead>
</table>

| Day   | 1AM | 2AM | 3AM | 4AM | 5AM | 6AM | 7AM | 8AM | 9AM | 10AM | 11AM | Noon | 1PM | 2PM | 3PM | 4PM | 5PM | 6PM | 7PM | 8PM | 9PM | 10PM | 11PM | Midnight |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|--------|
| Mon  |     | ⬅️  |     |     |     |     |     |     | ⬅️  |     |     |     |     |     |     |     | ⬅️  |     |     |     | ⬅️  |     |
| Tues |     |     |     |     | ⬅️  | ⬅️  |     | ⬅️  |     |     |     |     |     | ⬅️  | ⬅️  |     |     | ⬅️  |     |     |     |     |
| Wed  |     |     | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  |
| Thu  |     | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  |
| Fri  |     | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  | ⬅️  |

**Learning about your baby’s rhythms:** Chart one full week here.

| Day   | 1AM | 2AM | 3AM | 4AM | 5AM | 6AM | 7AM | 8AM | 9AM | 10AM | 11AM | Noon | 1PM | 2PM | 3PM | 4PM | 5PM | 6PM | 7PM | 8PM | 9PM | 10PM | 11PM | Midnight |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|--------|
| Mon  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Tues |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Wed  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Thu  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Fri  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

**Reflecting on what you’ve learned:** Is there a pattern to your baby’s quiet and active periods? Are there changes you could make to your schedule to see if your baby adapts his/her schedule? Chart another five days of activity: Add in additional details about your activities to see how your baby responds. (For example, if you exercise in the morning, does that change your baby’s rhythms? If you lay down for a nap, does your baby get active? If you stroke your belly or talk to your baby, does he/she respond?)
Feeling Good and Staying Fit
External Links and Resources

**Fitness Books and DVDs**
- *Yoga for Pregnancy, Labor and Birth* DVD by Colette Crawford (2005)

**Nia**
- [http://www.nianow.com](http://www.nianow.com): Expressive movement classes to help achieve physical, mental, emotional, and spiritual well-being while offering a flexible structure so pregnant women can modify movements to suit their needs.

**Overview Article**

**Fit Pregnancy Magazine**
- [http://www.fitpregnancy.com](http://www.fitpregnancy.com)
Feeling Good and Staying Fit

Your Goals for Exercise


Super Kegels (PCN page 95, SG page 43)
We recommend ten per day. Your goal: ______________________________________________________________________

How did you do? Sunday _________ Monday _________ Tuesday _________ Wednesday _________ Thursday _________
Friday ___________ Saturday_________

Pelvic tilts (PCN page 97, SG page 57)
We recommend twenty per day. Your goal: ______________________________________________________________________

How did you do? Sunday _________ Monday _________ Tuesday _________ Wednesday _________ Thursday _________
Friday ___________ Saturday_________

Low-impact exercise: walking, swimming, yoga, etc. (PCN page 92, SG page 42)
Ask your caregiver for recommendations and see your book for precautions.
Typical recommendation: 30 minutes per session, three or four times per week. Your goal: ______________________________________________________________________

How did you do? Sunday _________ Monday _________ Tuesday _________ Wednesday _________ Thursday _________
Friday ___________ Saturday_________

What is your plan for meeting your exercise goals? ______________________________________________________________
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________

Make and post a sign somewhere to remind you of these goals!
Eating Well

External Links and Resources

Meal Planning
- http://www.mypyramid.gov: Recommended daily intake of calories and food groups, customized to your weight, height, and exercise levels.
- http://www.mypyramidtracker.gov

Food Safety
- http://www.fda.gov/Food/ResourcesForYou/HealthEducators/ucm081785.htm
- http://www.cfsan.fda.gov/~pregnant/pregnant.html

Federal Assistance for Low-income Women

Additional Recommendations
- http://www.womenshealth.gov/pregnancy/you-are-pregnant/
Eating Well

Food Diary

Date: _______________  Day of the Week: _______________  Pregnancy Week: _______________

Several times during your pregnancy, use this chart to: record what you eat in a day, evaluate how your diet compares to the recommendations, and make healthy adjustments.

Write down what you eat and drink.

Breakfast, morning snacks, drinks:

Lunch, afternoon snacks, and drinks:

Dinner, evening snacks, and drinks:

Did you get your recommended number of servings* of each food group? At the end of the day, mark what food group those food items represent, and how many servings you ate or drank.

Grains—9 one-ounce servings □ □ □ □ □ □ □ □
Vegetables—3.5 one-cup servings □ □ □
Fruits—2 one-cup servings □ □
Milk—3 one-cup servings □ □ □
Meat and Beans—6.5 one-ounce servings □ □ □ □ □ □ □ □
Fluids—8 or more one-cup servings □ □ □ □ □ □ □ □

* See the Food Pyramid Groups and Servings chart for a description of serving sizes (Pregnancy, Childbirth, and the Newborn page 113). Fill in half a box if you had half a serving.

Compare what you ate with the recommendations.

What should you eat more of?
What should you eat less of?
What foods were the most nutritious?
What foods tasted the best to you?
What’s one thing you could do better?

Now congratulate yourself on every healthy choice you made and think about one small improvement you could make in the future.
## Eating Well

### Nutrients, Vitamins, and Minerals

#### Daily Recommendations

**Key:** N = nonpregnant, P = pregnant, L = lactating (breastfeeding)

\( g = \text{grams} \), \( mg = \text{milligrams} \), \( mcg = \text{micrograms} \); \( 1 \ g = 1000 \ mg \), \( 1 \ mg = 1000 \ mcg \)

### Calories, Calorie Sources, and Fluids

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Important Functions</th>
<th>Major Sources</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calories</td>
<td>• Provide energy for tissue building, increased metabolic requirements.</td>
<td>Carbohydrates, fats, proteins</td>
<td>Calorie requirements vary depending on your prepregnancy weight, size, stage of pregnancy, and activity level. For customized guidelines, see: <a href="http://www.mypyramid.gov">http://www.mypyramid.gov</a></td>
</tr>
<tr>
<td>N: 2,200</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P: 2,400 (First trimester)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P: 2,600 (Second trimester)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P: 2,800 (Third trimester)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L: 2,700</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carbohydrates</td>
<td>• Energy source</td>
<td>Complex: whole grains, legumes, starchy vegetables, citrus fruits</td>
<td>Of your carbohydrates, at least 30 g should be dietary fiber.</td>
</tr>
<tr>
<td>N: 155 g or more</td>
<td>• Fiber helps minimize constipation, maintain blood sugar levels.</td>
<td>Simple: refined grains, fruits, milk products, sugars</td>
<td></td>
</tr>
<tr>
<td>P: 200 g or more</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L: 240 g or more</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fat</td>
<td>• Energy source</td>
<td>Best: Flaxseed oil, fish</td>
<td>Essential fatty acids (omega-3s) can lower risk of preterm labor and depression, and can possibly lead to shorter labor, less gestational hypertensive, and benefits for the growing baby. Some experts recommend supplements of 650 mg/day of omega-3s, of which 300 mg is DHA. (Other sources of omega-3s: flaxseeds, flaxseed oil, fish, canola oil.) Minimize consumption of omega-6 fatty acids (corn, sunflower, and cottonseed oil).</td>
</tr>
<tr>
<td>N/P/L:</td>
<td>• Essential for brain growth and cognitive function.</td>
<td>Next best: Oils—canola, olive, safflower, corn, sunflower, Soybeans, nuts, seeds. Minimize: dairy fats, eggs, fat from meats Avoid: hydrogenated oil, shortening, lard</td>
<td></td>
</tr>
<tr>
<td>Maximum total fat: 85 g (Max saturated fat: 28g)</td>
<td>• Aids with absorption of vitamins A, D, E, K.</td>
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<tr>
<td>Protein</td>
<td>• Major structural component of all cells, builds and repairs tissues.</td>
<td>Meat, fish, poultry, soy, eggs, milk, cheese, dried beans and peas, peanut butter, nuts, whole grains</td>
<td>Fetal requirements increase by about 1/3 in late pregnancy during the baby’s growth period.</td>
</tr>
<tr>
<td>N: 46-50 g</td>
<td>• Helps build blood, amniotic fluid, and placenta.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P/L: 71 g</td>
<td>• Helps form antibodies.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water and other liquids</td>
<td>• Carry nutrients to cells and carry waste products away for mother and baby.</td>
<td>Water, juices, milk. Foods that are high in liquids: soup, Jell-o, fruit.</td>
<td>Water is best. Juice and soda contain a lot of sugar and should be drunk in moderation. Caffeine-containing coffee, sodas, and teas should be limited or avoided.</td>
</tr>
<tr>
<td>N: 72 ounces (9 cups)</td>
<td>• Provide fluid for increased blood, tissue, and amniotic fluid volume.</td>
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<td></td>
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<tr>
<td>P: 80 oz (10 cups)</td>
<td>• Aid digestion, prevent constipation, excessive swelling.</td>
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<td></td>
</tr>
<tr>
<td>L: 100 oz (12+ cups)</td>
<td>• Prevent dehydration, which can lead to premature labor.</td>
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<td></td>
</tr>
<tr>
<td>Nutrient</td>
<td>Important Functions</td>
<td>Major Sources</td>
<td>Comments</td>
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</tr>
<tr>
<td><strong>Calcium</strong>&lt;br&gt;N/P/L: 18 yrs: 1,300 mg&lt;br&gt;19-50 yrs: 1,000 mg</td>
<td>• Helps build bones and teeth. &lt;br&gt;• Proper levels assist with transmission of nerve impulses and muscle contractions. &lt;br&gt;• Important in blood clotting. &lt;br&gt;• Some evidence suggests that inadequate calcium is associated with hypertension in pregnancy.</td>
<td>Yogurt, cheese, milk, canned fish with bones, greens (collard, kale, bok choy, chard, spinach, other greens) tofu (with calcium sulfate), sesame seeds, almonds, fortified juice and milk substitutes</td>
<td>Prenatal vitamins often have little or no calcium, so if you’re not getting enough in your diet, you may need a calcium supplement as well. Calcium carbonate is best.</td>
</tr>
<tr>
<td><strong>Phosphorus</strong>&lt;br&gt;N/P/L: 18 yrs: 1,250 mg&lt;br&gt;19-50 yrs: 700 mg</td>
<td>• Helps build bones and teeth. &lt;br&gt;• Maintains healthy blood pH levels (acid-base balance).</td>
<td>Milk, cheese, lean meats, peas</td>
<td>Calcium and phosphorus exist in a constant ratio in the blood. Excess phosphorus limits the use of calcium.</td>
</tr>
<tr>
<td><strong>Iron</strong>&lt;br&gt;N: 5-18 mg&lt;br&gt;P: 27 mg&lt;br&gt;P (last 6 weeks): 30 mg&lt;br&gt;L: 9-10 mg</td>
<td>• Helps to ensure red blood cell quantity and quality. &lt;br&gt;• Carries oxygen to body and to every cell in your body. &lt;br&gt;• Deficiency (anemia) can lead to fatigue, preterm delivery, low birth weight.</td>
<td>Liver, red meats, egg yolks, poultry, fish, raisins and prunes, enriched breads and cereals, leafy vegetables, milk, legumes</td>
<td>Needed to provide adequate iron stores for baby. Vitamin C enhances absorption of iron. If taking iron supplements, you may want to also take supplements of 15 mg zinc, 2 mg copper as iron blocks absorption of these.</td>
</tr>
<tr>
<td><strong>Zinc</strong>&lt;br&gt;N: 8 mg&lt;br&gt;P: 11-12 mg&lt;br&gt;L: 12-13 mg</td>
<td>• Component of insulin. &lt;br&gt;• Important in growth of skeleton and nervous system. &lt;br&gt;• Deficiency associated with labor complications and preterm delivery.</td>
<td>Meat, liver, eggs, seafood (especially oysters)</td>
<td>Deficiency has been associated with poor fetal growth and development.</td>
</tr>
<tr>
<td><strong>Sodium</strong>&lt;br&gt;N/P/L: 1,500-2,300 mg</td>
<td>• Sodium maintains the fluid balance in the body.</td>
<td>Naturally occurring in foods. Some prepared foods have excessive amounts.</td>
<td>If you eat a lot of prepared foods, check the labels to make sure you don’t take in too much sodium by the end of the day.</td>
</tr>
<tr>
<td><strong>Iodine</strong>&lt;br&gt;N: 150 mcg&lt;br&gt;P: 220 mcg&lt;br&gt;L: 290 mcg</td>
<td>• Important in thyroid function, and for the baby’s developing brain and nervous system.</td>
<td>Seafoods, iodized salt</td>
<td>Deficiency may cause goiter in mother and developmental disorders in infants.</td>
</tr>
<tr>
<td><strong>Magnesium</strong>&lt;br&gt;N/L: 18 yrs: 360 mg&lt;br&gt;19-50 yrs: 310-320 mg&lt;br&gt;P: 18 yrs: 400 mg&lt;br&gt;19-50 yrs: 350-360 mg</td>
<td>• Helps with cell energy and protein metabolism. &lt;br&gt;• Enzyme activator. &lt;br&gt;• Helps tissue and nerve growth and function; development of healthy bones and teeth.</td>
<td>Green leafy vegetables, meat, nuts, soy, seeds, brown rice, wheat germ, and oatmeal.</td>
<td>Most is stored in bones. Deficiency may cause neuromuscular dysfunction. Supplements may help treat nighttime leg cramps.</td>
</tr>
<tr>
<td><strong>Potassium</strong>&lt;br&gt;N/P: 4,700 mg/day&lt;br&gt;L: 5,100</td>
<td>• Maintains fluid volume of cells. &lt;br&gt;• Aids healthy function of heart, kidney, muscles, nerves, and digestive system. &lt;br&gt;• May help reduce risk of osteoporosis.</td>
<td>Leafy greens, fruit from vines, root vegetables (carrots, parsnips, turnips), bananas, dairy, meat</td>
<td>Potassium appears to affect the levels of other minerals, such as calcium and sodium.</td>
</tr>
</tbody>
</table>
## Water-Soluble Vitamins

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Important Functions</th>
<th>Major Sources</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Folic acid (folate)</strong> N: 400 mcg P: 600 mcg L: 500 mcg</td>
<td>• Helps to form blood cells and the DNA and RNA inside all cells. • Needed for metabolism of amino acids and protein synthesis. • May help prevent stroke, colon and breast cancer.</td>
<td>Fortified cereals, breads and pastas and naturally occurs in legumes, green leafy vegetables, citrus fruit, whole wheat bread.</td>
<td>Supplements recommended for all women of childbearing age. Low folic can cause anemia, preterm delivery, and neural tube defects (1 in 3,000 pregnancies).</td>
</tr>
<tr>
<td><strong>Thiamin (B₁)</strong> N: 1.0-1.1 mg P/L: 1.4 mg</td>
<td>• Helps convert food to energy. • Plays a role in initiating nerve impulses. • Helps maintain healthy blood sugar.</td>
<td>Whole grains, fortified grain products (breads, cereals), pork, organ meats, seeds, nuts</td>
<td></td>
</tr>
<tr>
<td><strong>Riboflavin (B₂)</strong> N: 1.0-1.1 mg P: 1.4 mg L: 1.6 mg</td>
<td>• Essential for energy and metabolism of protein, fat, and carbohydrates.</td>
<td>Organ meats, milk products, whole and fortified grains</td>
<td></td>
</tr>
<tr>
<td><strong>Niacin (B₃)</strong> N: 14 mg P: 18 mg L: 17 mg</td>
<td>• Helps release energy from carbohydrates. • Needed for protein metabolism. • Aids production of lipids, hormones, and red blood cells.</td>
<td>Meats, peanuts, fortified cereals, whole grains, beans, peas</td>
<td></td>
</tr>
<tr>
<td><strong>Vitamin B₆ (Pyridoxine)</strong> N: 1.2-1.5 mg P: 1.9 mg L: 2.0 mg Max: 100 mg</td>
<td>• Important in amino acid metabolism and protein synthesis. • Important in production of serotonin, other neurotransmitters. • Deficiency can lead to depression, neurological disorders. • Improves immunity.</td>
<td>Chicken, fish, organ meats, pork, eggs, whole grains, wheat germ, soybeans, walnuts, legumes, cabbage, beets, oranges.</td>
<td>May help reduce nausea in early pregnancy. (Research trials have used 3 doses per day, with each dose being 10-25 mg.)</td>
</tr>
<tr>
<td><strong>Vitamin B₁₂ (Cobalamin)</strong> N: 2.4 mcg P: 2.6 mcg L: 2.8 mcg</td>
<td>• Essential in protein metabolism and tissue synthesis. • Important in formation of red blood cells. • Maintains nerve fibers. • Necessary for activation of folic acid.</td>
<td>Animal products: organ meats, milk products, clams, oysters, eggs. Fortified soymilks, tofu, and cereal.</td>
<td>Deficiency leads to anemia and central nervous system damage. All vegans should take a B₁₂ supplement. B₁₂ may help relieve depression.</td>
</tr>
<tr>
<td><strong>Pantothenic acid</strong> N: 5 mg P: 6 mg L: 7 mg</td>
<td>• Helps convert food into energy. • Aids production of lipids, hormones, and neurotransmitters.</td>
<td>Meats, potatoes, oats, tomatoes, organ meats, broccoli</td>
<td></td>
</tr>
<tr>
<td><strong>Biotin</strong> N: 25-30 mcg P: 30 mcg L: 35 mcg</td>
<td>• Aids energy metabolism. • Synthesizes and breaks down fatty acids.</td>
<td>Liver, egg yolks, soybeans, yeast</td>
<td></td>
</tr>
<tr>
<td><strong>Vitamin C</strong> N: 65-75 mg P: 80-85 mg L: 115-120 mg Smokers: add 35 mg Max: 2,000 mg</td>
<td>• Helps tissue formation. • Is “cement” substance in connective and vascular tissue, strengthens blood vessels. • Promotes iron absorption. • Aids in healing wounds; resisting infection, maintaining healthy tissues.</td>
<td>Citrus fruits, berries, melons, tropical fruits. Vegetables: tomatoes, peppers, broccoli, Brussels sprouts, cabbage, cauliflower, watercress, potatoes.</td>
<td>Megadoses of vitamin C have not been proven effective in reducing incidence of colds, though supplements may reduce duration or severity of cold.</td>
</tr>
</tbody>
</table>
**Fat-Soluble Vitamins**

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Important Functions</th>
<th>Major Sources</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vitamin A</strong></td>
<td>- Helps growth and development of bones, teeth, gums, vision.</td>
<td>Liver, fish oils, dairy products, eggs, orange vegetables (pumpkins, yams, sweet potato, squash, carrots), dark green vegetables.</td>
<td>Excessive amounts (over 3,000 mcg/10,000 IU) can lead to birth defects.</td>
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<tr>
<td>N: 700 mcg</td>
<td>- Maintains skin and mucous membranes.</td>
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<tr>
<td>P: 770 mcg (2,500 IU)</td>
<td>- Helps protect against infection.</td>
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<tr>
<td>L: 1,300 mcg</td>
<td>Max safe level: 3,000 mcg</td>
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<tr>
<td><strong>Vitamin D</strong></td>
<td>- Aids absorption of calcium and phosphorus from the blood.</td>
<td>Sunlight (vitamin D is made by the body with exposure to sunlight on skin—at least 10-15 minutes of direct sunlight to hands, face, or arms 3 times a week), fortified milk, fish liver oils, fatty fish, egg yolks</td>
<td>Recommended amounts are controversial and may not be enough. Researchers are studying benefits of 4,000 IU per day in pregnancy. Although current recommended maximum level is 50 mcg/day (2,000 IU), some experts say maximum levels (level at which toxicity is seen) should be 250 g (10,000 IU).³</td>
</tr>
<tr>
<td>N/P/L: 5 mcg (equal to 200 IU)</td>
<td>- Needed for mineralization of bones and teeth.</td>
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</tr>
<tr>
<td>If you have dark skin and/or minimal sun exposure, you need 25 mcg. See Comments.</td>
<td>- Deficiency can cause rickets (bone softening) and fetal malformations.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Vitamin E</strong></td>
<td>- Needed for tissue growth and the developing nervous system.</td>
<td>Vegetable oils, whole grains, meat, eggs, milk, nuts, seeds</td>
<td>Enhances absorption of vitamin A. It is an antioxidant.</td>
</tr>
<tr>
<td>N/P: 15 mg</td>
<td>- Protects cell wall integrity.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L: 19 mg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Vitamin K</strong></td>
<td>- Essential for blood clotting.</td>
<td>Leafy green vegetables</td>
<td>Produced in the body by intestinal flora.</td>
</tr>
<tr>
<td>N/P/L: &lt;18 yrs: 75 mcg</td>
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<tr>
<td>19-50 yrs: 90 mcg</td>
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</tr>
</tbody>
</table>

**Sources for General Recommendations**


**End Notes**

3. B. Hollis and C. Wagner, “Vitamin D: Nutritional vitamin D status during pregnancy: reasons for concern,” *CMAJ* 174(9) (April 25, 2006);
When Pregnancy Becomes Complicated

External Links and Resources

High Risk Pregnancies

- http://www.sidelines.org: This fabulous resource includes articles, book recommendations, online chats, and personal e-mail support from volunteers who have had similar experiences.
When Pregnancy Becomes Complicated
Diagnostic Tests

The following tests might be done if a screening test indicates a potential problem or if a pregnant woman shows symptoms of a specific disease or condition. (For information on screening tests, see page 67 of *Pregnancy, Childbirth, and the Newborn* or the PCNGuide Chart on Screening Tests). Tests are listed in alphabetical order, not by frequency of use or when they are done during pregnancy.

<table>
<thead>
<tr>
<th>Diagnostic Test</th>
<th>Purpose</th>
<th>Comments</th>
</tr>
</thead>
</table>
| Amniocentesis              | In early to midpregnancy (15-20 weeks):                                 | • Provides information on particular birth defects, metabolic disorders, and chromosomal or genetic diseases.  
  • May detect Down syndrome, sickle cell anemia, neural tube defects, and many other disorders.  
  • Performed to evaluate fetus if results from particular screening tests indicate a problem.  
  • Helps you make a decision about continuing or terminating a pregnancy.  
  • Can be performed when there is an adequate amount of fluid (after 13 weeks gestation); but risks are less if done after 15 weeks.  
  • Slightly increases risk of miscarriage—about 0.1 to 0.5% higher than for women not having amniocentesis. (Risk of miscarriage is normally about 1% at this stage of pregnancy.)  
  • Risk of miscarriage depends on the skill and experience of technician performing the test.  
  • Carries a slight risk of cramping, intrauterine infection, bleeding, or leaking amniotic fluid.  
  • Requires injection of RhoGAM if you’re Rh negative.  
  • Length of time (2 weeks) required to obtain results for genetic disorders may be stressful.  
  • Termination of pregnancy (abortion), if desired, might not be until 17-22 weeks gestation. (Later abortions are more stressful than ones done earlier.)  
  • Is expensive and used only if medically indicated.                                                                 |
|                            | In late pregnancy (last trimester):                                     | • Provides information on fetal lung maturity when early delivery (32 to 37 weeks) is being considered for the health of you or your baby (See pages XX-XX)  
  • Reveals severity of Rh disease or other suspected blood disorders and helps determine if treatment of baby will be necessary.  
  • May detect biochemical markers to help identify women at highest risk for certain pregnancy complications.  
  • Slight risk of injury to fetus, placenta, or cord.  
  • Can identify bacteria or other markers of inflammation for women in preterm labor.                                                                                  |
| Biophysical profile (BPP)  | Estimates fetal well-being in the later weeks of pregnancy.             | • Score of 8-10 is considered “normal.”  
  • Is a fairly good predictor of fetal condition when scores are high (6-10) or low (0-2).  
  • Intermediate scores (3-5) are difficult to interpret, and repeat testing is done.  
  • Sometimes, only selected components of the biophysical profile are performed (for example, evaluating only the NST and AFV, or using only the four components from the ultrasound).  
  • Sometimes the NST and ultrasound are done in two different locations.                                                                 |
### Diagnostic Test

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<tr>
<th>Test Name</th>
<th>Purpose</th>
<th>Comments</th>
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<tbody>
<tr>
<td><strong>Chorionic villus sampling (CVS)</strong></td>
<td>• Provides information about chromosomal abnormalities (same as that obtained from amniocentesis, except CVS cannot detect neural tube defects such as spina bifida).&lt;br&gt;• Provides information at an earlier gestational age than amniocentesis, allowing for earlier decision about termination of pregnancy.&lt;br&gt;• Provides a sample large enough to take advantage of molecular genetics technology such as DNA analysis (done if indicated by family history).</td>
<td>• Not as widely used as amniocentesis.&lt;br&gt;• Risk of miscarriage is about 1% above those not having CVS test (miscarriage rate may be as high as 4% without CVS at this stage of pregnancy).&lt;br&gt;• May cause vaginal bleeding or spotting, amniotic fluid leakage, or infection.&lt;br&gt;• Not available in all medical centers.&lt;br&gt;• Requires injection of RhGAM if you’re Rh negative.&lt;br&gt;• Often requires a full bladder, which may be uncomfortable.&lt;br&gt;• Reasons not to do a transcervical CVS include genital herpes, inflammation of cervix, or cervical myoma (tumor).&lt;br&gt;• Small risk for fetal limb defects if CVS done before 10 weeks gestation.</td>
</tr>
<tr>
<td><strong>Contraction stress test (CST) or oxytocin challenge test (OCT)</strong></td>
<td>• Used to predict whether the fetus can withstand stress of labor contractions.&lt;br&gt;• Used to decide if high-risk pregnancy can continue, if labor should be induced, or if a cesarean birth is indicated.&lt;br&gt;• Estimates placental function and fetal reserves.</td>
<td>• Not widely used.&lt;br&gt;• Usually not done unless non-stress test (NST) indicates a problem with fetal well-being.&lt;br&gt;• Usually not a cause of preterm labor.&lt;br&gt;• Difficult to interpret results and occasionally produces false results, which could lead to unnecessary intervention.&lt;br&gt;• Considered reliable only during the last weeks of pregnancy.&lt;br&gt;• To make uterus contract, you might be asked to stimulate your nipples or you might receive Pitocin (oxytocin) intravenously.&lt;br&gt;• For more information on FHR monitoring, see page 252.</td>
</tr>
<tr>
<td><strong>Cordocentesis or percutaneous umbilical blood sampling (PUBS)</strong></td>
<td>• Allows assessment of fetal blood characteristics to detect chromosomal defects; blood disorders; and conditions such as infection, anemia, and lack of oxygen.&lt;br&gt;• May be used to give a blood transfusion, administer medications, or monitor effectiveness of drug treatment for fetus.&lt;br&gt;• Used when confirmation of a diagnosis is needed more quickly than the results obtained by amniocentesis.</td>
<td>• Requires greater technical skill than amniocentesis on part of doctor and is only available at large prenatal diagnostic centers.&lt;br&gt;• A rarely used, invasive procedure that has a 1-2% risk of fetal loss.&lt;br&gt;• Potential complications include infection, bleeding, preterm labor; premature rupture of membranes, blood clot in cord, and transient irregular fetal heart rate.&lt;br&gt;• Use of cordocentesis has declined since other noninvasive tests, such as Doppler velocimetry and analysis of maternal blood for biochemical markers, have been developed to identify high-risk pregnancies.</td>
</tr>
</tbody>
</table>

Chorionic villus sampling is usually performed between 10 and 12 weeks gestation, and results are available in about 1 week.
Doppler arterial blood flow studies (velocimetry)

A Doppler ultrasound unit placed on your abdomen obtains information about the rate of blood flow (velocity) in maternal and/or fetal arteries. This information is recorded as velocity waveforms that show the differences in blood flow during and between heartbeats.

- Provides information about circulation of blood between and within the uterus, placenta, and fetus.
- Used to measure blood flow in the umbilical arteries (fetal-placental system), fetal blood vessels, and/or your uterine artery (uteroplastic system).
- Used to predict a fetus at highest risk for complications, such as intrauterine growth retardation (IUGR) from fetal-placental blood flow problems, prematurity from severe preeclampsia, and anemia from Rh incompatibility.
- May be available only in large medical centers.
- Is noninvasive.
- Ability to predict maternal and fetal disease and/or outcome is being studied.
- May be able to predict those mothers and babies who are at highest risk for certain pregnancy complications and help prevent unneeded medical interventions in those at lowest risk.
- Full range of applications still being explored.

Glucose tolerance test (GTT)

This blood test evaluates your body’s ability to handle a large dose of sugar or glucose. The technician draws blood before you drink a very sugary beverage and then again at 1 hour, 2 hours, and 3 hours afterward.

- Used to diagnose gestational diabetes if a screening test (described on page 68) indicates this possibility.
- A special high-carbohydrate meal or snack (with appropriate glucose quantity) could possibly be used if the glucose drink is not well tolerated.
- Normally, blood glucose levels remain stable; however, with diabetes, two or more of the readings are elevated.
- See page 134 for more on gestational diabetes.

Magnetic resonance imaging (MRI)

Visual images are obtained with a superconductive magnet that moves over your body above the area that is to be examined. A number of images projected onto a video screen show several layers (multiplanar imaging) of the maternal or fetal organs or structures being evaluated.

- Allows a detailed look at an internal organ or structure of your unborn baby to help confirm fetal malformations or other structural abnormalities.
- Estimates size and volume of anatomical structures and maturity of fetal organs (for example, for lung maturity).
- Helps assess maternal internal organs and blood vessels (for example, to help diagnose placental abnormalities, uterine defects, and maternal diseases, such as deep vein thrombosis, appendicitis, or other disorders.)
- Used when ultrasound results are unclear and only if medically indicated.
- Allows noninvasive evaluation of internal organs, blood vessels, and blood flow without use of dyes or ionizing radiation (x-ray).
- Echo-planar imaging (a form of MRI) helps overcome imaging problems due to movement of the fetus.
- No harmful effects reported when used in second or third trimesters. Though harm of earlier use has not been determined, MRI isn't used in the first trimester if it can be avoided.

Non-stress test (NST)

This noninvasive test indicates how the fetal heart rate (FHR) responds when the baby moves.

The FHR is recorded for 10-40 minutes with an external electronic fetal monitor, and you tell the technician or push a button each time you feel your baby move. If there is no spontaneous fetal movement, your baby may be asleep. The examiner may ask you to eat something, push on your abdomen, or sound a loud noise near your abdomen to stimulate your baby to move.

An increase in the fetal heart rate (FHR) when the baby moves is normal and a sign of fetal well-being and is called a “reactive test.”

- Used to predict fetal well-being.
- Used to determine if a high-risk pregnancy can safely continue or if further testing is desirable.
- Is used as one of the five components of the biophysical profile (BPP) test. (See above.)
- Can be done in caregiver’s office, clinic, hospital, or at home.
- Considered reliable only during the last weeks of pregnancy (after 30 weeks gestation).
- Occasionally produces false results.
- In many cases when NST is nonreactive, further testing shows a healthy fetus.
<table>
<thead>
<tr>
<th>Diagnostic Test</th>
<th>Purpose</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ultrasound/sonography (as a diagnostic test)</td>
<td>• Helps estimate gestational age and fetal maturity.</td>
<td>• May be done at imaging center, a hospital, or the doctor’s office.</td>
</tr>
<tr>
<td></td>
<td>• Helps locate fetal organs and structures for inspection, measurement, diagnosis, or treatment.</td>
<td>• Is noninvasive and gives immediate results.</td>
</tr>
<tr>
<td></td>
<td>• Helps assess the position, size, and condition of the placenta and cord.</td>
<td>• Can determine whether the pregnancy is uterine or ectopic.</td>
</tr>
<tr>
<td></td>
<td>• Detects how baby is lying within uterus, showing presentation and position.</td>
<td>• Accuracy varies depending on the quality or level of equipment, skill of person interpreting results, and gestational age of fetus.</td>
</tr>
<tr>
<td></td>
<td>• Used to measure length of the cervix to determine preterm opening (effacement).</td>
<td>• Can detect structural abnormalities, such as spina bifida, heart defects, and some chromosomal defects with associated structural components, such as Down syndrome.</td>
</tr>
<tr>
<td></td>
<td>• Helps assess amniotic fluid volume (AFV) to detect fetal-placental problems.</td>
<td>• Vaginal ultrasound may be better for detecting some problems such as placenta previa, ectopic pregnancy, and preterm cervical effacement.</td>
</tr>
<tr>
<td></td>
<td>• Helps evaluate fetal well-being by observing characteristics and movement of the baby and AFV for a biophysical profile.</td>
<td>• Appears safe, but should only be used if medically indicated.</td>
</tr>
<tr>
<td></td>
<td>• Used to locate fetus, placenta, cord, and internal structures when performing other procedures, such as breech version, chorionic villus sampling (CVS), amniocentesis, and cordocentesis, to increase safety for mother and baby.</td>
<td>• The technician performing the ultrasound usually does not give you information. A physician reports the results either to you or to your regular caregiver.</td>
</tr>
<tr>
<td></td>
<td>• May detect baby’s gender. (Accuracy depends on age of fetus, fetal position, and quality of testing.)</td>
<td>• May detect baby’s gender. (Accuracy depends on age of fetus, fetal position, and quality of testing.)</td>
</tr>
<tr>
<td>Vaginal/cervical smear</td>
<td>• Detects organisms that cause infections (bacteria, virus, fungus, or protozoa).</td>
<td>• See page 132 for more about infections in pregnancy and childbirth.</td>
</tr>
<tr>
<td></td>
<td>• Helps diagnose premature rupture of membranes.</td>
<td>• Amniotic fluid is less acidic (lower pH) than urine and it has a fernlike appearance under the microscope. Both characteristics may be used to test for the presence of amniotic fluid when diagnosing ruptured membranes.</td>
</tr>
<tr>
<td></td>
<td>• May be used to evaluate the content of amniotic fluid pooled in the vagina after premature rupture of membranes to help predict fetal lung maturity or intra-amniotic fluid infection.</td>
<td>• See pages 136-139 for more about preterm labor.</td>
</tr>
<tr>
<td></td>
<td>• Used to detect fetal fibronectin in cervico-vaginal secretions between 24 to 38 weeks of pregnancy, if indicated, to help identify those at risk for preterm labor.</td>
<td>• Used to detect fetal fibronectin in cervico-vaginal secretions between 24 to 38 weeks of pregnancy, if indicated, to help identify those at risk for preterm labor.</td>
</tr>
<tr>
<td>X-ray</td>
<td>• Helps diagnose maternal problems in pregnancy, such as pneumonia, dental disease, and broken bones.</td>
<td>• Rarely used on pregnant women today.</td>
</tr>
<tr>
<td></td>
<td>• You should wear a lead apron shield for any x-rays, especially in pregnancy.</td>
<td>• You should wear a lead apron shield for any x-rays, especially in pregnancy.</td>
</tr>
<tr>
<td></td>
<td>• Early prenatal radiation exposure (in first trimester) has been associated with an increased risk of childhood malignancies, low birth weight, and genetic mutations in babies.</td>
<td>• Early prenatal radiation exposure (in first trimester) has been associated with an increased risk of childhood malignancies, low birth weight, and genetic mutations in babies.</td>
</tr>
<tr>
<td></td>
<td>• Degree of risk depends on gestational age at the time of exposure and the amount (dose) of radiation.</td>
<td>• Degree of risk depends on gestational age at the time of exposure and the amount (dose) of radiation.</td>
</tr>
<tr>
<td></td>
<td>• Diagnostic x-rays after 15 weeks of pregnancy, which use low-dose radiation (under 5 rads) and don’t involve direct abdominal or pelvic exposure, minimize fetal risks.</td>
<td>• Diagnostic x-rays after 15 weeks of pregnancy, which use low-dose radiation (under 5 rads) and don’t involve direct abdominal or pelvic exposure, minimize fetal risks.</td>
</tr>
</tbody>
</table>
## When Pregnancy Becomes Complicated

### Medications Used to Manage Preeclampsia and Gestational Hypertension

(Formerly known as Pregnancy Induced Hypertension or PIH)

<table>
<thead>
<tr>
<th>Drug Type and Names</th>
<th>When/How Given</th>
<th>Benefits and/or Purposes</th>
<th>Possible Risks and/or Side Effects</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Anticonvulsants</strong> (for seizure prevention) • magnesium sulfate</td>
<td>• Given intravenously or intramuscularly when mother has severe preeclampsia or gestational hypertension.</td>
<td>• Prevents or controls seizures by depressing central nervous system function.</td>
<td>To mother: • Jitteriness, irritability • Flushing of face and trunk • Sweating • Lowered temperature • Low blood pressure • Lethargy, blurred vision • Nausea and vomiting • Pulmonary edema, especially when combined with corticosteroid treatment • Impaired reflexes • Respiratory depression • Cardiac arrest (very rare) To fetus: • Drug crosses to fetus at levels close to those in the mother. To newborn: • Takes 3-4 days to eliminate from circulation. • Reduced muscle tone • Low blood calcium levels • Respiratory depression</td>
<td>Women often find magnesium to be extremely uncomfortable, but it is very effective in preventing seizures.</td>
</tr>
<tr>
<td><strong>Antihypertensives</strong> (to lower blood pressure) • hydralazine (Apresoline) • labetalol (Normodyne, Trandate) • nifedipine (Procardia)</td>
<td>• Hydralazine is given intravenously, intramuscularly, or by mouth. • Labetalol is given intravenously or by mouth. • Nifedipine is given by mouth.</td>
<td>• Lowers blood pressure by dilating blood vessels throughout the mother’s body. • Helps treat high blood pressure during pregnancy and childbirth.</td>
<td>To mother: • Hydralazine may cause headache, flushing, rapid or irregular heart rate, nausea, vomiting, diarrhea, or difficulties with urination. • Labetalol may cause slowing of heart rate, shortness of breath, and drowsiness. • Nifedipine may cause transient hypotension (low blood pressure) and possible liver problems. To fetus and newborn: • Use of hydralazine has been associated with fetal tachycardia (rapid heart rate). • The effects of labetalol include neonatal hypotension (low blood pressure), slow heart rate, and hypoglycemia (low blood sugar).</td>
<td>Labetalol is contraindicated in women with asthma or with certain cardiac problems. Nifedipine should not be used with magnesium sulfate.</td>
</tr>
</tbody>
</table>
Planning for Birth and Post Partum

External Links and Resources

Videos and Print Materials for Better Birth

- *Healthy Birth Your Way: Six Steps to a Safer Birth* from Lamaze and Injoy (2009) at http://www.mothersadvocate.org:
  A great overview of research-based information about some of the key practices that influence birth.

Sample Birth Plans

Please note: These are included only as examples of what a birth plan might look like. The specific details of these personalized plans are not intended as endorsements or recommendations.

- http://barbarahotelling.com/birthplans
- http://www.birthingnaturally.net/birthplan/sample/fiveplan.html

Birth Plan Tools

Several interactive web sites (like http://pregnancyandbaby.sheknows.com/pregnancy/baby/Birth-plan-creator-241.htm) allow you to check off boxes, and then they build a birth plan for you. These can be helpful in your initial process of determining what your preferences are, but if you use one to generate a plan, think of it as your rough draft. Re-write it in your own words, so it clearly conveys who you are and what’s most important to you.
Planning for Birth and Post Partum
Work Sheet for Preparing Your Birth Plan

You might find this work sheet helpful as you prepare your birth plan. Place a (+) sign by the items you clearly want, and a (-) sign by items you want to avoid unless medically necessary. Put a question mark by items you are unsure about, and plan to learn more about those options.

Once you have completed this work sheet, write a short description of the roles you envision for yourself, your partner, your doula or other helpers, and your caregivers (the approach you prefer). Then prepare a draft of your birth plan that consolidates and generalizes your preferences for discussion with your caregiver.

(The references below are to page numbers from Pregnancy, Childbirth, and the Newborn.)

### OPTIONS FOR NORMAL LABOR AND BIRTH

#### First Stage

<table>
<thead>
<tr>
<th>Presence of partner/others</th>
<th>Positions for labor (pages 221-223)</th>
</tr>
</thead>
<tbody>
<tr>
<td>__ Partner __</td>
<td>_ Freedom to change positions, stand, and/or walk around</td>
</tr>
<tr>
<td>__ Doula (page 23) __</td>
<td>_ Postural aids (birth ball, bathtub, beanbag chair, or other)</td>
</tr>
<tr>
<td>__ Friends or relatives __</td>
<td></td>
</tr>
<tr>
<td>__ Children (page 443) __</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vaginal exams (page 251)</th>
<th>Monitoring fetal heart rate (pages 252-253)</th>
</tr>
</thead>
<tbody>
<tr>
<td>__ At mother’s request or if needed for clinical decision __</td>
<td>_ Auscultation with stethoscope or ultrasound stethoscope</td>
</tr>
<tr>
<td>__ As few different examiners as possible __</td>
<td>_ Intermittent external electronic fetal monitoring (EFM)</td>
</tr>
<tr>
<td>__ At caregiver’s discretion __</td>
<td>_ Continuous EFM with telemetry</td>
</tr>
<tr>
<td></td>
<td>_ Continuous electronic monitoring (internal or external)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Food/fluids (page 210)</th>
<th>Pain relief (Chapters 10 and 11)</th>
</tr>
</thead>
<tbody>
<tr>
<td>__ Eat and drink as desired __</td>
<td>_ Emotional support and self-help measures</td>
</tr>
<tr>
<td>__ Water, juice, Popsicles, ice chips __</td>
<td>_ Relaxation, breathing, positions, comfort measures</td>
</tr>
<tr>
<td>__ Saline (or Heparin) lock __</td>
<td>_ Medications (narcotics) and/or anesthesia (epidural or other)</td>
</tr>
<tr>
<td>__ Intravenous (IV) fluids __</td>
<td></td>
</tr>
</tbody>
</table>

#### Second Stage (pushing and birth of baby)

<table>
<thead>
<tr>
<th>Position for pushing and for birth (pages 222-223, 260)</th>
<th>Care of perineum at birth (pages 264, 289-290)</th>
</tr>
</thead>
<tbody>
<tr>
<td>__ Mother’s choice of positions __</td>
<td>_ Warm compresses, controlled pushing, positions</td>
</tr>
<tr>
<td>__ Gravity-enhancing positions __</td>
<td>_ No episiotomy (willing to risk having a tear)</td>
</tr>
<tr>
<td>__ Caregiver’s choice of positions __</td>
<td>_ Decision left to caregiver</td>
</tr>
<tr>
<td></td>
<td>_ Episiotomy</td>
</tr>
<tr>
<td></td>
<td>_ Forceps or vacuum extraction</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Expulsion techniques (pages 259-260)</th>
<th>Bed/equipment for pushing and for birth</th>
</tr>
</thead>
<tbody>
<tr>
<td>__ Spontaneous bearing down __</td>
<td>_ Birthstool, squat bar, bathtub, floor</td>
</tr>
<tr>
<td>__ Delayed pushing (if epidural used) __</td>
<td>_ Birthing bed</td>
</tr>
<tr>
<td>__ Directed pushing __</td>
<td>_ Delivery table with or without stirrups</td>
</tr>
<tr>
<td>__ Prolonged breath-holding and straining __</td>
<td></td>
</tr>
</tbody>
</table>

#### Third Stage and First Hours after Birth

<table>
<thead>
<tr>
<th>Immediate care of baby (pages 264-268)</th>
<th>Warmth of baby (page 264)</th>
</tr>
</thead>
<tbody>
<tr>
<td>__ Delay clamping and cutting the cord __</td>
<td>_ Baby skin-to-skin with mother</td>
</tr>
<tr>
<td>__ Partner cuts cord __</td>
<td>_ Wrapped in warm blanket, held by parent</td>
</tr>
<tr>
<td>__ In parent’s arms for observation and exam __</td>
<td>_ In heated bassinet in mother’s room</td>
</tr>
<tr>
<td>__ Near parents in bassinet or isolette __</td>
<td>_ In special heated unit in nursery</td>
</tr>
<tr>
<td>__ In nursery for observation, weighing, and first bath __</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Clearing baby’s airway (page 264)</th>
<th>Cord blood collection (page 267)</th>
</tr>
</thead>
<tbody>
<tr>
<td>__ Suction only if necessary __</td>
<td>_ Not planned</td>
</tr>
<tr>
<td>__ Suction with bulb syringe almost immediately __</td>
<td>_ Public cord blood bank donation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Eye care and vitamin K (page 370)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>__ At end of first hour after birth __</td>
<td>_ Private or family cord blood collection and storage</td>
</tr>
<tr>
<td>__ Use of nonirritating antibiotic agent (for eye care) __</td>
<td></td>
</tr>
<tr>
<td>OPTIONS FOR UNEXPECTED LABOR EVENTS</td>
<td></td>
</tr>
<tr>
<td>--------------------------------------</td>
<td></td>
</tr>
<tr>
<td><strong>General</strong></td>
<td></td>
</tr>
<tr>
<td>Induction (pages 275-283)</td>
<td></td>
</tr>
<tr>
<td>__ Avoid induction unless medically necessary __</td>
<td></td>
</tr>
<tr>
<td>__ At mother’s or caregiver’s convenience __</td>
<td></td>
</tr>
<tr>
<td>__ Self-induction methods __</td>
<td></td>
</tr>
<tr>
<td>__ Stripping membranes __</td>
<td></td>
</tr>
<tr>
<td>__ Cervical dilators __</td>
<td></td>
</tr>
<tr>
<td>__ Artificial rupture of membranes __</td>
<td></td>
</tr>
<tr>
<td>__ Cervical ripening agents (prostaglandins) __</td>
<td></td>
</tr>
<tr>
<td>__ Induction agents (Pitocin, oxytocin) __</td>
<td></td>
</tr>
<tr>
<td>Maternal exhaustion (pages 245-247, 283-287)</td>
<td></td>
</tr>
<tr>
<td>__ Rest, relaxation skills __</td>
<td></td>
</tr>
<tr>
<td>__ Bathtub, dim lights, privacy __</td>
<td></td>
</tr>
<tr>
<td>__ Narcotics or sedatives for sleep __</td>
<td></td>
</tr>
<tr>
<td>__ Epidural anesthesia __</td>
<td></td>
</tr>
<tr>
<td>Prolonged active labor (pages 283-287)</td>
<td></td>
</tr>
<tr>
<td>__ Walk, change positions, take a bath __</td>
<td></td>
</tr>
<tr>
<td>__ Nipple stimulation __</td>
<td></td>
</tr>
<tr>
<td>__ Artificial rupture of membranes __</td>
<td></td>
</tr>
<tr>
<td>__ Medication (Pitocin, oxytocin) __</td>
<td></td>
</tr>
<tr>
<td>Prolonged second stage (pages 288-290)</td>
<td></td>
</tr>
<tr>
<td>__ Rest from pushing __</td>
<td></td>
</tr>
<tr>
<td>__ Change positions __</td>
<td></td>
</tr>
<tr>
<td>__ Directed pushing __</td>
<td></td>
</tr>
<tr>
<td>__ Pitocin __</td>
<td></td>
</tr>
<tr>
<td>__ Vacuum extraction, forceps, and/or episiotomy __</td>
<td></td>
</tr>
<tr>
<td>Suspected fetal distress (Pages 287-288 and 313-314)</td>
<td></td>
</tr>
<tr>
<td>__ Mother changes position, uses oxygen __</td>
<td></td>
</tr>
<tr>
<td>__ Fetal scalp stimulation to evaluate fetal well-being __</td>
<td></td>
</tr>
<tr>
<td>__ Amnioinfusion __</td>
<td></td>
</tr>
<tr>
<td>__ Continuous electronic fetal monitoring, internal scalp electrode __</td>
<td></td>
</tr>
<tr>
<td>__ Cesarean delivery __</td>
<td></td>
</tr>
<tr>
<td>Prolonged third stage (pages 299-300)</td>
<td></td>
</tr>
<tr>
<td>__ Placental separation encouraged by breast stimulation __</td>
<td></td>
</tr>
<tr>
<td>__ Baby suckling on the breast __</td>
<td></td>
</tr>
<tr>
<td>__ Upright position __</td>
<td></td>
</tr>
<tr>
<td>__ Hastened with fundal massage __</td>
<td></td>
</tr>
<tr>
<td>__ Hastened with medication or manual extraction of placenta __</td>
<td></td>
</tr>
<tr>
<td><strong>Cesarean Birth</strong></td>
<td></td>
</tr>
<tr>
<td>Timing of cesarean (pages 310-311)</td>
<td></td>
</tr>
<tr>
<td>__ Planned before labor begins __</td>
<td></td>
</tr>
<tr>
<td>__ Planned after labor begins __</td>
<td></td>
</tr>
<tr>
<td>__ Unplanned during labor, only done if medically indicated __</td>
<td></td>
</tr>
<tr>
<td>Participation by mother</td>
<td></td>
</tr>
<tr>
<td>__ Mother watches delivery of baby (window in screen or screen lowered) __</td>
<td></td>
</tr>
<tr>
<td>__ Doctor explains events during surgery __</td>
<td></td>
</tr>
<tr>
<td>__ No description of events during surgery __</td>
<td></td>
</tr>
<tr>
<td>Anesthesia (Chapter 10)</td>
<td></td>
</tr>
<tr>
<td>__ Regional anesthesia (spinal or epidural) __</td>
<td></td>
</tr>
<tr>
<td>__ Regional anesthesia with or without sedation or tranquilizer __</td>
<td></td>
</tr>
<tr>
<td>__ General anesthesia __</td>
<td></td>
</tr>
<tr>
<td>Postoperative medications for trembling or nausea (page 317)</td>
<td></td>
</tr>
<tr>
<td>__ Only at mother’s request __</td>
<td></td>
</tr>
<tr>
<td>__ Medications with least effect on consciousness and memory __</td>
<td></td>
</tr>
<tr>
<td>__ Medications at doctor’s discretion __</td>
<td></td>
</tr>
<tr>
<td>Presence of partner/others (page 318)</td>
<td></td>
</tr>
<tr>
<td>__ More than one supportive person present __</td>
<td></td>
</tr>
<tr>
<td>__ Father or partner only __</td>
<td></td>
</tr>
<tr>
<td>__ Partner sits or stands to watch or photograph surgery __</td>
<td></td>
</tr>
<tr>
<td>__ Partner not present __</td>
<td></td>
</tr>
<tr>
<td>Contact between baby and mother/parents (page 316)</td>
<td></td>
</tr>
<tr>
<td>__ Held by partner after birth, for mother to touch and see __</td>
<td></td>
</tr>
<tr>
<td>__ Baby taken to nursery for well-baby observation __</td>
<td></td>
</tr>
<tr>
<td>__ If baby goes to nursery, partner goes with baby __</td>
<td></td>
</tr>
<tr>
<td>__ Partner remains with mother __</td>
<td></td>
</tr>
<tr>
<td>__ If two support people, one goes with baby while other stays with mother __</td>
<td></td>
</tr>
<tr>
<td><strong>POSTPARTUM HOSPITAL OPTIONS FOR NEW MOTHER</strong></td>
<td></td>
</tr>
<tr>
<td>Infant feeding (Chapter 18)</td>
<td></td>
</tr>
<tr>
<td>__ Breastfeeding __</td>
<td></td>
</tr>
<tr>
<td>__ Formula feeding __</td>
<td></td>
</tr>
<tr>
<td>Controlling pain (page 319)</td>
<td></td>
</tr>
<tr>
<td>__ Use of self-help techniques to avoid medications __</td>
<td></td>
</tr>
<tr>
<td>__ Medications (patient-controlled IV or oral) __</td>
<td></td>
</tr>
<tr>
<td>Visits by family and friends</td>
<td></td>
</tr>
<tr>
<td>__ Unlimited visitation desired __</td>
<td></td>
</tr>
<tr>
<td>__ Limit who will visit __</td>
<td></td>
</tr>
<tr>
<td>__ Limit when visitors can come into room __</td>
<td></td>
</tr>
<tr>
<td>__ Hours or amount of time limited by hospital __</td>
<td></td>
</tr>
<tr>
<td>Dietary preferences</td>
<td></td>
</tr>
<tr>
<td>__ General diet __</td>
<td></td>
</tr>
<tr>
<td>__ Vegetarian/vegan __</td>
<td></td>
</tr>
<tr>
<td>__ Kosher __</td>
<td></td>
</tr>
<tr>
<td>__ Food allergies and sensitivities __</td>
<td></td>
</tr>
<tr>
<td>__ Early solid foods after cesarean __</td>
<td></td>
</tr>
<tr>
<td>__ Other __</td>
<td></td>
</tr>
</tbody>
</table>
### Educational needs
- Breastfeeding
- Infant feeding
- Baby care
- Postpartum care for new mother
- Other

### Plans for follow-up from staff after discharge
- Availability for clinic or home visit with mother-baby nurse
- Availability of lactation help and support
- Availability of phone call to/from hospital nurse
- Amount of follow-up care desired by parents

### OPTIONS FOR HEALTHY BABY CARE FOR FIRST DAYS

#### Firstfeedings (pages 405-406)
- Breastfeeding within first hour
- Breastfeeding, but could be delayed
- Infant formula
- Feeding on cues from baby
- Feedings scheduled by hospital staff
- Supplemental feedings to breastfed baby

#### Circumcision (pages 372-373)
- None
- Immediately (within two days of age)
- Delayed (within two weeks of age)
- With one or both parents present to comfort baby
- With local anesthesia
- No anesthesia
- At religious ceremony

#### Contact between baby and parents
- 24-hour rooming-in
- Daytime rooming-in
- For feedings only, in nursery at other times

#### Newborn exam (pages 369-371)
- Performed by baby’s caregiver
- Performed by hospital caregiver
- Performed in presence of parents
- Performed in nursery away from parents

### OPTIONS FOR UNEXPECTED EVENTS FOR NEWBORN BABY

#### Premature or Sick Baby
- Parents visit baby in nursery (as desired)
- Kangaroo care for premature baby
- Parents feed and care for baby as much as possible
- If baby is in different hospital than mother, partner goes with baby

#### Feeding when baby is able to swallow milk (pages 428-429)
- Mother breastfeeds baby, if possible
- Mother pumps breast milk and feeds baby by tube or bottle
- Formula feeding by parents
- Feeding expressed breast milk or formula by nurse

#### Contact with support group
- Initiated by parents, nurses, or support group
- No contact desired

#### Medications and procedures
- Parent involvement in decision-making and procedures
- Staff availability for updates to parents

#### Stillbirth or Death of Baby (Pages 303-304)
These choices are highly personal and may not be desirable for all parents.

#### Medication for mother before, during, or after childbirth
- None
- At mother’s request
- At caregiver’s suggestion

#### Mother’s participation
- Use of labor coping techniques (with or without pain medication)
- Involved in decision-making
- Labor management left to hospital staff

#### Mother’s recovery and support
- Recovery on maternity unit
- Recovery in room separate from maternity unit
- Spiritual and grief counseling
- Later contact with support group

#### Memories of baby
- Obtain mementos (photographs, locks of hair, footprint, silhouettes, baby’s blanket)
- No mementos
- Name baby

#### Contact with baby after death
- See and hold baby after death
- No contact with stillborn baby

#### Care of baby after death
- Spiritual or religious services
- Autopsy
- Burial or cremation
Planning for Birth and Post Partum

Postpartum Resource List

Make your list of helpful people and phone numbers before your baby is born.

<table>
<thead>
<tr>
<th>Resource/Service</th>
<th>Name</th>
<th>Telephone, e-mail address, or web site</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Start Using before the Birth:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caregiver</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Birth doula</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Childbirth educator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hospital maternity unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health care information line</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical insurance provider</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Start Using after the Birth:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baby’s caregiver</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breastfeeding counselor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Postpartum doula/helper</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breast pump rental service</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diaper service</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friend or family helpers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child care, babysitters</td>
<td></td>
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<tr>
<td>Support groups</td>
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<tr>
<td><strong>Emergency Services:</strong></td>
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<tr>
<td>Police, fire, medical</td>
<td></td>
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<tr>
<td>Crisis line</td>
<td></td>
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<tr>
<td><strong>Other:</strong></td>
<td></td>
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</tr>
</tbody>
</table>
When and How Labor Begins

External Links and Resources

**Tool for Timing Contractions**
- http://www.contractionmaster.com

**Prelabor Video**

**3-D Medical Video of Vaginal Birth**
- http://www.youtube.com/watch?v=Xath6kOf0NE
When and How Labor Begins

Signs Associated with the Beginning of Labor

The following symptoms are categorized as possible signs, prelabor signs, and positive signs. These categories will help you recognize when you are truly in labor. Please note that you might not experience all of these signs and that they do not necessarily occur in a particular order. If you're unsure, call your caregiver or hospital. The positive signs are the reliable ones.

<table>
<thead>
<tr>
<th>Category</th>
<th>Signs</th>
<th>Comments (also see pages 170-175 in your book)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Possible signs (late pregnancy changes)</td>
<td></td>
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<tr>
<td></td>
<td>Backache. Vague, low, nagging; may come and go. Temporarily eased by position changes.</td>
<td>May be caused by early contractions.</td>
</tr>
<tr>
<td></td>
<td>Cramps in lower abdomen. Like menstrual cramps; may be accompanied by discomfort in thighs.</td>
<td>May be intermittent or continuous.</td>
</tr>
<tr>
<td></td>
<td>Bowel movements. Several in several hours; may be accompanied by intestinal cramps or digestive upset.</td>
<td>May be related to increase in circulating prostaglandins, which ripen your cervix while causing these other symptoms.</td>
</tr>
<tr>
<td></td>
<td>Nesting urge. An unusual burst of energy resulting in great activity and a desire to complete preparations for your baby.</td>
<td>Think of this extra energy as a sign that you will have strength and stamina to handle labor; try to avoid exhausting activity.</td>
</tr>
<tr>
<td>Prelabor signs</td>
<td>Nonprogressing contractions. Tend to remain about the same length, strength, and frequency. These prelabor contractions may last for a short time or continue for hours before they go away or begin to progress (see below).</td>
<td>Accomplish softening and thinning (effacement) of cervix, although most dilation does not occur until you have positive signs.</td>
</tr>
<tr>
<td></td>
<td>Bloody show. Passage of slippery blood-tinged mucus from vagina.</td>
<td>Associated with thinning (effacement) and early opening (dilation) of cervix; may occur days before other signs or not until progressing labor contractions have begun; continues throughout labor.</td>
</tr>
<tr>
<td></td>
<td>Leaking or trickle of fluid from vagina. Caused by a small rupture of membranes (ROM).</td>
<td>Sometimes stops when membranes seem to seal, or continues on and off for hours or days. (See precautions on page 174.) Leaking fluid is sometimes not amniotic fluid; it may be liquid mucus. Caregivers test fluid to find out. Call your caregiver if you are leaking fluid. (See page 174 for more on testing leaking fluid.)</td>
</tr>
<tr>
<td>Positive signs</td>
<td>Progressing contractions. Become longer, stronger, and/or closer together with time; usually become painful or very strong and are felt in the abdomen, back, or both.</td>
<td>These dilate the cervix, are not reduced by a change in mother’s activity. Use the Early Labor Record (page 175) or <a href="http://www.contractionmaster.com">http://www.contractionmaster.com</a> to determine the contraction pattern.</td>
</tr>
<tr>
<td></td>
<td>Gush of amniotic fluid from vagina. Caused by a large ROM.</td>
<td>Often accompanied or soon followed by progressing contractions. (See precautions on page 174.)</td>
</tr>
<tr>
<td></td>
<td>Dilation of cervix. Opening of the cervix in response to the progressing contractions.</td>
<td>This sign is not recognized by the mother. The caregiver confirms it by vaginal exam.</td>
</tr>
</tbody>
</table>
When and How Labor Begins

Early Labor Record

(See page 175 in your book)

Contractions on ________________________________ (date)

<table>
<thead>
<tr>
<th>Starting Time</th>
<th>Duration (How many seconds)</th>
<th>Interval or Frequency (Minutes since beginning of last contraction)</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

Note: You may also choose to use http://www.contractionmaster.com.
When and How Labor Begins

Packing Your Bag

For more information, see: Pregnancy, Childbirth, and the Newborn page 166 or The Simple Guide to Having a Baby pages 70-71.

If you’re birthing at a hospital or birth center: Pack one small bag for labor, bringing only what you find important for your and your support person(s)’ comfort. (The items below are only suggestions—feel free to leave out some items.) Pack a separate bag for after the birth.

For use during labor:
- Your book, print-outs from this web site, and a pen for writing down important memories
- Hairband, headband, or barrettes (to keep your hair off your face)
- Toothbrushes (for each of you), toothpaste, and lip balm (breathing techniques may dry lips)
- Two nightgowns or long T-shirts (if you don’t want to wear a hospital gown)
- Swimsuit for partner (so s/he can join you in the shower or bath)
- Warm socks
- Massage oil
- Hot water bottle, heating pad, or sock filled with rice
- Massage tools (tennis balls, soft drink cans, and rolling pins are great for back massage)
- Birth ball (if the birthplace doesn’t have one)
- Your favorite juice, tea, or frozen fruit juice bars
- Snacks for you and partner(s)
- Phone numbers of people to call after the birth
- Supplies for contact lenses and/or glasses, if needed
- Personal comfort items (your own pillow, blanket, photos, stuffed animals, and so on)
- iPod or MP3 player, CDs of relaxing music and music that helps you get up and move, and headphones or speakers
- Optional: camera, video camera, and tapes
- Optional: laptop computer (check the birthplace’s Internet access)

For postpartum stay and bringing baby home:
- Nightgown or pajamas that you can nurse in (you can also use a hospital gown)
- Robe and slippers (again, you can use the hospital’s)
- Clothes for partner if s/he will stay overnight with you
- Brush or comb, whatever toiletries are important to you
- Nursing bra
- Clothes for the ride home (usually comfortable maternity clothes)

For your baby
- Diapers and waterproof diaper cover, or a few disposable diapers
- Undershirt or “onesie” (one-piece bodysuit)
- Nightgown or a simple one-piece footed outfit (don’t worry about fancy clothes yet)
- Receiving blanket
- Warm blanket and cap (for the ride home)
- Car seat (properly installed in your vehicle before labor)
Labor Pain and Options for Pain Relief

External Links and Resources

Pain Medication and Pain Coping Tools

- “Planning Your Childbirth: Pain Relief during Labor and Delivery” by the American Society of Anesthesiologists: http://www.asahq.org/patientEducation/labordelivery.pdf
**Labor Pain and Options for Pain Relief**

**Systemic Medications for Labor Pain and Distress**

<table>
<thead>
<tr>
<th>Type and Timing</th>
<th>Drugs Used</th>
<th>Benefits and/ or Purposes</th>
<th>Possible Risks and/ or Disadvantages</th>
<th>Additional Precautions/ Procedures/Interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sedatives/ barbiturates</td>
<td>• pentobarbital (Nembutal)  • secobarbital (Seconal)  • amobarbital (Amytal)  • phenobarbital (Luminal)</td>
<td>• In smaller doses, have a sedative effect: reduce anxiety, irritability, and excitement.  • In larger doses, hypnotic: induce rest, relaxation, or sleep. They may be used to give the mother a rest by decreasing contractions in a slow, painful prelabor.</td>
<td>• To mother: Large doses may cause dizziness and disorientation and can slow labor by impairing uterine activity.  • To baby: May cause heart rate changes. May accumulate in fetal tissue and cause respiratory depression (very slow breathing), decreased responsiveness, and impaired suckling in the newborn.</td>
<td>• Should be used before 4 cm dilation. Should be discontinued before active labor to reduce effects on newborn.  • Oxygen and resuscitation equipment on hand if baby is born soon after barbiturates are given.</td>
</tr>
<tr>
<td>Tranquilizers</td>
<td>Phenothiazines:  • promethazine (Phenergan)  • prochlorperazine (Compazine) Benzodiazepines:  • midazolam (Versed)  • diazepam (Valium) Other:  • hydroxyzine (Vistaril or Atarax)</td>
<td>• Used to reduce tension, anxiety, nausea and vomiting.  • Sometimes combined with narcotics to enhance the effects of lower doses of narcotics (thus reducing narcotic side effects).  • Benzodiazepines are not used for labor because of risks to the baby. They are sometimes given after cesarean birth to reduce anxiety during the repair.</td>
<td>• To mother: May cause drowsiness, dizziness, blurred vision, confusion, dry mouth, changes in blood pressure and heart rate. When given with barbiturates or narcotics, may increase their effects.  • To baby: Phenothiazines can inhibit newborn reflexes and cause jaundice. Benzodiazepines in labor cause fetal heart rate alterations, poor muscle tone, sleepiness, and sucking difficulties.</td>
<td>• Should be discontinued before active labor to reduce effects on newborn.  • Oxygen and resuscitation equipment on hand if baby is born soon after these are given.  • Observation for and treatment of newborn jaundice</td>
</tr>
<tr>
<td>Inhalation anaesthesia</td>
<td>• nitrous oxide and oxygen (Entonox)</td>
<td>• Takes effect almost immediately.  • Causes mother to feel drowsy, lightheaded, or giddy for about a minute. Does not take away pain, but mothers are less troubled by it.</td>
<td>• To mother: Some enjoy the mental effects, some do not. Nausea and vomiting for some women. Reduces mother’s ability to push effectively.  • To baby: Little effect.</td>
<td>• Confinement to bed  • Mother should begin inhaling just before a contraction begins, so medication is in effect when contraction is at its peak.  • Rare in the United States. Common elsewhere.</td>
</tr>
</tbody>
</table>

**Note:** Rarely used today because of undesirable side effects.
<table>
<thead>
<tr>
<th>Type and Timing</th>
<th>Drugs Used</th>
<th>Benefits and/ or Purposes</th>
<th>Possible Risks and/ or Disadvantages</th>
<th>Additional Precautions/ Procedures/Interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Narcotic or narcotic-like analgesics</td>
<td>• morphine</td>
<td>• During active labor, reduce pain awareness and promote relaxation between contractions.</td>
<td>• To mother: May cause drowsiness, “high” feeling, hallucinations, dizziness, itching, nausea, vomiting, and slowing of digestion. May slow heart rate and lower blood pressure. Narcotics often interfere with mental activities and the use of self-help comfort measures. Narcotics may temporarily slow labor progress, especially if the medication is given before the active phase of labor.</td>
<td>• Usually, restriction to bed&lt;br&gt;• Continuous monitoring of fetal heart rate&lt;br&gt;• Reminders to mother to breathe deeply&lt;br&gt;• Maternal position changes or oxygen to improve FHR abnormalities&lt;br&gt;• Should be discontinued at least 2 hours before birth to reduce effects on newborn.&lt;br&gt;• Availability of narcotic antagonist for mother or baby, if necessary, to reverse side effects</td>
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<tr>
<td></td>
<td>• fentanyl (Sublimaze)</td>
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<tr>
<td></td>
<td>• meperidine (Demerol)</td>
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<tr>
<td></td>
<td>• butorphanol (Stadol)</td>
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<td></td>
<td>• nalbuphine (Nubain) (Stadol and Nubain are combination drugs—a narcotic plus a narcotic antagonist, which reduces some of the narcotic’s undesirable side effects.)</td>
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<tr>
<td>Narcotic antagonists</td>
<td>• naloxone (Narcan)</td>
<td>• Reduce narcotic effects such as hallucinations, itching, respiratory depression (very slow breathing), and low blood pressure.</td>
<td>• To mother and baby: Abrupt reversal of narcotic depression may result in rapid heart rate, increased blood pressure, nausea, vomiting, sweating, trembling, and the return of pain awareness. The effects of narcotics may return if narcotic antagonist wears off before the narcotic.</td>
<td>• Continued observation of mother or baby for return of narcotic side effects&lt;br&gt;• Repeated dose of narcotic antagonist as needed</td>
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</table>

In this chart, medications are listed with their generic (chemical) names first and their brand names in parentheses. For all medications, effects and side effects vary depending on the drug used, total dosage, timing, fetal condition, and the mother’s individual response.

Sources


E. Liu and A. Sia, “Rates of caesarean section and instrumental vaginal delivery in nulliparous women after low concentration epidural infusions or opioid analgesia: systematic review” (2004).

# Labor Pain and Options for Pain Relief

## Local Anesthetics for Labor, Delivery, and Repair

<table>
<thead>
<tr>
<th>Type and Timing</th>
<th>Drugs Used/ Who Administers</th>
<th>Benefits and/ or Purposes</th>
<th>Possible Risks and/ or Disadvantages</th>
<th>Additional Precautions/ Procedures/Interventions</th>
</tr>
</thead>
</table>
| **Paracervical block** | • mepivacaine (Carbocaine)  
• lidocaine (Xylocaine)  
• chloroprocaine (Nesacaine)  
• Can be given by obstetrician or family physician. | • Removes pain due to dilation of cervix and pressure in lower segment of uterus.  
• Awareness of contractions remains. | To mother:  
• Drop in blood pressure  
To fetus/newborn:  
• Can cause fetal distress (drop in heart rate), reduced muscle tone in newborn, newborn fussiness, decrease in some reflexes. | Routine:  
• Intravenous (IV) fluids  
• Close monitoring of mother’s blood pressure, blood oxygen levels, and fetal heart rate  
• Mother needs larger dose for paracervical than she would for an epidural catheter leading to more severe side effects for the fetus, but much less pain relief. Thus, rarely used. |

| **Pudendal block** | • Same as paracervical block | • Numbs vagina and perineum  
• Reduces pain during delivery, especially if forceps or vacuum extraction is used. | To mother:  
• May impede bearing-down reflex and effectiveness in pushing.  
• May relax muscle tone in perineum enough to impede fetal rotation.  
To fetus/newborn:  
• Similar to paracervical block | Routine:  
• Fetal monitoring  
As needed:  
• Episiotomy, forceps, or vacuum extraction  
• Rarely used, except with forceps delivery |

| **“Local” perineal block** | • Often lidocaine (Xylocaine)  
• Can be given by midwife or physician. | • Numbness in perineum.  
• Relief of pain of crowning, episiotomy, or stitching after birth. | To mother:  
• Sting of injections. If given during second stage, may increase swelling in perineum and likelihood of tears.  
To fetus/newborn:  
• Minimal to none | Postpone until after birth; use if stitches are necessary. |

In this chart, medications are listed with their generic (chemical) names first and their brand names in parentheses. For all medications, effects and side effects vary depending on the drug used, total dosage, timing, fetal condition, and the mother’s individual response.

## Sources

## Labor Pain and Options for Pain Relief

### Neuraxial Medications for Labor and Vaginal Delivery

The anesthetic is usually one of the “caine” drugs—bupivacaine (Marcaine or Sensorcaine), lidocaine (Xylocaine), ropivacaine (Naropin), mepivacaine (Carbocaine), or chloroprocaine (Nesacaine). The narcotics or narcotic-like drugs that may be used include morphine (Duramorph), fentanyl (Sublimaze), sufentanil (Sufenta), and others.

<table>
<thead>
<tr>
<th>Type and Timing</th>
<th>Drugs Used</th>
<th>Benefits and/ or Purposes</th>
<th>Possible Risks and/ or Disadvantages</th>
<th>Additional Precautions/ Procedures/Interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Epidural anesthesia</td>
<td>“Caine” anesthesia only</td>
<td>Loss of pain sensation (numbness) in the abdomen and back. Reduced pain sensation in the legs and perineum. Relaxation and sleep, mental clarity. Mother might or might not be able to move her legs. Can change positions in bed with assistance.</td>
<td>To mother: Reduced mobility Drop in blood pressure Slowing of labor progress Fever (chance increases with duration of epidural) Decreased urge to push, slower pushing stage, increased chance of malpositioned baby, more instrumental deliveries Spinal headache if the epidural needle goes in too far Secondary side effects from the procedures used to ensure safety (see next column)</td>
<td>Routine: Restriction of food and drink Intravenous (IV) fluids Restriction to bed Various devices to closely monitor mother and baby Used as needed: Oxygen by mask Pitocin to speed labor Bladder catheter Forceps, vacuum extraction, episiotomy, cesarean delivery Blood patch for spinal headache (see below) For newborn if mother had fever: In special care nursery for 48 hours Fever</td>
</tr>
</tbody>
</table>
| Epidural narcotic analgesia (nicknamed “walking epidural”) | Narcotic only | Decreases perception of pain. Good relief of labor pain until 6-8 cm. After that, mother may need anesthetic. Affects ability to move freely in bed. Some women can stand or even walk a bit, with assistance, if hospital policy allows this. Sensation other than pain (touch, pressure, temperature) remains. When compared to IV narcotics, more pain relief with less medication | To mother: Often causes itching all over body. Frequently, nausea and vomiting Feeling of weakness in legs or loss of balance while walking May alter mental state, but less so than systemic narcotics do. | Routine: Restriction of food and drink IV fluids Assistance while standing Checking muscle strength in legs before walking (Hospital policies usually won’t allow you to walk.) Monitoring (see above) Used as needed: Additional medications to control itching and nausea (May make mother sleepy; may decrease pain relief.)

© 2010 by Parent Trust for Washington Children, excerpted from Pregnancy, Childbirth, and the Newborn
<table>
<thead>
<tr>
<th>Type and Timing</th>
<th>Drugs Used</th>
<th>Benefits and/or Purposes</th>
<th>Possible Risks and/or Disadvantages</th>
<th>Additional Precautions/Procedures/Interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Epidural with combination of narcotics and anesthetics</td>
<td>• Narcotic and &quot;caine&quot; anesthetic are mixed together and given through epidural.</td>
<td>• Compared to epidural anesthesia alone: more pain sensation, more mobility</td>
<td>To mother and fetus/newborn</td>
<td>• Same as above • Most common type of epidural for labor</td>
</tr>
<tr>
<td>Epidural catheter</td>
<td>Epidural with combination of narcotics and anesthetics</td>
<td>Active labor until birth</td>
<td>Compared to epidural narcotics alone: less pain, less mobility</td>
<td></td>
</tr>
<tr>
<td>Spinal narcotic analgesia</td>
<td>Spinal injection</td>
<td>Early to active labor</td>
<td>Same as above</td>
<td></td>
</tr>
<tr>
<td>Spinal narcotic analgesia</td>
<td>Spinal injection</td>
<td>Spinal injection</td>
<td>Same as above</td>
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<td>Spinal injection</td>
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<td>Spinal injection</td>
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<tr>
<td>Combined spinal epidural (CSE)</td>
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<tr>
<td>Combined spinal epidural (CSE)</td>
<td>Spinal narcotics given first, epidural anesthesia (or anesthesia and narcotic combination) given when needed.</td>
<td>Same benefits as spinal narcotics followed by same benefits as epidural anesthesia</td>
<td>Similar to spinal narcotics, followed by epidural anesthesia</td>
<td>See above.</td>
</tr>
</tbody>
</table>

In this chart, medications are listed with their generic (chemical) names first and their brand names in parentheses. For all medications, effects and side effects vary depending on the drug used, total dosage, timing, fetal condition, and the mother’s individual response.

**Sources**


E. Liu and A. Sia, “Rates of caesarean section and instrumental vaginal delivery in nulliparous women after low concentration epidural infusions or opioid analgesia: systematic review” (2004).

### Labor Pain and Options for Pain Relief

#### Anesthesia for Cesarean

<table>
<thead>
<tr>
<th>Type</th>
<th>Drugs Used</th>
<th>Benefits and/or Purposes</th>
<th>Possible Risks and/or Disadvantages</th>
<th>Additional Precautions/Procedures/Interventions</th>
</tr>
</thead>
</table>
| **Epidural anesthesia**     | • "Caine" drugs, in a higher dose (concentration) than is given for labor.  
                              | • If an epidural catheter was in place for labor, it can be used for this increased dosage if a cesarean becomes necessary. | • Total loss of pain sensation from chest to toes. May still feel some pressure or pulling during delivery.  
                              | • Provides excellent pain relief without impairing mental awareness.  
                              | • To mother:  
                              | • Inability to move lower half of body  
                              | • Other side effects listed under epidural anesthesia for labor. Some effects may be more likely or more pronounced due to the higher dose given for cesarean anesthesia. | • Routine:  
                              | • Restriction of food and fluids by mouth  
                              | • Large amounts of intravenous (IV) fluid  
                              | • Various devices to closely monitor mother’s blood pressure, blood oxygen levels, heart function, temperature, contractions, and fetal heart rate  
                              | • Bladder catheter  
                              | • Used as needed:  
                              | • Oxygen by mask |
| **Spinal block**            | • "Caine" drugs                            | • Similar to epidural anesthesia  
                              | • Can be administered quickly, takes effect almost immediately. Lasts a few hours. | • To mother:  
                              | • Occasionally, feeling of being unable to breathe because chest becomes anesthetized  
                              | • Drop in blood pressure  
                              | • Spinal headache (1%)  
                              | • Fetal distress  
                              | • Subtle neurobehavioral effects for days | • Same as above  
                              | • If spinal headache occurs:  
                              | • Lie flat in bed for several days.  
                              | • Blood patch  
                              | • If breathing difficulties arise:  
                              | • Assisted ventilation |
| **General anesthesia**      | • Induction                                | • Rapidly provide loss of sensation and consciousness.  
                              | • May be used for cesarean birth when speed is essential. | • To mother: Causes respiratory depression (very slow breathing), lower blood pressure, and changes in heart rate. Large doses may reduce uterine activity. May cause nausea and elevated temperature. The most serious, though rare, risk is inhalation of vomited material, which can cause pneumonia and possibly death. (Chance of death is 7 in 10 million.)  
                              | • To baby: May result in respiratory depression, drowsiness, poor muscle tone, low Apgar scores. | • Antacid given to mother before receiving anesthetic.  
                              | • Intubation (tube in mother’s windpipe) to protect against inhalation of vomited material  
                              | • Monitoring of mother’s breathing, pulse, heart function (on electrocardiogram or EKG), blood pressure, and blood oxygen levels (with pulse oximeter)  
                              | • Monitoring of baby and resuscitation, if needed  
                              | • Used for 3% of planned cesareans, less than 15% of unplanned cesareans. |

In this chart, medications are listed with their generic (chemical) names first and their brand names in parentheses. For all medications, effects and side effects vary depending on the drug used, total dosage, timing, fetal condition, and the mother’s individual response.

### Sources


E. Liu and A. Sia, “Rates of caesarean section and instrumental vaginal delivery in nulliparous women after low concentration epidural infusions or opioid analgesia: systematic review” (2004).

Labor Pain and Options for Pain Relief

Reducing Effects of Fear on Labor

Like many pregnant women, you may have birth-related fears. Whether these fears are realistic or imagined, your body will respond to them. When you feel fear, you produce adrenaline, the “fight or flight” hormone. Your heart rate, blood pressure, and breathing rate increase, and effects of oxytocin are neutralized. In childbirth, this leads to less effective contractions and a longer labor.

To help you avoid the longer, more painful labor that your fears may cause, explore them prior to labor, so they won’t affect you. Start by writing down each fear.

___________________________________________________________________________________________________________
___________________________________________________________________________________________________________
___________________________________________________________________________________________________________

Explore all aspects of each fear and imagine, “What’s the worst thing that could happen?”

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Make a plan for each fear.* What could you do to prevent this situation from happening? How could you respond alternatively if it does happen? How could you come to terms with the situation? Is there a way that you could feel safe again if this circumstance arose? Ask your caregiver, childbirth educator, or doula for suggestions.

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___________________________________________________________________________________________________________
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___________________________________________________________________________________________________________
___________________________________________________________________________________________________________
___________________________________________________________________________________________________________

Once you’ve created a plan for managing each of your fears, create an image of birth involving safety and strength. You can paint, draw, write, sculpt, or use any other medium to help you create this vision. Focus on this image during the weeks prior to birth and your nervous system will respond, producing a state of relaxation. Plan to use this image in labor to help you release tension, reduce pain, and have a more effective labor pattern.

(If you have a hard time getting past your fears to this positive state, you may want to seek out counseling or extra support in preparation for the birth.)

* A woman with a severe needle phobia addressed her labor-related fears in this way: First, she educated herself (via books and a childbirth preparation class) about when a needle might be needed. She worked with her partner and childbirth educator to change her focus from the needle that she feared to the benefits a medication would bring to her if it were needed.
  She planned a home birth to reduce the chance of interventions. She made sure her partner, doula, and midwives understood her worries. She created a birth plan that shared this needle phobia in case of transfer to a hospital and asked that, if it became necessary for her to have a shot or an IV, the caregivers would first have a discussion with her (if possible) to help her understand the problem. She also asked to be able to choose where the needle was inserted. When the shot was given or the IV inserted, her partner and doula were to vigorously distract her from what was being done.
  Having made this plan, the woman was able to approach her birth with much less fear. She ended up having an uncomplicated birth at home and no needles were needed, but she was relieved to have made such a thorough plan, because it reduced her fear.
Labor Pain and Options for Pain Relief

Understanding Your Coping Style

Mother-to-be: This worksheet will help you think about your normal responses to physical and emotional challenges, as well as possible reactions to unknown situations. This will guide you in predicting what could be helpful to you in labor.

Ask yourself:
When you're sick, what makes you feel better? ___________________________________________________________________
____________________________________________________________________________________________________________
What did your parents do for you when you were sick as a child? __________________________________________________
____________________________________________________________________________________________________________
What did you like them to do? _________________________________________________________________________________
____________________________________________________________________________________________________________
What did you wish they had done for you? _______________________________________________________________________
____________________________________________________________________________________________________________
When you're exhausted, where do you find energy? _______________________________________________________________
____________________________________________________________________________________________________________
When you're scared, how do you find the courage to move forward? ________________________________________________
____________________________________________________________________________________________________________
What are some objects that symbolize safety and comfort to you? (Plan to bring these to the birthplace with you!) _________
____________________________________________________________________________________________________________

Father/support people:
You may also find labor challenging. In order to provide the best support to the mother, ask yourself the following questions.
When you're exhausted, where do you find energy? __________________________________________________________________
____________________________________________________________________________________________________________
When you're scared, how do you find the courage to move forward? ________________________________________________
____________________________________________________________________________________________________________
When you feel helpless or out of control, how do you react? __________________________________________________________________
____________________________________________________________________________________________________________
What are some things you could bring to the birthplace to increase your sense of calmness and competence? _________
____________________________________________________________________________________________________________
Who can you call for support, if needed? _______________________________________________________________________
Comfort Techniques for Pain Relief and Labor Progress

External Links and Resources

**Comfort Measures**


**Self-Care for Those Providing Labor Support**

Comfort Techniques for Pain Relief and Labor Progress

Checklist of Comfort Techniques

In early pregnancy, use this checklist to help you learn about comfort techniques. For each technique, find out: How is it done? Can you do it? When is it helpful? Why is it helpful? During your third trimester, practice these techniques until you master them. When possible, practice these with your partner(s). Some techniques might not seem helpful when you’re not having contractions, but it’s smart to have them in your “toolbox” in case they’re helpful in labor.

(The references below are to page numbers from Pregnancy, Childbirth, and the Newborn [PCN] and The Simple Guide to Having a Baby [SG].)

Relaxation (PCN 215-20, SG 109-14)
- Passive relaxation
- Roving body check
- Touch relaxation
- Distraction (movies, etc.)

Breathing (PCN 223-228, SG 115-19)
- Slow breathing
- Light breathing
- Contraction-tailored
- Slide breathing
- Variable breathing

Second Stage (PCN 232-35, SG 98-100)
- Avoiding pushing
- Spontaneous bearing down
- Directed pushing

Hydrotherapy (PCN 209-10, SG 126)
- Bath/whirlpool
- Shower

Massage/Touch (PCN 213, SG 125)
- Hand/foot
- Effleurage (Light stroking)
- Firm pressure
- Holding hands

Attention-focusing (PCN 208-09, SG 124)
- Visual focal point
- Music, voice, sounds
- Pleasant smells
- Visualization
- Chant, song, prayer

Positions/Movement (PCN 221-23, SG 127)
- Standing/leaning
- Walking
- Lunge
- Hands-and-knees
- Sitting up
- Semi-sitting
- Side-lying
- Rocking/swaying
- Squatting/supported squat

Hot/Cold Packs (PCN 211-12, SG 126)
- On lower belly
- On back
- On perineum

Help for Back Pain (PCN 228-32, SG 128-30)
- Counterpressure/massage
- Double hip squeeze
- Leaning forward
- Open knee-chest
- Pelvic rocking/hands-and-knees
- Walk, stair climb, sway
- Shower/tub

Help from Partner (PCN 214, SG 121-23)
- Suggestions/reminders
- Encouragement/praise
- Patience/confidence
- Immediate response to needs
- Undivided attention
- Eye contact
- Take Charge Routine
Comfort Techniques for Pain Relief and Labor Progress

Practice Sessions

Practice these comfort techniques in your third trimester. Each session should only take five to ten minutes; try to fit in one each day. Practice with your support partner(s) when possible. (The references below are to page numbers from *Pregnancy, Childbirth, and the Newborn* [PCN] and *The Simple Guide to Having A Baby* [SG].)

Relaxation: Tension release (PCN 215, SG 45), slow deep breathing (PCN 224, SG 116).

Visualization/imagery: Visualize yourself in a place that seems calming and safe (the beach, a mountain stream, at home, by a warm fire, and so on). Imagine how it feels, smells, looks, and sounds.

Date(s) you practiced: ___________________

Date(s) you practiced: _________________

Touch/massage: Have your partner lightly stroke your belly, or arms or legs while listening to soothing music (PCN 213, SG 125). Use slow deep breathing.

Slow dance: Have your partner rub your back lightly and rhythmically, while talking about happy memories and dreams for your future together with your baby.

Date(s) you practiced: _________________

Date(s) you practiced: _________________

Second stage positions: Practice squatting (PCN 222-23, SG 100) and breathing for pushing (PCN 232-33).

Take Charge Routine for transition (PCN 256): Have your partner sit close to you, use eye contact, use variable breathing (PCN 227, SG 119 #1), and encourage you to follow his or her rhythm.

Date(s) you practiced: __________________

Date(s) you practiced: _________________

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For the following practice sessions, time several pretend contractions. Practice the comfort techniques for sixty seconds. Then take a one-minute break to discuss with your support partner(s), giving feedback on what was helpful and what was not. Then practice another sixty-second contraction, while adapting the technique to your preferences. Then discuss, revise as needed, and practice again.

To help you better learn what techniques work best for you, you may also want to try using ice as a source of discomfort to cope with. Fill a plastic baggie with ice and hold it in your hands during each of your contractions. Working with the discomfort of the ice can help you understand what might be most helpful for working with discomfort in labor.

**Rock rhythmically, in the lunge position.**
Use a light breathing pattern (PCN 225, SG 117).

Date(s) you practiced: _________________

**Lean forward and sway in rhythm. Use light breathing.**
Your partner can rub your back in rhythm with your moving and breathing.

Date(s) you practiced: _________________

**Attention-focusing (PCN 208, SG 124): Practice several contractions, using different focal points (picture, music, touch, and so on). Use slow breathing.**

Date(s) you practiced: _________________

**Practice pelvic tilts (PCN 97, SG 57) and light breathing while your partner rubs your back.**

Date(s) you practiced: _________________

**While you practice contraction-tailored breathing (PCN 227, SG 119), have your partner hold a heating pad or ice pack on your lower back.**

Date(s) you practiced: _________________

**Practice massage for back labor (PCN 230, SG 129).**

Date(s) you practiced: _________________
What Childbirth Is Really Like

External Links and Resources

The Birth Experience from Diverse Perspectives

- *Birth Day: A Pediatrician Explores the Science, the History, and the Wonder of Childbirth* by Mark Sloan (2009)
- See also the Birth Stories recommended in the You’re Having a Baby section and the Overall Best Books recommended in the Common Changes and Concerns section.

Positive Videos about Birth

Note: Most of these videos were found via a search on YouTube—we do not have connections to the women shown in the videos. Most videos contain nudity and many contain full views of vaginal births.

- Lamaze International’s video about classes and a birth: [http://www.youtube.com/watch?v=KMG7zm_f-00](http://www.youtube.com/watch?v=KMG7zm_f-00)
- BabyCenter video: [http://www.youtube.com/watch?v=fbsIK2meWlQ](http://www.youtube.com/watch?v=fbsIK2meWlQ)
- Discovery Health’s “Deliver Me” Natural Birth episode: [http://www.youtube.com/watch?v=S0qc7rRAld0&feature=related](http://www.youtube.com/watch?v=S0qc7rRAld0&feature=related)
- Birth in a Hospital: [http://www.youtube.com/watch?v=8ecv608qKrA](http://www.youtube.com/watch?v=8ecv608qKrA)
- Hypnobirth/Water Birth: [http://www.youtube.com/watch?v=rSsaJ0Zno9s](http://www.youtube.com/watch?v=rSsaJ0Zno9s) and [http://www.youtube.com/watch?v=eaZ-glmG5Gg](http://www.youtube.com/watch?v=eaZ-glmG5Gg)
- Birth with Epidural: [http://www.youtube.com/watch?v=Bgvjiu1x8&feature=channel](http://www.youtube.com/watch?v=Bgvjiu1x8&feature=channel)
What Childbirth Is Really Like

Quick Review of Normal Labor without Pain Medications

For those planning an epidural, use this table until the epidural is given and see Chapter 10 in *Pregnancy, Childbirth, and the Newborn* to understand how medications will affect the remainder of your labor.

### Prelabor

<table>
<thead>
<tr>
<th>Phase and what happens</th>
<th>How you might feel</th>
<th>What to do</th>
<th>How your partner or doula can help</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Cervix ripens, effaces, and moves forward.</td>
<td>• May be unable to sleep through contractions.</td>
<td>• Engage in distracting activities and projects (go outdoors, visit with friends, prepare food, wash baby clothes, pack bag).</td>
<td>• Review route to hospital or birth center.</td>
</tr>
<tr>
<td>• Nonprogressing contractions; possible “restless” backache, soft bowel movements, menstrual-like cramps</td>
<td>• Tired, discouraged, anxious</td>
<td>• Restful activities (alternate with massage, dim lights, and so on).</td>
<td>• Encourage eating and drinking.</td>
</tr>
<tr>
<td>• May last for days.</td>
<td>• May overestimate progress, start rituals, go to hospital too early.</td>
<td>• Drink to thirst.</td>
<td>• Pack the car; be sure there’s enough gas.</td>
</tr>
<tr>
<td></td>
<td>• May “overreact” (that is, focus more than necessary on the contractions).</td>
<td></td>
<td>• Time contractions (5 or 6 at a time) every few hours or when labor seems to have changed.</td>
</tr>
</tbody>
</table>

### First Stage of Labor

<table>
<thead>
<tr>
<th>Phase and what happens</th>
<th>How you might feel</th>
<th>What to do</th>
<th>How your partner or doula can help</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early Labor</td>
<td>• Onset of labor until about 3 cm</td>
<td>• Same as for “Prelabor” plus:</td>
<td>• Continue timing contractions.</td>
</tr>
<tr>
<td></td>
<td>• Progressing contractions usually mild to begin with, then build to longer, stronger, closer together</td>
<td>• Mixed feelings—excited, confident, optimistic, or anxious, distressed—often all at the same time</td>
<td>• Call caregiver or hospital when contractions reach designated pattern. Give information from timing contractions.</td>
</tr>
<tr>
<td></td>
<td>• Cervix continues ripening, effacing as it begins to dilate.</td>
<td>• As contractions intensify, distraction is no longer possible.</td>
<td>• Once mother begins planned ritual, focus on her during contractions. Give her your undivided attention.</td>
</tr>
<tr>
<td></td>
<td>• Bloody show</td>
<td></td>
<td>• Give her constructive feedback, not false praise.</td>
</tr>
<tr>
<td></td>
<td>• Rupture of membranes may occur, but usually happens later in labor.</td>
<td>• Possible back pain with contractions</td>
<td>• Help her release tension in a selected part of her body on each out breath.</td>
</tr>
<tr>
<td></td>
<td>• Possible back pain with contractions</td>
<td></td>
<td>• Remind her of positions and comfort measures—drinking, eating, using toilet.</td>
</tr>
<tr>
<td>Phase and what happens</td>
<td>How you might feel</td>
<td>What to do</td>
<td>How your partner or doula can help</td>
</tr>
<tr>
<td>------------------------</td>
<td>-------------------</td>
<td>------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>Early to Active Labor (3 to 5 cm)</td>
<td>• May struggle to remain “in control” and worry that labor is too hard. • May become serious, withdrawn, focused on labor. • This is your “moment of truth,” when you recognize labor is not within your control. You may feel trapped in the labor. You may weep from discouragement. • You’re not distractable; you need your partner’s or doula’s undivided attention during contractions. • Extraneous conversation is annoying. • You may want pain medications. • If you feel safe and uninhibited and have good support, you’ll release control and accept the labor.</td>
<td>• You go to hospital or midwife joins you at home. • Try to release your need to be in control, and let the process happen as you discover what helps you cope (your spontaneous ritual). • Maintain a rhythm with your breathing and movements, letting your partner or doula help as necessary. • Keep a rhythm. That’s enough to do for now. • Follow partner’s or doula’s lead with Take Charge Routine.</td>
<td>• Drive carefully! • Use massage (hand or foot), double hip squeeze, counter-pressure, slow dancing. • Use “labor voice,” murmur soothing, encouraging words rhythmically. • Guide her with visualizations, imagery, rhythm talk, counting her breaths—whatever she responds to well. • Remember that “Rhythm is everything.” Help her keep a rhythm in her breathing, moaning, swaying, tapping, and so on. • Don’t ask a question during contractions, and use only simple yes/no questions between them. • You may be a part of her ritual—stoking, holding, talking to her through contractions; or she may close her eyes and only need you close by. • Help her follow her preferences on using pain medications (refer to Pain Medication Preference Scale).</td>
</tr>
<tr>
<td>Active Labor (5-8 cm)</td>
<td>• You’re calmer than earlier, now that you have discovered what to do to get through the contractions. • You may be in a reverie state now—unaware of much other than your labor.</td>
<td>• Same as for “Early to Active Labor,” plus: • Use the bath for relaxation and pain relief. • Continue to drink by taking frequent sips.</td>
<td>• Same as for “Early to Active Labor,” plus: • Don’t leave. • Offer drinks. • Remind her to use the toilet. Be a part of her ritual (hold her, sway with her, moan with her, or stay close and hold her hand) as she brings you into it.</td>
</tr>
<tr>
<td>Transition (8 to 10 cm)</td>
<td>• “Lost” in intensity of labor, may feel scared, angry, or frustrated. • May feel need for more help from others. • May vocalize, tremble, and feel at your limit. • May lose your rhythm and ritual. • May cry out, tense, weep, protest. • May feel hot, then cold. • May feel nauseated.</td>
<td>• Keep a rhythm. That’s enough to do for now. • Follow partner’s or doula’s lead with Take Charge Routine. • Remember, you’re almost ready to push. • Hang in there! • If your labor is not moving too fast, and you want an epidural, you can get it at this time.</td>
<td>• Maintain eye contact and a confident, calm, optimistic manner. • Use the Take Charge Routine if she’s panicky or if her eyes are clenched shut, her face is anguished, or she can’t maintain a rhythm. • Remind her about the good news of transition—she’s almost there. • Hold her tight; don’t rub her. • Don’t give up on her. • Let her weep; acknowledge her pain.</td>
</tr>
</tbody>
</table>
## Second Stage of Labor

<table>
<thead>
<tr>
<th>Phase and what happens</th>
<th>How you might feel</th>
<th>What to do</th>
<th>How your partner or doula can help</th>
</tr>
</thead>
</table>
| **The Resting Phase** (10 cm to beginning of pushing) | - You feel much better than in transition— a welcome break.  
- Relief, optimism, confidence, no pain  
- Renewed energy, enthusiasm, hope. This comes even if there is no pause in contractions.  
- Clearheaded, talkative, more aware of surroundings | - Rest or doze, if desired.  
- Remind nurse of your wishes if you want to push spontaneously with your urge to push.  
- Review positions, how to push, and how to relax your pelvic floor muscles.  
- If no contractions for more than 20 minutes, change to upright positions to encourage an urge to push. | - You may be pleasantly surprised by her excitement and change in mood.  
- Use the break to refresh yourself with a beverage, by sitting down, or by taking a bathroom break— but don’t leave.  
- Help her change positions, if necessary or desired. |

### The Descent Phase

(Your baby rotates and descends.)

- You have an urge to push—an involuntary need to strain or grunt. Usually mild at first, it becomes compelling and irresistible.  
- Your body reflexively pushes with contraction surges.  
- May feel inadequate in pushing until you get a feel for what you’re doing.  
- May find pressure in vagina alarming and fear it will get worse, making you hold back from pushing.  
- Many find this phase most rewarding; others find it painful and tedious.  
- Pain may subside as baby’s head repositions.

- You work very hard.  
- Bear down (hold your breath and strain) or push when a contraction makes you feel you can’t avoid pushing.  
- You may bellow or cry out with the effort.  
- Try to “bulge” your pelvic floor (consciously let it go) while pushing.  
- You may want to touch your baby’s head or watch his progress in a mirror.

- Encourage and praise her efforts. (Don’t yell, “PUSH!”)  
- Apply cool, moist cloths to her forehead, cheeks, neck, and chest.  
- Report on her progress (when you can see the baby’s head).  
- Remind her to release tension in her perineum.  
- Remind caregiver of her feelings about episiotomy, if appropriate.  
- Support her position, help her change positions.

- If pushing is ineffective, remind her to open her eyes and look toward where baby is coming out (may use a mirror).  
- Pain may subside as baby’s head repositions.

### Crowning and Birth

- Baby’s head no longer rocks back and forth, remains visible between contractions, and emerges.  
- Perineum and area around your urethra are most vulnerable to tearing.  
- Warm compresses help protect your perineum.  
- Caregiver either supports your perineum or (rarely) does an episiotomy.

- You’re very close to birth!  
- Excited.  
- “Rim of fire”—vaginal stretching, burning  
- Mixed feelings: You may be tempted to push hard to get it over with, despite the burning; or fearful at the burning feeling and reluctant to push.

- Recognize the burning as a sign that you’re almost done.  
- Use your partner’s help with positions.  
- Stop pushing and pant or blow when your caregiver tells you to do so, to slow the birth of the head and protect your perineum.  
- Rejoice in the birth!

- Support her as she changes positions.  
- Don’t rush her; help her keep from pushing as needed.  
- Say little or nothing when caregiver is directing her to slow birth of head.  
- Rejoice in the birth!
## Third Stage of Labor

<table>
<thead>
<tr>
<th>Phase and what happens</th>
<th>How you might feel</th>
<th>What to do</th>
<th>How your partner or doula can help</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birth of Placenta</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Lasts up to 30 minutes.</td>
<td>• Relief that labor is over</td>
<td>• Lift your gown so your baby can be skin-to-skin with you.</td>
<td>• Help her get the baby onto her bare abdomen.</td>
</tr>
<tr>
<td>• Umbilical cord is clamped and cut.</td>
<td>• Engrossment with baby</td>
<td>• Don’t rush breastfeeding. Your baby needs time to acclimate to the outside world before being ready to feed. Let her show you she is ready to start suckling.</td>
<td>• Help her breathe and focus through any painful procedures.</td>
</tr>
<tr>
<td>• Baby’s condition is evaluated (Apgar score).</td>
<td>• Concern over trembling</td>
<td>• Alarm if contractions are painful at this time</td>
<td>• Help her get a warm blanket.</td>
</tr>
<tr>
<td>• If baby is fine and hospital policy allows, baby is placed on your abdomen, skin-to-skin.</td>
<td>• Surprise at discomfort when caregiver examines your birth canal or massages your fundus after the placenta is born</td>
<td>• Baby’s condition is evaluated</td>
<td>• If she is unable to hold the baby right away, you can open your shirt and snuggle skin-to-skin with the baby.</td>
</tr>
<tr>
<td>• Uterus contracts and shrinks, placenta separates from uterine wall. You expel placenta with a few pushes.</td>
<td>• You may tremble uncontrollably for a while.</td>
<td>• You may tremble uncontrollably for a while.</td>
<td>• Delay routine newborn procedures (height, weight, bath) to get quality bonding time in this first hour.</td>
</tr>
<tr>
<td>• Caregiver checks your uterus to be sure it’s contracting and checks birth canal for a tear that needs stitches.</td>
<td></td>
<td>• Uterus contracts and shrinks, placenta separates from uterine wall.</td>
<td>• After the birth, enjoy this time for the two of you to get acquainted with your new family member!</td>
</tr>
</tbody>
</table>

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What Childbirth Is Really Like
Obstetrical Interventions during Childbirth

These interventions are used during labor and birth to screen for, diagnose, prevent, or treat problems for mother or baby. Some interventions are more routinely used than others. Use the information below, along with the Key Questions for Informed Choices on page 10 of Pregnancy, Childbirth, and the Newborn, to aid your discussion with your caregiver when planning the birth or when a problem arises.

<table>
<thead>
<tr>
<th>Intervention/How It Is Done</th>
<th>Benefits and/or Purposes</th>
<th>Risks and/or Disadvantages</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intravenous (IV) fluids</td>
<td>• Maintains hydration (adequate fluid intake) when you’re not allowed to drink liquids or are unable to keep them down. • Always given before regional analgesia to allow IV medications to counteract potential side effects. • Allows immediate access to a vein if medication or a blood transfusion is necessary. • Needed for administration of Pitocin (to augment or induce labor), some pain medications, and other medications. • Provides some calories for energy, if fluid contains dextrose (sugar).</td>
<td>• Restricts easy movement during labor; walking is more difficult. • Fluids may leak into tissues near puncture site, causing tenderness and swelling. • If excessive fluid is given, fluid overload may disturb blood chemistry and excessive swelling in early postpartum. • If you receive large amounts of fluid containing dextrose (sugar), your baby may become hypoglycemic at birth and require special care.</td>
<td>• Unnecessary if you’re drinking sufficient fluids, receiving no medication or anesthesia, and labor is progressing normally. Some caregivers and institutions routinely allow only IV fluids (nothing by mouth) from admission until after delivery. Such policies are not supported by scientific evidence. If liquids are prohibited, and feelings of dry mouth occur, ice chips can help. With a high volume of IV fluids, the baby may be born with excessive tissue fluid. These babies are heavier at birth and then may lose a higher percentage of their birth weight than other babies. If infant weight loss in the first few days exceeds 10%, the mother’s IV fluid intake in labor should be considered.</td>
</tr>
<tr>
<td>Heparin lock or saline flush</td>
<td>• This maintains an open line in case medications are needed quickly later in labor. • Is preferable to many women who don’t want IV fluids. • Less restrictive than an IV line and fluids.</td>
<td>• Slightly restrictive of your movements. • You may be disturbed at the sight of the apparatus in your arm.</td>
<td>• For a woman who has a high chance of needing medications quickly, it ensures an open line is available.</td>
</tr>
<tr>
<td>Artificial rupture of membranes (AROM) See page 280.</td>
<td>• May be used to induce or augment labor.</td>
<td></td>
<td>• Early labor AROM often does not speed labor, especially if fetus is malpositioned.</td>
</tr>
</tbody>
</table>

Fetal Heart Rate Monitoring: Options are listed in order from least interventive/least accurate (stethoscope) to most interventive/most accurate (internal EFM)

<table>
<thead>
<tr>
<th>Intervention/How It Is Done</th>
<th>Benefits and/or Purposes</th>
<th>Risks and/or Disadvantages</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fetal heart rate monitoring</td>
<td>• Enables assessment of FHR. • Noninvasive • Allows you to be mobile and active. • Encourages frequent attention from your caregiver or nurse. • Helps determine fetal position when determining location of heart tones.</td>
<td>• Heart tones may be difficult to hear. • May require you to lie supine (flat) in bed in order to hear heart tones. • Does not provide continuous printed or electronic record of FHR and contraction pattern. • Pressure of stethoscope against your abdomen may be uncomfortable. • Assessing relationship between FHR and contraction is more difficult than with EFM. (See below.)</td>
<td>• Rarely used. Because FHR is more difficult to hear with this device than with ultrasonic devices, the caregiver must place stethoscope very close to the baby’s heart. This has the added advantage of assisting the caregiver in determining the baby’s position (OP or OA).</td>
</tr>
<tr>
<td>A. Listening (auscultation) with fetal stethoscope</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caregiver (usually a nurse) uses a special stethoscope to listen to the baby’s heartbeat through your abdominal wall before, during, and after a contraction. The fetal heart rate (FHR) is usually counted every 15-30 minutes during first stage of labor and more frequently in second stage.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intervention/How It Is Done</td>
<td>Benefits and/or Purposes</td>
<td>Risks and/or Disadvantages</td>
<td>Comments</td>
</tr>
<tr>
<td>----------------------------</td>
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<td>----------</td>
</tr>
<tr>
<td>Fetal heart rate monitoring</td>
<td>Enables assessment of FHR.</td>
<td>Does not provide a continuous record of FHR and contraction pattern, and requires staff to record FHR manually.</td>
<td>Waterproof Doppler devices are available if you plan to labor in water.</td>
</tr>
<tr>
<td>B. Listening (auscultation) with a hand-held ultrasonic fetal stethoscope (often called a Doppler).</td>
<td>Is most comfortable method of FHR monitoring.</td>
<td>Assessing relationship between FHR and contraction is more difficult than with EFM. (See below.)</td>
<td></td>
</tr>
<tr>
<td>This device is placed on your abdomen and audibly and/or visually transmits the fetal heart tones. The care giver counts as described in part A above.</td>
<td>Encourages frequent attention from your caregiver or nurse.</td>
<td>Information from external EFM is not sufficient by itself to make many clinical decisions, which require further assessments.</td>
<td></td>
</tr>
<tr>
<td>Fetal heart rate monitoring</td>
<td>Enables assessment of how contractions affect FHR.</td>
<td>Needs frequent readjustment when you or your baby moves.</td>
<td>Scientific trials comparing periodic auscultation with continuous EFM have found them comparable in terms of neonatal outcomes.</td>
</tr>
<tr>
<td>C. External electronic fetal monitor (EFM)</td>
<td>Enables assessment of fetal well-being when complications arise or when Pitocin or other medical interventions are used.</td>
<td>May be uncomfortable and restrict movement (immobility may slow labor).</td>
<td>Though auscultation is a safe method, most nurses and caregivers prefer to read EFM tracings as they have not been trained to use a fetal stethoscope or Doppler in labor.</td>
</tr>
<tr>
<td>An ultrasound device, held in place by a belt around your abdomen, sends and receives soundwaves to detect FHR. Another belt holds a pressure-sensitive device in place over your fundus to detect uterine contractions. These devices are attached by wires to a monitor that displays and permanently records the FHR and uterine contractions. They are also often connected to screens in the nurses’ station.</td>
<td>Provides information needed to determine whether more sophisticated monitoring is warranted.</td>
<td>EFM can’t distinguish your heart rate from fetal heart tones; what looks like a sudden drop in FHR may actually be due to the fetus moving and your heart rate being picked up.</td>
<td></td>
</tr>
<tr>
<td>External EFM can be intermittent (10-20 minutes every hour) or continuous.</td>
<td>Provides information on frequency of uterine contractions.</td>
<td>Decreases your ability to use abdominal or back massage.</td>
<td></td>
</tr>
<tr>
<td>Fetal heart rate monitoring</td>
<td>Provides a continuous printed record of FHR and contraction pattern.</td>
<td>Does not provide accurate measurement of strength of contractions.</td>
<td></td>
</tr>
<tr>
<td>D. Telemetry unit for external EFM.</td>
<td>Does not require artificial rupture of membranes.</td>
<td>May tempt your birth partner to watch monitor instead of you.</td>
<td></td>
</tr>
<tr>
<td>The recording devices contain tiny wireless remote transmitters, along with the FHR and contraction detectors. The transmitter sends data to monitors located in your labor room and in the nurses’ station.</td>
<td>Provided information on frequency of uterine contractions.</td>
<td>May lead to less personal contact between you and nurse.</td>
<td></td>
</tr>
<tr>
<td>Fetal heart rate monitoring</td>
<td>Enables assessment of how contractions affect FHR.</td>
<td>Interpretation of FHR patterns varies among practitioners; fetal distress is sometimes diagnosed when not actually present.</td>
<td></td>
</tr>
<tr>
<td>E. Internal EFM.</td>
<td>Enables assessment of fetal well-being when complications arise during induction or augmentation with Pitocin, or when other interventions are used.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FHR is measured by a scalp electrode attached to the skin of the fetal head (or other presenting part). Wires from the electrode transmit your baby’s heart rate to the monitor, which displays and records it.</td>
<td>Provides information on intensity and frequency of uterine contractions.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uterine contractions are measured by placing a fluid-filled intrauterine pressure catheter (IUPPC) in your uterus. During contractions, the increase in intrauterine pressure is measured, displayed visually, and recorded on the print-out.</td>
<td>Provides information needed to determine if further medical assistance or testing is warranted.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Telemetry can also be used with internal EFM.</td>
<td>Is more accurate than external monitor.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Requires rupture of membranes.</td>
<td>Sometimes, a combination of internal and external electronic monitoring is used (for example, the internal fetal scalp electrode and the external uterine pressure device).</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Restricts free movement out of bed, including walking (unless telemetry used).</td>
<td>As with external EFM, studies comparing periodic auscultation and internal EFM found no differences in newborn outcome, except for labors in which Pitocin was used.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>May cause infection of uterus and/or infection of baby’s scalp.</td>
<td>The sounds of the internal FHR are more distinct (sounding like “clap, clap, clap”) than those with the external EFM (which has a shushing sound).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Interpretation of FHR patterns varies among practitioners; fetal distress is sometimes diagnosed when not actually present.</td>
<td>Because of the additional risks, internal EFM is only used when external EFM is not giving adequate information.</td>
<td></td>
</tr>
<tr>
<td>Intervention/How It Is Done</td>
<td>Benefits and/or Purposes</td>
<td>Risks and/or Disadvantages</td>
<td>Comments</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------------------------</td>
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<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Fetal scalp stimulation test</td>
<td>• Allows accurate assessment of fetal well-being if EFM indicates problems.</td>
<td>• Requires a vaginal exam.</td>
<td>• This simple test helps to distinguish fetal “stress” (in which the fetus is able to handle the temporary shortage of oxygen caused by contractions) from fetal “distress” (in which the fetus no longer has the ability to compensate).</td>
</tr>
<tr>
<td>Done when EFM indicates possible fetal distress. During a vaginal exam, caregiver presses on or scratches fetal scalp. The response of the fetal heart rate to stimulation is observed. A reactive heart rate (rises 15 beats per minute for 15 seconds) is a reliable sign that the fetus is handling the stress of labor. If the heart rate is not reactive, fetus probably is not compensating well.</td>
<td>• Noninvasive to the fetus • Rapid and reliable test that can be repeated whenever desired. • No cost</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fetal oxygen saturation testing⁷</td>
<td>• Had initially shown promise as a means for assessing fetal well-being.</td>
<td>• Expensive, difficult to administer, ineffective at presenting unnecessary cesareans.</td>
<td></td>
</tr>
<tr>
<td>An oxygen sensor is placed next to the fetus‘ cheek inside the womb in order to continually monitor her oxygen status.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal pulse oximetry</td>
<td>• Enables caregiver to continually assess whether you have adequate oxygen.</td>
<td>• None, except for minor inconvenience of the device squeezing a finger</td>
<td>• If oxygen level too low, you’re asked to breathe more deeply or given oxygen by mask. Pulse oximetry is also used with newborn babies whose Apgar scores are low or who have breathing problems. The sensor is attached to the baby’s skin, usually on the foot.</td>
</tr>
<tr>
<td>A sensor is clipped to your finger or toe to measure oxygen level in your blood. The sensor is attached to a monitor that displays the blood oxygen level.</td>
<td>• Useful during epidural/spinal analgesia/anesthesia and during a cesarean to ensure that your oxygen levels allow adequate oxygen transfer to the fetus.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amnioinfusion</td>
<td>• Reduces fetal distress. • Allows labor to continue when a cesarean might otherwise be the only solution. • If umbilical cord is being compressed during contractions and causing fetal distress, the added fluid cushions the cord and protects against fetal distress.</td>
<td>• Requires that you remain in bed. • Requires that your membranes be ruptured. • Possible risk of fetal hypothermia (low temperature) or intrauterine infection.</td>
<td>• When cord compression occurs or meconium is present, amnioinfusion reduces incidence of FHR decelerations, cesareans for fetal distress, and low Apgar scores. Fluid may be injected repeatedly or continuously. A simple, low-cost, though invasive way to improve newborn outcomes.</td>
</tr>
<tr>
<td>When amniotic fluid volume is low from ruptured membranes or from diminished production of fluid, sterile saline solution may be injected into your uterus via an intrauterine pressure catheter (like the one used with internal EFM).</td>
<td></td>
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<tr>
<td>Episiotomy</td>
<td>• Enlarges birth canal. • May speed delivery of baby by a few minutes, an advantage with fetal distress. • Provides a straight incision, which is easier to repair than some large tears (however, it also increases the chance of a large tear). • Provides more space for application of forceps or vacuum extractor. • Reduces compression from vaginal tissues on head of a premature baby.</td>
<td>• Causes discomfort in early postpartum period. • Sometimes performed routinely when not necessary. • May delay mother-infant interaction as episiotomy is repaired. • Site of incision may become infected or bleed. • May cause pain with intercourse for several months after birth. • Serious tears of the perineum are more likely with episiotomy than without.</td>
<td>Some of the disadvantages of episiotomy also occur with a spontaneous tear. However: When an episiotomy is not done, the likelihood of an intact perineum (no tear) ranges from 25 to 60%, depending on the skill of the caregiver. And, even when a spontaneous tear occurs, it’s usually smaller or no larger than the average episiotomy.³ Healing from a tear is more rapid and postpartum pain is less than with most episiotomies.⁵</td>
</tr>
<tr>
<td>A surgical incision is made into your perineum just before the birth of your baby’s head.</td>
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<tr>
<td>Intervention/How It Is Done</td>
<td>Benefits and/or Purposes</td>
<td>Risks and/or Disadvantages</td>
<td>Comments</td>
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<tr>
<td>----------------------------</td>
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<tr>
<td><strong>Vacuum extractor</strong></td>
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<td></td>
<td></td>
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<tr>
<td>Used in the second stage,</td>
<td>Helps descent of baby’s</td>
<td>May cause bruising or</td>
<td>If several attempts with</td>
</tr>
<tr>
<td>a silicone cap-like device</td>
<td>head’s head.</td>
<td>swelling of baby’s soft</td>
<td>the vacuum extractor fail,</td>
</tr>
<tr>
<td>is applied to the baby’s</td>
<td>Can sometimes be applied</td>
<td>scalp tissues or of your</td>
<td>a cesarean is done.</td>
</tr>
<tr>
<td>head. A tube connects</td>
<td>when fetus is at a higher</td>
<td>perineum.</td>
<td>You may be asked to push</td>
</tr>
<tr>
<td>the cap to a vacuum pump</td>
<td>station than is safe for</td>
<td>Not as helpful with</td>
<td>as hard as you can while</td>
</tr>
<tr>
<td>that creates suction.</td>
<td>use of forceps.</td>
<td>rotation as forceps.</td>
<td>the vacuum is being used,</td>
</tr>
<tr>
<td>During contractions,</td>
<td>Requires less space in</td>
<td></td>
<td>to enhance the chances of</td>
</tr>
<tr>
<td>the caregiver pulls on a</td>
<td>vagina than forceps, so</td>
<td></td>
<td>a vaginal delivery.</td>
</tr>
<tr>
<td>handle attached to the cap</td>
<td>less need for episiotomy</td>
<td></td>
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<tr>
<td>to assist the baby’s</td>
<td>and anesthesia.</td>
<td></td>
<td></td>
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<tr>
<td>descent.</td>
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<tr>
<td><strong>Forceps</strong></td>
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<tr>
<td>Two spoon-like instruments</td>
<td>Helps rotate baby’s head</td>
<td>Usually requires an</td>
<td>The decision between forceps</td>
</tr>
<tr>
<td>or tongs are inserted,</td>
<td>to an anterior position.</td>
<td>episiotomy, May bruise</td>
<td>and vacuum extraction is</td>
</tr>
<tr>
<td>one at a time, into your</td>
<td>Helps bring baby down</td>
<td>soft tissues of baby’s</td>
<td>usually made by the doctor</td>
</tr>
<tr>
<td>vagina and applied to each</td>
<td>when anesthesia is used</td>
<td>head or face. Usually</td>
<td>and is based on his or her</td>
</tr>
<tr>
<td>side of your baby’s head.</td>
<td>or bearing-down efforts</td>
<td>requires regional or</td>
<td>training and experience.</td>
</tr>
<tr>
<td>The doctor turns and/or</td>
<td>are insufficient.</td>
<td>local anesthesia. May</td>
<td></td>
</tr>
<tr>
<td>pulls on the handles to aid</td>
<td>May be used to facilitate</td>
<td>bruise or tear vaginal</td>
<td></td>
</tr>
<tr>
<td>rotation and descent.</td>
<td>birth of head with a</td>
<td>tissues.</td>
<td></td>
</tr>
<tr>
<td>Used only in second stage</td>
<td>breech vaginal birth.</td>
<td></td>
<td></td>
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<tr>
<td>when the baby is at a low</td>
<td>Speeds delivery if fetus</td>
<td></td>
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<tr>
<td>stage.</td>
<td>is in trouble.</td>
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</tbody>
</table>

**End Notes**

5. Ibid.
When Childbirth Becomes Complicated

External Links and Resources

**Tips for Helping Labor to Progress**

**Evidence-based Resources on Interventions**
- The Cochrane Reviews of pregnancy-related topics: http://www.cochrane.org/reviews/en/subtopics/87.html
- “Let Labor Begin on Its Own” (Lamaze Healthy Birth Practice #1): http://www.lamaze.org/carepractices/CarePractice1.pdf
- “Avoid Interventions That Are Not Medically Necessary” (Lamaze Healthy Birth Practice #4): http://www.lamaze.org/carepractices/CarePractice4.pdf

**Understanding Your Rights**

**Critiques of Modern Maternity Care**
- *Born in the USA: How a Broken Maternity System Must Be Fixed to Put Women and Children First* by Marsden Wagner (2006)
When Childbirth Becomes Complicated

Self-help and Complementary Medicine Methods for Cervical Ripening and Induction

Most of the following methods have been used for decades. However, they are slower in ripening the cervix and less effective in inducing labor than combinations of prostaglandins, Pitocin, and amniotomy. If the need for induction is urgent for the well-being of you or your baby, the methods below are not the best choice. However, if the need is less urgent, these inexpensive, less invasive, low-risk methods might be considered.

### Self-help Methods

<table>
<thead>
<tr>
<th>Method/How It’s Done</th>
<th>How It’s Thought to Work</th>
<th>Benefits and/or Purposes</th>
<th>Possible Risks and/or Disadvantages</th>
<th>Comments</th>
</tr>
</thead>
</table>
| Brisk walking long distances (30 minutes to many hours) | • May increase contractions, especially if baby is very low in your pelvis. | • More contractions may cause changes in the cervix. | • Tiring  
• May cause hip joint pain if walking is excessive.  
• Not often successful | • Avoid overexertion and exhaustion.  
• High blood pressure and hip joint pain are reasons not to walk.  
• Remember that walking may be excellent once you’re in labor to improve contractions and progress and ease pain. |

Frequent sexual intercourse, clitoral stimulation, orgasm

We assume you know how to do these...

<table>
<thead>
<tr>
<th>How It’s Thought to Work</th>
<th>Benefits and/or Purposes</th>
<th>Possible Risks and/or Disadvantages</th>
<th>Comments</th>
</tr>
</thead>
</table>
| • Orgasm with or without intercourse is associated with the release of oxytocin, which causes contractions.  
• Semen contains prostaglandins, which ripen the cervix.  
• Oral or manual clitoral stimulation may also start labor. | • Even if it does not start labor, sex may ripen the cervix.  
• May be more pleasurable for most people than other methods. Can do it yourself or with a partner. | • Orgasm is sometimes difficult to achieve when trying to start labor.  
• Contractions may subside shortly after sexual activity stops. | • If the membranes have ruptured: Intercourse, oral sex, and digital penetration should not occur, because the chance of infection for you or fetus increases. Clitoral stimulation would be okay.  
• Note: Sexual activity and orgasm are usually fine in pregnancy, and will not cause a labor to begin prematurely. However, if you are high-risk for preterm labor, ask your caregiver’s advice. |
<table>
<thead>
<tr>
<th>Method/How It’s Done</th>
<th>How It’s Thought to Work</th>
<th>Benefits and/or Purposes</th>
<th>Possible Risks and/or Disadvantages</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nipple stimulation</td>
<td>Increases oxytocin production and causes contractions. May ripen cervix (through contractions acting to increase prostaglandin), and sometimes starts labor if cervix is ripe.</td>
<td>May be able to avoid other forms of induction. Can be administered by self or with aid of partner.</td>
<td>Difficult to regulate “dose” of oxytocin. Some cases of fetal distress have been reported with fetuses already known to be at high-risk. You may tire of nipple stimulation or become sore. Contractions may stop when nipple stimulation is discontinued, which can be discouraging.</td>
<td>Should not be done if you have a high-risk baby. Should be discontinued if contractions are painful, come more frequently than every 5 minutes, or last longer than 1 minute. Keep the stimulation gentle to avoid soreness. Some caregivers prefer that you first try nipple stimulation at a hospital or clinic, where the fetal heart rate can be monitored closely during it to check fetal response to contractions.</td>
</tr>
<tr>
<td>Castor oil</td>
<td>Thought to work by stimulating prostaglandin production.</td>
<td>May hasten ripening of cervix; may start labor within 2-8 hours; is a strong laxative, and empties bowels.</td>
<td>Causes intestinal cramps, diarrhea, for some sudden and very uncomfortable; for others gradual and manageable, for several hours. Little scientific evaluation of effectiveness. Frequently does not succeed. Has an unpleasant texture and taste, which is helped somewhat by the preparations described here. Could aggravate hemorrhoids.</td>
<td>Best if started very early in the morning. Check with caregiver before using this intervention. Castor oil has been used to start labor for centuries. It’s a gamble whether it will work and how uncomfortable you will be. Some women think it’s worthwhile; others don’t.</td>
</tr>
<tr>
<td>Acupressure</td>
<td>See acupuncture below. (See page 214 in your book for illustrations of where these points are located.)</td>
<td>Has no known risks, when done properly. If successful, avoids need for other induction methods.</td>
<td>Might not work, or might require several attempts over several days. Slight discomfort (You’ll know you’ve found the right spot to press on when it’s just a little tender to the touch.)</td>
<td>CAUTION: Experts advise against pressing these points on a pregnant woman before her due date, as they can cause contractions and increase the risk of preterm labor. Partners: find the points on yourself, but don’t use them on the mother until after 38 weeks.</td>
</tr>
</tbody>
</table>

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## Complementary Medicine Methods

<table>
<thead>
<tr>
<th>Types and Names of Specific How It's Given Agents and Methods</th>
<th>Benefits and/or Purposes</th>
<th>Possible Risks and/or Disadvantages</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Herbal preparations</strong>&lt;br&gt;• Blue and/or black cohosh&lt;br&gt;• Evening primrose oil&lt;br&gt;• Other herbs</td>
<td>• May hasten ripening of cervix and/or increase contractions.&lt;br&gt;• Teas, tinctures, and capsules can be self-administered.</td>
<td>• Scientific evidence of benefit is lacking; success rates are unknown.&lt;br&gt;• Side effects may include stomach upsets, increased blood pressure, and nausea.</td>
<td>• These preparations are not used in conventional obstetrics but are popular with some midwives and alternative practitioners. An herbalist may be consulted for guidance.&lt;br&gt;• Do not use these agents if you have high blood pressure.</td>
</tr>
<tr>
<td><strong>Evening primrose oil:</strong>&lt;br&gt;• Capsules by mouth&lt;br&gt;• Oil applied directly to cervix.</td>
<td>• In the small doses administered, no side effects are thought to exist.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Homoeopathic solutions</strong>&lt;br&gt;• Caulophyllum (tincture from blue cohosh)&lt;br&gt;• Cimicifuga&lt;br&gt;• Pulsatilla&lt;br&gt;• Other preparations</td>
<td>• Tablets taken orally or tinctures placed under the tongue, beginning as early as 36 weeks, increasing the dose until 40 weeks.</td>
<td>• Scientific evidence is lacking; success rates are unknown.</td>
<td>• These preparations are not used in conventional obstetrics, but are popular with some midwives and alternative practitioners.</td>
</tr>
<tr>
<td><strong>Cimicifuga</strong>&lt;br&gt;36 weeks, increasing the dose until 40 weeks.</td>
<td>• May hasten ripening of the cervix.&lt;br&gt;• Can be self-administered.</td>
<td></td>
<td>• Choice of agent and dosage is based on many characteristics.</td>
</tr>
<tr>
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<td>• Choice of agent and dosage is based on many characteristics.</td>
</tr>
<tr>
<td><strong>Other preparations</strong></td>
<td>• May hasten ripening of the cervix.&lt;br&gt;• Can be self-administered.</td>
<td></td>
<td>• Choice of agent and dosage is based on many characteristics.</td>
</tr>
<tr>
<td><strong>Acupuncture stimulation</strong>&lt;br&gt;Needles are inserted at specific acupuncture points, determined by the acupuncturist. The needles may be spun, heated, or stimulated with weak electrical current. Usually done outside the hospital.</td>
<td></td>
<td></td>
<td>• Though not understood or used by most North American medical practitioners, scientific research proves it to be effective in shortening pregnancies.</td>
</tr>
<tr>
<td></td>
<td>• Unblocks energy along critical meridians. Blocked energy is thought to impair the onset of labor.&lt;br&gt;• Western medicine has no clear explanation for how acupuncture works.</td>
<td>• Requires additional training for caregiver or referral to an acupuncturist (additional cost).&lt;br&gt;• Success rate lower than with many types of medical induction.</td>
<td></td>
</tr>
</tbody>
</table>
When Childbirth Becomes Complicated

Medical Non-drug Methods to Ripen the Cervix or Induce Labor

If medical induction of labor becomes necessary, the first step is to be sure the cervix is ripe, effaced, and ready to dilate. If it is not ripe, various devices, manual techniques, and/or prostaglandins or other substances may be used to ripen the cervix in preparation for induction with Pitocin (discussed below). Sometimes, the ripening agents not only ripen the cervix, they start labor without the need for Pitocin.

<table>
<thead>
<tr>
<th>Method/How It’s Done</th>
<th>How It’s Thought to Work</th>
<th>Benefits and/OR Purposes</th>
<th>Possible Risks and/OR Disadvantages</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balloon catheter (two types)</td>
<td>• Mechanically dilates the cervix. • May stimulate prostaglandin production.</td>
<td>• Can be removed easily and quickly. • Does not require hospitalization or close monitoring. • Can be safely used for induction in women who have had a prior cesarean.</td>
<td>• Unintentional rupture of membranes (ROM) more likely than with less invasive methods. • Studies show this method shortens pregnancy (by hastening ripening and early dilation of cervix).</td>
<td>• Use as a non-drug method of induction. Little discomfort once inserted. • The balloon slips out when the cervix has opened. • Can be left in for hours or days. • See page 279 in your book. • Safer for vaginal birth after cesarean (VBAC) than prostaglandin.</td>
</tr>
<tr>
<td>A Foley balloon catheter (same as that used to empty the bladder), or a two-balloon catheter (one balloon is placed within the cervix, and one in vagina just outside the cervix) is inserted through the cervix. Balloons are filled with 30 to 80 milliliters of saline, so the inner balloon presses against the internal cervical opening.</td>
<td>• Increases prostaglandin production after 37 weeks.</td>
<td>• Particularly useful if cervix is unfavorable for induction. • Reduces the need for other methods of induction when mother is past due date. • Can be repeated. • Can be done outside the hospital.</td>
<td>• Increased risk of infection and unintentional ROM. • Bleeding if placenta is previa or low-lying. • Painful for mother. • Requires enough cervical ripening to allow insertion of a finger.</td>
<td>• Women often pass brownish discharge hours later and confuse it with “bloody show.” • See page 280.</td>
</tr>
<tr>
<td>Stripping (sweeping) the membranes Caregiver inserts a finger into the internal cervical opening and separates membranes from the lower uterine segment. If cervix is too closed, it is massaged vigorously.</td>
<td>• Increases prostaglandin production. • If fetal head moves down with AROM, there may be some mechanical pressure-induced dilation.</td>
<td>• When used with Pitocin, reduces length of labor compared to Pitocin alone. • The procedure is no more painful than a vaginal exam. • Allows caregiver to check amniotic fluid for meconium, to assess fetal well-being.</td>
<td>• Increased risk of maternal or fetal infection • Increased risk of prolapsed cord (if fetus is at a high station) • Once AROM has been done, there is a commitment to delivery (the baby must be born, even by cesarean, if labor goes on too long). See box on page 280. • Requires some dilation of the cervix before it can be done. • Increased risk of non reassuring fetal heart rate patterns due to cord compression. • If done to speed labor, may increase pain of contractions. • If baby’s head is malpositioned, AROM may prevent it from repositioning, which complicates labor and requires major interventions.</td>
<td>• If induction with AROM is unsuccessful, a cesarean is necessary because of the risk of infection. If induction without AROM is unsuccessful, the Pitocin can be turned off and the woman can rest and possibly avoid a cesarean. • AROM is sometimes done in spontaneous labor to speed progress; it’s sometimes successful, but carries same risks as AROM for induction. • AROM is necessary for internal electronic fetal monitoring. (See page 252.) • Intravenous antibiotics may be used if membranes are ruptured for several hours. • See page 280 for more information.</td>
</tr>
<tr>
<td>Amniotomy (Artificial Rupture of Membranes—AROM) (also used to speed labor; see page 280.) Caregiver inserts an amni- hook through the cervix and makes a hole in the membranes, releasing amniotic fluid. Procedure is often done in conjunction with Pitocin for induction, especially if induction is medically indicated.</td>
<td>• Increases prostaglandin production.</td>
<td>• Can be removed easily and quickly.</td>
<td>• Unintentional rupture of membranes (ROM) more likely than with less invasive methods.</td>
<td>• Use as a non-drug method of induction. Little discomfort once inserted. • The balloon slips out when the cervix has opened. • Can be left in for hours or days. • See page 279 in your book. • Safer for vaginal birth after cesarean (VBAC) than prostaglandin.</td>
</tr>
</tbody>
</table>
When Childbirth Becomes Complicated

Drugs to Ripen the Cervix, Induce Labor, or Contract the Uterus

<table>
<thead>
<tr>
<th>Medical Methods Using Drugs: Types and Names of Specific Drugs</th>
<th>How It’s Given</th>
<th>Benefits and/or Purposes</th>
<th>Possible Risks and/or Disadvantages</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Prostaglandin E2</strong> (PGE2 or dinoprostone)</td>
<td>Prepil, a commercially produced prostaglandin gel, is placed within or around the cervix with a syringe. Dose may be repeated after 6 and 12 hours. Cervidil, a controlled-release vaginal insert, releases PGE2 steadily for 12 hours (unless removed earlier). A soft pouch of Cervidil is placed just behind the cervix, and only one dose is given. Can be removed easily by a string attached to the insert (like a tampon).</td>
<td>Hastens ripening of cervix may trigger onset of labor. Cervidil is the easiest form to administer and least invasive for the mother. Improves success of induction with Pitocin. Rarely, these may occur: Uterine hyperstimulation and fetal distress, requiring quick removal and administration of a tocolytic, such as terbutaline. Possible nausea, vomiting, or diarrhea. Pain at site of PGE2. Requires caution if used in women with asthma, glaucoma, liver, or kidney disease. Cervidil sometimes slips out, unnoticed by the woman. Cervidil is very expensive compared to misoprostol (described below).</td>
<td>Removal of Prepil gel, if necessary, must be done by suctioning or douching, which is awkward, slow, and uncomfortable. Cervidil can be quickly removed by mother or caregiver. Pitocin is usually begun about 1-2 hours after discontinuation of prostaglandin. Should not be used for VBAC (vaginal birth after cesarean) as it increases the incidence of uterine scar separation.</td>
<td></td>
</tr>
<tr>
<td><strong>Synthetic prostaglandin E1</strong> (PGE1 or misoprostol)</td>
<td>1⁄4 tablet (25 micrograms) is placed in the vagina behind the cervix, or 1⁄2 tablet (50 micrograms) is given orally. Higher doses have more risks.</td>
<td>Low cost. Easy to administer. Can be repeated no more often than every 4 to 6 hours. Has lower rate of failed induction than other induction methods. More likely to start labor than dinoprostone (PGE2).</td>
<td>Excessive, frequent uterine contractions (more common than with PGE2). Fetal distress. Cannot be removed if contractions are excessive. Requires a tocolytic drug to reduce excessive contractions.</td>
<td>Misoprostol is the most recently introduced agent for cervical ripening and labor induction. Is not approved by the U.S. Food and Drug Administration (FDA) for this purpose. Scientific trials are still needed to establish optimal dosage, effectiveness, and safety for mother and baby. Not to be used for women who have had a prior cesarean.</td>
</tr>
<tr>
<td><strong>Cytotec</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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### Labor Induction/Augmentation Agents

<table>
<thead>
<tr>
<th>Medical Methods Using Drugs: Types and Names of Specific Drugs</th>
<th>How It's Given</th>
<th>Benefits and/or Purposes</th>
<th>Possible Risks and/or Disadvantages</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synthetic oxytocin • Oxytocin • Pitocin • Syntocinon</td>
<td>• Beginning dose is low and increased gradually until a rate of 3 contractions per 10 minutes is achieved. • Some caregivers prefer to increase Pitocin quickly; others do it slowly. Can be used to induce or augment (strengthen) contractions.</td>
<td>• Causes uterine contractions and dilation of the cervix. • Has a short half-life; when turned off, it wears off quickly.</td>
<td>• Uterine hyperstimulation • Fetal distress • Longer labor in hospital and possibly greater pain than with spontaneous labor. • Excessive fluid retention • Requires continuous electronic fetal monitoring. Close nursing care. • Increases chances of cesarean in first-time mothers with no medical need to be induced. • Increases chances of prematurity, as due date is often unclear.</td>
<td>Most inductions are elective (not medically indicated). Does not succeed if the cervix is unripe (“failed induction”), which leads to a cesarean. When done for convenience, benefits might not outweigh risks. IV Oxytocin does not have some beneficial psychological effects as oxytocin made in the body. Research on optimal dosage protocols is needed.</td>
</tr>
</tbody>
</table>

### Drugs to Contract the Uterus after Birth

<table>
<thead>
<tr>
<th>Medical Methods Using Drugs: Types and Names of Specific Drugs</th>
<th>How It's Given</th>
<th>Benefits and/or Purposes</th>
<th>Possible Risks and/or Disadvantages</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synthetic oxytocin • Oxytocin • Pitocin • Syntometrine Ergot alkaloids • Ergometrine Methylergonovine maleate • Methergine</td>
<td>• Contracts the uterus after birth.</td>
<td>• Causes uterine contractions, to reduce the possibility of excessive bleeding after birth.</td>
<td>• Nausea and vomiting • Headache • Possible increased chance of retained placenta or elevated blood pressure • Rare side effects include cardiac arrest, eclampsia (postpartum), and pulmonary edema.</td>
<td>Nipple stimulation (by breastfeeding or with manual stimulation) and fundal massage are other ways to encourage the uterus to contract after the birth. Some caregivers routinely give a drug to contract the uterus as the baby is being born; others give it only if the uterus is not contracting adequately after birth.</td>
</tr>
<tr>
<td>Misoprostol • Given orally, under the tongue, or rectally (600 micrograms).</td>
<td>• Contracts the uterus after birth.</td>
<td>• Both oral and rectal forms reduce postpartum hemorrhage, but not as well as other injectable agents listed above. • Less expensive than other methods.</td>
<td>• With both oral and rectal forms, frequent: maternal fever, shivering • Less effective than other methods.</td>
<td>May be useful in areas where injectable agents are not available and where costs are a primary consideration. Lowest effective dose has not been established, which would be desirable, since side effects are dose-related.</td>
</tr>
</tbody>
</table>
All about Cesarean Birth

External Links and Resources

What Life Is Like for a New Mother

External Links and Resources

**Birth Control**
- [http://www.plannedparenthood.org/health-topics/birth-control-4211.htm](http://www.plannedparenthood.org/health-topics/birth-control-4211.htm)

**Fatherhood**
- *Fatherneed: Why Father Care is as Essential as Mother Care for Your Child* by Kyle Pruett (2001)
- *Father’s First Steps: 25 Things Every New Dad Should Know* by Robert W. Sears and James M. Sears (2006)

**Adoption**
- *Adoption Parenting: Creating a Toolbox, Building Connections* edited by Jean MacLeod and Sheena Macrae (2006)

**Relationship with Partner:**
- *Becoming Parents: How to Strengthen Your Marriage as Your Family Grows* by Pamela Jordan, Scott Stanley, and Howard Markman (2001)
- Look for a Bringing Baby Home workshop near you at: [http://www.bbholine.org](http://www.bbholine.org)
What Life Is Like for a New Mother

Planning for a New Family Life

Use these pages to think about what life will be like with your baby and how you may divide responsibilities with your partner. No matter what you plan, the reality may be different, so prepare to be flexible!


How do you plan to learn about breastfeeding (a class, friends and family, books, or other sources)?

____________________________________________________________________________________________

____________________________________________________________________________________________

Who can you call for breastfeeding advice (friends, family members, coworkers)?

____________________________________________________________________________________________

If challenges come up, what resources can you use for help (a lactation consultant, breastfeeding support group, hotline, or online forum)?

Plan for expressing breast milk: By hand ☐  Manual pump ☐  Electric pump ☐

Will you introduce a bottle? ________  When? ______________  Who will introduce it? __________________________

Feeding the Parents

Before your baby is born, what food will you stock up on? List at least fifteen foods that: you can eat with one hand while holding a baby, don’t need any preparation, taste good hot or cold, and don’t spoil when left out for a few hours. Buy a month’s supply of these foods!

____________________________________________________________________________________________

____________________________________________________________________________________________

____________________________________________________________________________________________

____________________________________________________________________________________________

____________________________________________________________________________________________

After your baby’s born, who will be responsible for grocery shopping? ______________________________

Who will cook dinner (when you have time to cook)? ________________________________________________

Hygiene

Plan for diapers: Wash your own ☐  Diaper service ☐  Disposable ☐  Mix ☐

Who will be responsible for changing the baby when you’re together?

Who will be responsible for getting rid of the dirty diapers and providing the clean ones (washing and putting away/putting dirties out for service to pick up/putting out trash and buying new disposables)?

Bathing: Who will bathe the baby? ______________________________

Laundry: Who will be responsible for washing clothes? ______________________________  Putting them away? ______________________________
Sleep and Nighttime Wake-ups
Where will your baby sleep?
- In your room
- In baby’s own room
- Mix
- In your bed
- In co-sleeper
- In cradle/bassinet
- In crib
- Mix

Once your baby has arrived and you’re adapting to the reality of life with him or her, some of your plans may change. No matter where your baby sleeps, it’s important that you make sure he or she is safe.

What do you need to do to make your baby’s sleep environment(s) as safe as possible? (PCN page 392, SG page 230)

When your baby wakes up in the middle of the night, who will be responsible for:
- Going to the baby first?
- Feeding the baby?
- Diaper changes?
- Calming the baby?

Cleaning and Household Tasks
Which household tasks can you totally ignore or let slide for your baby’s first six weeks?

For tasks that must be done, who will be responsible for what?

Caring for Your Baby/Playing with Your Baby
Who will have primary responsibility for the baby:
- In the morning?
- During the daytime?
- During the evening?
- Weekends?

What techniques do you plan to use for calming your baby?

Again, your plans may change as you get to know your baby, your baby’s temperament, and your own parenting styles. This plan will evolve day to day!

Support (PCN page 340, SG page 176)
Who can help you after the birth (bring food, run errands, do dishes, laundry, and so on)?

When you need emotional support, whom can you call?
What Life Is Like for a New Mother
A Letter to Share with Those Who Offer to Help Out

We've heard that we'll need help and support after the baby comes. People say, “Sometimes when parents are caring for all the needs of a newborn, they have a hard time taking care of their own needs.” We're asking for your help, in case this is true for us.

Once a day, we'll need someone who can come check in on us and help us out with whatever we need. Here's what would help:

1. Call to remind us that you're coming, and see if we need you to pick up or bring anything (such as a hot meal, diapers, or groceries). If we don't answer the phone, leave a message and we'll call back when we can!
2. When you arrive, forgive us if our house is messy and we haven't showered. Ask us again what we most need: We may need help washing dishes, starting the laundry, watching the baby while we shower or nap, or we may just need someone to sit and listen to us talk.
3. Some days we might enjoy having a visitor over for an hour or two. Other days we'll rather have quiet time to ourselves and might ask that you only stay for a few minutes. Please plan to be flexible.
4. Other things we may need help with:

   ___________________________________________
   ___________________________________________
   ___________________________________________
   ___________________________________________
   ___________________________________________
   ___________________________________________

We really look forward to you meeting our new baby and we're happy that you'll be part of our baby's life! However, we want to remind you that in the early days after the birth, we'll be learning our new job as parents. We expect that we'll want to do all of the baby care things. We'll ask you if it turns out that we need help with caring for our baby, but mostly, we need you to help take care of us! If you can help, please fill this out and give it back to us. Thanks!

Name_________________________________________ Phone Number ____________________________

What day(s) of the week, and what time(s), are you most likely to be able to help?

   Sunday ____________ Monday ____________ Tuesday ____________ Wednesday ____________
   Thursday ____________ Friday ____________ Saturday ____________

How many times could we call on you in the first weeks? ______________________________________

Is there anything you especially want to help with, or don’t want to help with? ____________________

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When Post Partum Becomes Complicated

External Links and Resources

**Difficult Birth Experience**

- Birth trauma-related web site that includes discussion forums and information on birth-related post-traumatic stress disorder (PTSD): [http://solaceformothers.org/](http://solaceformothers.org/)
- International Cesarean Awareness Network: Support groups, discussion forums, and articles about recovering from cesarean birth and planning vaginal birth after cesarean (VBAC) at [http://www.ican-online.org](http://www.ican-online.org).

**Postpartum Mood Disorders**

- Postpartum Support International: 800-944-4773 or [http://www.postpartum.net](http://www.postpartum.net)

**Infant Loss**

Caring for Your Baby

External Links and Resources

**Overall Baby Care**
- *The Baby Book: Everything You Need to Know About Your Baby from Birth to Age Two* by William Sears and Martha Sears (2003)
- *Loving Care: Birth to 6 Months*, by the Nova Scotia Department of Health Promotion and Protection, is a great overview of all the basics, from feeding, sleeping, and keeping your baby clean to secure attachment and games and activities to enhancing brain development: [http://www.gov.ns.ca/hpp/publications/09045_Birthto6MonthsBooks_Jul09_En.pdf](http://www.gov.ns.ca/hpp/publications/09045_Birthto6MonthsBooks_Jul09_En.pdf)
- Website for parents from the American Academy of Family Physicians: [http://www.familydoctor.org](http://www.familydoctor.org)
- Website for parents from the American Academy of Pediatrics: [http://www.healthychildren.org](http://www.healthychildren.org)
- Website by the Sears family: [http://www.askdrsears.com](http://www.askdrsears.com)
- Mothering Magazine: [http://www.mothering.com](http://www.mothering.com)

**Vaccination**
- Recommended vaccination schedule: [http://www.cdc.gov/vaccines/recs/schedules/child-schedule.htm](http://www.cdc.gov/vaccines/recs/schedules/child-schedule.htm)
- U.S. Centers for Disease Control (CDC) hotline at 800-232-SHOT (7468)

**Home Safety and Unsafe Products**

**Brain Development**
- *Touchpoints: Birth to Three* by T. Berry Brazelton and Joshua D. Sparrow (2006)
- Parenting Counts: [http://www.parentingcounts.org](http://www.parentingcounts.org)
- The University of Michigan Health System on Developmental Milestones: [http://www.med.umich.edu/1libr/yourchild/devmile.htm](http://www.med.umich.edu/1libr/yourchild/devmile.htm)
- Zero to Three National Center for Infants, Toddlers, and Families: [http://www.zerotothree.org](http://www.zerotothree.org)

**SIDS Risk Reduction and Safe Sleep Practices**
- First Candle: 800-221-7437 or [http://www.firstcandle.com](http://www.firstcandle.com)
- American SIDS Institute: 800-232-7437 or [http://www.sids.org](http://www.sids.org)
- American Academy of Pediatrics Policy Statement: [http://pediatrics.aappublications.org/cgi/content/full/105/3/650](http://pediatrics.aappublications.org/cgi/content/full/105/3/650)
- Co-sleeping: [http://mothering.com/sleep](http://mothering.com/sleep)

**Sleep and Calming Crying**
- *The No-Cry Sleep Solution: Gentle Ways to Help Your Baby Sleep Through the Night* by Elizabeth Pantley (2002)
- How to Double-Swaddle Your Baby: [http://www.youtube.com/watch?v=EOnsKlluHlg](http://www.youtube.com/watch?v=EOnsKlluHlg)
Premature and Ill Babies

- Online support for parents of preemies: [http://www.prematurity.org/preemieslists.html](http://www.prematurity.org/preemieslists.html)
Caring for Your Baby

Sample Sleep and Activity Chart

Symbols

Sleep
Awake and crying or fussy
Awake and content
Diaper change

Feeding-breast
Feeding-bottle
Parent-baby interaction (bath, car ride, play, etc.)

Date

1 a.m.
2
3
4
5
6
7
8
9
10
11
Noon
1 p.m.
2

4/5

4/6

4/7

Sleep and Activity Chart for You to Complete

Symbols

Sleep
Awake and crying or fussy
Awake and content
Diaper change

Feeding-breast
Feeding-bottle
Parent-baby interaction (bath, car ride, play, etc.)

A.M.

P.M.

Date

12
1
2
3
4
5
6
7
8
9
10
11

Noon
1
2
3
4
5
6
7
8
9
10
11

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## Childhood Vaccinations

<table>
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<tr>
<th>Vaccination and Effects of Disease</th>
<th>Side Effects of Vaccine</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTaP (diphtheria, tetanus, acellular pertussis)</td>
<td>Local pain and tenderness at the injection site, mild fever, and irritability, all of which might last a day or two.</td>
<td>DTaP replaces the old DPT vaccine, and its use has greatly reduced the risk of serious side effects.</td>
</tr>
<tr>
<td>Diphtheria</td>
<td>Serious side effects:</td>
<td>Available in one injection along with Hep B and IPV (polio) vaccinations. This combination vaccine, called Pediarix, is given at 2, 4, and 6 months of age and reduces the number of injections for the baby.</td>
</tr>
<tr>
<td>Tetanus: Severe spasm of the neck and jaw muscles (lockjaw), which is fatal in approximately 11% of cases.</td>
<td>Crying lasting over 3 hours (11 in 10,000 vaccinations)</td>
<td></td>
</tr>
<tr>
<td>Pertussis (acellular): Long and severe bouts of coughing (whooping cough): 70% of pertussis deaths occur in children under 1 year of age.</td>
<td>Convulsions (3 in 100,000 vaccinations) Listlessness, floppiness, limp or pale (5 in 100,000 vaccinations)</td>
<td></td>
</tr>
<tr>
<td>Hep A (hepatitis A)</td>
<td>Temporary pain and tenderness at injection site.</td>
<td>Vaccine is capable of providing prolonged, but not lifelong, immunity.</td>
</tr>
<tr>
<td>Hepatitis A: Food-borne viral infection of the liver with symptoms of nausea, abdominal discomfort, weakness, and jaundice.</td>
<td>Occasionally, headache or fever.</td>
<td>Recommended for children in certain regions; ask your child’s caregiver.</td>
</tr>
<tr>
<td>Hep B (hepatitis B)</td>
<td>Side effects are rare.</td>
<td>Some parents choose to delay the first vaccine to avoid stressing the baby.</td>
</tr>
<tr>
<td>Hepatitis B: Blood-borne viral infection of the liver with symptoms of nausea, weakness, and jaundice; can lead to chronic liver infection, which is associated with cirrhosis and liver cancer.</td>
<td>Localized pain and tenderness at injection site.</td>
<td>Some question the need for a baby to receive Hep B unless the mother carries the virus, because a baby is highly unlikely to get Hepatitis B from intravenous (IV) drug use or sexual encounters (the common modes of transmission).</td>
</tr>
<tr>
<td>Hib (H. influenza type b)</td>
<td>Redness at injection site and mild fever that might last a day or two.</td>
<td>The most serious infections occur in the first 4 years of life.</td>
</tr>
<tr>
<td>Haemophilus influenza type b: Respiratory infection with cold-like symptoms and muscle aches and pains; Hib disease is the most common cause of bacterial meningitis. In 25 percent of cases, this type of meningitis can result in permanent brain damage.</td>
<td>High fever (over 101.4°F or 38.5°C) occurs with 1 in 100 vaccinations.</td>
<td>Rarely, allergic reactions have been reported.</td>
</tr>
<tr>
<td>Influenza (inactivated influenza vaccine)</td>
<td>Soreness and redness at the injection site, occasional fever and aches lasting 1 to 2 days.</td>
<td>Parents might consider getting the influenza vaccination themselves to protect young infants who can’t be vaccinated until 6 months of age.</td>
</tr>
<tr>
<td>Influenza: Viral infection with fever, cough, sore throat. It can lead to pneumonia and can cause high fevers and seizures in infants and children.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IPV (inactivated poliovirus vaccine)</td>
<td>IPV may cause pain and tenderness at the injection site, but it doesn’t cause paralytic polio.</td>
<td>IPV contains an inactivated (or dead) form of the virus.</td>
</tr>
<tr>
<td>Polio: Viral infection with fever, headache, loss of appetite, vomiting, and sore throat; can lead to muscle weakness and paralysis; 10% of cases are fatal.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MMR (measles, mumps, rubella)</td>
<td>Possible tenderness at the injection site and mild fever; 5-12 days later, may develop a rash and fever that might last a day or two.</td>
<td>Report a high fever or convulsion to your baby’s health care provider.</td>
</tr>
<tr>
<td>Measles: Rash and fever; can possibly result in hearing loss, encephalitis, cognitive delays, or death.</td>
<td>May develop mild, temporary joint pain 2 weeks or more after vaccination; the pain may cause your child to limp temporarily.</td>
<td></td>
</tr>
<tr>
<td>Mumps: Infection of the salivary glands; can result in infection of testicles, possibly leading to sterility or in meningitis, possibly leading to deafness or death.</td>
<td>Very rarely, a high fever or convulsions occur.</td>
<td></td>
</tr>
<tr>
<td>Rubella (German measles): Not serious for children; for pregnant women, can cause miscarriage, stillbirth, or birth defects affecting the eyes, ears, heart, and neurological system of the baby.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vaccination and Effects of Disease</td>
<td>Side Effects of Vaccine</td>
<td>Comments</td>
</tr>
<tr>
<td>-----------------------------------</td>
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<td>----------</td>
</tr>
<tr>
<td><strong>PCV (pneumococcal conjugate vaccine)</strong>&lt;br&gt;Pneumococcal disease: Bacterial disease that is a frequent cause of pneumonia, bacteremia (infection of the blood), sinusitis, and acute otitis media (ear infections); could cause meningitis or death.</td>
<td>Possible redness and soreness at injection site, loss of appetite, fussiness, and mild fever. Fever is more common for those receiving DTaP at the same time. Very rarely, a high fever or convulsions can occur.</td>
<td>Duration of protection after vaccination is unknown. Another form of this vaccine (pneumococcal polysaccharide vaccine, or PPV) is given to older children and adults, especially those 65 years and older.</td>
</tr>
<tr>
<td><strong>Rota (rotavirus vaccine)</strong>&lt;br&gt;Rotavirus: Infection with severe diarrhea, often accompanied by fever and vomiting. Occurs most commonly in infants and young children.</td>
<td>This vaccine, given by mouth, may cause mild, temporary diarrhea or vomiting in 1 to 3% of infants within 7 days of receiving the vaccine.</td>
<td>This vaccine should not be given to infants who are ill or who have diarrhea or vomiting.</td>
</tr>
<tr>
<td><strong>Var (varicella)</strong>&lt;br&gt;Chicken pox: Viral infection with a mild fever and blister-like rash. Rare but serious complications include scarring from the rash, serious skin infection, encephalitis, pneumonia, and even death.</td>
<td>Localized pain at the injection site and mild fever. Occasionally, the child develops a chicken pox-like rash at the injection site within 2 days, or a generalized rash in 1-3 weeks.</td>
<td>Effects of the vaccine might not last until adulthood. A person who has been vaccinated has less risk for developing shingles later in life than a person who had chicken pox.</td>
</tr>
</tbody>
</table>

For a current schedule of recommended vaccinations from the CDC, go to http://www.cdc.gov/vaccines/recs/schedules. For more information about individual vaccines and variations in schedule, see http://www.cdc.gov/vaccines and The Vaccine Book: Making the Right Decision for Your Child by Robert Sears (2007).
Caring for Your Baby

Calling Your Baby’s Doctor

For more information, see Pregnancy, Childbirth, and the Newborn (PCN) page 388 or The Simple Guide to Having a Baby (SG) page 243.

Be familiar with newborn warning signs and call your baby’s doctor or clinic anytime you see them! (PCN page 393, SG page 244). Also call anytime you’re worried about your baby’s health.

Here are some questions the doctor or nurse may ask, so be sure you have the answers ready before you call.

• What is your baby’s temperature?
• What symptoms have you noticed? (For example, is your baby coughing? Vomiting? Is there a rash?)
• Is your baby acting differently from the way she usually acts? (For example, is she fussier than usual? Is she very sleepy?)
• Is your baby eating normally?
• Are your baby’s bowel movements the same as usual? Is your baby wetting as many diapers as usual?
• What have you done to treat the symptoms? How is it working?
• Is anyone else sick at home or day care?
• Is your baby on any medications, or does she have any special health issues?
• What is the name and phone number of your pharmacy or drugstore?

Have a pen handy to write down your caregiver’s suggestions here:
Routine care of the newborn includes many tests and procedures. These vary somewhat among health care providers and institutions. Try to find out which ones are used by your health care provider at your place of birth. Most of the following tests are routinely performed and a few are only used when medically indicated.

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<tbody>
<tr>
<td>Infant vital signs</td>
<td>The nurse or midwife will assess the baby’s vital signs (temperature, heart rate, and respiration) to be sure she’s adjusting to life as a newborn and to detect any problems with her heart, lungs, or body temperature.</td>
<td>Normal infant heart rate is 90-160 beats per minute with a regular rate and rhythm and no audible heart murmurs. Infants breathe 30-60 times per minute. The infant should appear pink and breathe easily without grunting, flaring nostrils, or retracting her chest (pulling in her chest under her ribs). If the heart rate or rhythm is cause for concern, or if there is a breathing problem, your baby will be assessed by her health care provider or admitted to the nursery. Normal underarm temperature is between 97.4°F and 99.5°F. If she has a fever, she’ll be admitted to the nursery and may have a septic workup (see page 370 in Pregnancy, Childbirth, and the Newborn) and intravenous (IV) antibiotics. If she is too cool, she’ll warm up quickly if placed skin-to-skin with you and covered with warmed blankets. If she is still cool after 20 or 30 minutes, she may be wrapped warmly in several blankets and placed under a special radiant warming light or admitted to the nursery and placed in a special bed or isolette for warming.</td>
</tr>
<tr>
<td>Vitamin K</td>
<td>Vitamin K is injected into your baby’s thigh. Vitamin K given soon after birth enhances blood clotting and may prevent a bleeding disorder of the newborn called hemorrhagic disease.⁷ The American Academy of Pediatrics recommends the injectable form of vitamin K. The infant receives one shot in the thigh muscle. Breastfed babies are slower to produce adequate amounts of vitamin K than those fed formula. Formula contains small amounts of vitamin K.⁹¹⁰</td>
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<tr>
<td>Newborn eye care or prophylaxis</td>
<td>Erythromycin or tetracycline ointment or, rarely, silver nitrate drops are placed in the eyes within an hour or so after birth to prevent infection and possible blindness if the newborn is exposed (in the birth canal) to the bacteria causing gonorrhea. Erythromycin also decreases the risk of an eye infection caused by chlamydia.⁷ All can cause temporary blurring of vision. Delaying the procedure up to the allowed 1 hour gives you some time with the baby when she is alert and can see more clearly. Eye prophylaxis can’t prevent all possible eye infections such as those caused by the herpes simplex virus, Group B streptococcus, or Hemophilus influenza biotype IV.</td>
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<tr>
<td>Septic workup (Not routinely done—only used when medically indicated)</td>
<td>Blood is drawn and cerebrospinal fluid may be obtained by spinal tap; samples are sent to the laboratory to be tested for bacteria that cause illness. Results are available in about 48 hours. Baby is admitted to the nursery for IV antibiotics. If the blood and cerebrospinal fluid are found to be normal, antibiotics will be discontinued. If the tests show the presence of bacteria, the baby will stay in the nursery for a full course of antibiotic therapy.</td>
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<tr>
<td>Test for jaundice (Not routinely done—only used when there are concerns about jaundice)</td>
<td>Blood taken by pricking the baby’s heel is sent to a laboratory, where the bilirubin level is determined. If high, the baby has significant jaundice. Sometimes, a special instrument, such as a jaundice meter, is used to estimate the blood levels of bilirubin by flashing a light over the skin of the baby’s sternum or forehead. If the baby’s skin and whites of her eyes are yellowish, an elevated bilirubin level is suspected. Most jaundice is mild and disappears with little or no treatment. Jaundice may also result from prematurity, bruising of the baby during labor or birth, blood incompatibilities (Rh and ABO), sepsis (infection), exposure to certain drugs given to the mother in labor, or liver or intestinal problems. (See page 416 in Pregnancy, Childbirth, and the Newborn for a more detailed discussion of jaundice and its treatment.)</td>
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<tr>
<td>Test for hypoglycemia</td>
<td>Blood obtained by a heel prick is tested for hypoglycemia (low blood sugar).</td>
<td>Hypoglycemia is most common in babies over 8 pounds 13 ounces or under 5 pounds; if the baby is chilled; or if the baby is preterm or post term. Hypoglycemia can lead to respiratory distress, lethargy, slow heart rate, seizures, and (in the most severe cases) death. Treatment includes frequent breastfeeding or formula feeding and/or feedings of sugar water (5 or 10 percent dextrose solution). In more serious cases, the baby may be admitted to the nursery and given IV dextrose. Low blood sugar can occur in babies when the mother is diabetic or when the mother has received large amounts of IV fluids with dextrose and water during labor.</td>
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<tr>
<td>Infant security</td>
<td>All hospitals and large birth centers should have a policy in place to prevent kidnapping, to ensure that all babies are properly identified, and to safeguard against switching infants.</td>
<td>Learn about the infant security policy at your hospital or birth center. All babies should be given wrist and ankle bands at birth that match their mothers. All staff providing care for babies should wear easy-to-read identification badges. And there should be a written plan for how the facility would respond if an infant were missing. Many facilities have video surveillance and sensors that lock doors and units immediately when a baby is missing. Having your baby in your room with you at the hospital (or birth center) and being sure that you never leave her unattended at the birth facility or after you go home are the best ways to keep your baby safe.</td>
</tr>
<tr>
<td>Newborn hearing screening</td>
<td>Newborn hearing is assessed in the first days after birth using one of several devices for a period of about 10 minutes while the infant is sleeping.</td>
<td>Not all states or provinces have mandatory hearing screening for newborns. Infants who are born prematurely, who have a family history of hearing deficits or deafness, or who have been exposed to pathogens or medications that put them at risk for hearing loss or deafness are tested. Universal hearing screening is being considered as a standard for all babies, since 50 percent of infants with hearing deficits have no known risk factors.</td>
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Caring for Your Baby

Newborn Screening

Newborn babies are screened for a variety of conditions. The conditions are all rare, but affected babies greatly benefit from early diagnosis and treatment. These tests require the collection of a blood specimen obtained by pricking the heel of the infant. The blood specimen is taken near the time of hospital discharge but before 7 days of age. (If the initial specimen was collected before 24 hours of age, a second specimen is collected before 2 weeks of age.*

Testing for newborn hemoglobinopathies (red blood cell disorders), including sickle cell anemia and beta thalassemia, is also done in a majority of states. States and provinces vary widely in the number and types of conditions for which they screen. The American College of Medical Genetics recommends twenty-nine conditions be targeted for screening. The March of Dimes offers parents information about all these conditions and tests.** The National Newborn Screening and Genetics Resource Center provides information about commercial and non-profit organizations offering newborn screening tests that parents may use to test their infants for conditions not targeted by their state or province’s testing.***

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<td>Test for PKU (phenylketonuria)</td>
<td>PKU is an inherited metabolic disease occurring in 1 infant in every 25,000 in the United States.** With this disease, the infant is unable to digest phenylalanine (an amino acid), which builds up in the blood.</td>
<td>If untreated, PKU causes mental retardation. It’s treated by diet. A low phenylalanine formula or combining breastfeeding with a low phenylalanine formula is used during infancy. Once solid foods are introduced, a special diet followed through adolescence is very effective in preventing retardation.*</td>
</tr>
<tr>
<td>Test for hypothyroidism</td>
<td>Hypothyroidism (low production of thyroid hormone) occurs in 1 in every 5,000 newborns in the United States.** The condition can be transient or long-term.</td>
<td>There is a higher incidence among females, offspring of mothers with thyroid disorders, and those who have other children with thyroid disorders. Treatment with replacement hormone avoids serious long-term effects, including mental retardation, growth failure, deafness, and neurological abnormalities.*</td>
</tr>
<tr>
<td>Test for galactosemia</td>
<td>Galactosemia (inability to digest galactose, a sugar in milk) is a hereditary disorder and occurs in 1 in 50,000 infants.**</td>
<td>Symptoms include vomiting, diarrhea, jaundice, and poor weight gain. Treatment includes a diet that is galactose free. Without treatment, galactosemia is fatal.*</td>
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</tbody>
</table>

**http://www.marchofdimes.com
***http://genes-r-us.uthscsa.edu
Feeding Your Baby

External Links and Resources

Books about Breastfeeding

- *The Nursing Mother’s Companion* by Kathleen Huggins (2005)

Web Sites about Breastfeeding

- http://www.lli.org
- http://www.breastfeeding.com
- http://www.breastfeedingonline.com
- http://www.drjacknewman.com
- http://www.bestforbabes.com
- http://www.kellymom.com/
- http://www.breastfeedingmakesimple.com

Forums for Discussing Breastfeeding and Getting Advice

- http://forums.lli.org/
- http://www.mothering.com/discussions/
- http://forum.kellymom.net/

Medications and Health Issues

- *Medications and Mothers’ Milk* by Thomas W. Hale (2010)
- Breastfeeding after breast or nipple surgery: http://www.bfar.org
- Solutions for low milk supply: http://www.lowmilksupply.org
- Mothers Overcoming Breastfeeding Issues (MOBI): http://www.mobimotherhood.org

Information on Choosing a Breast Pump

- http://www.kellymom.com

Women’s Stories about the Breastfeeding Experience

- *The Breastfeeding Café: Mothers Share the Joys, Challenges, and Secrets of Nursing* by Barbara Behrmann (2005): Stories from nursing mothers about what the breastfeeding experience is like.

Find an Internationally Board Certified Lactation Consultant (IBCLC)

- http://www.ilca.org

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Books for Children about Pregnancy and Birth

- *Hello Baby!* by Lizzy Rockwell (2000): For ages two to five, pictures and simple explanations help children learn about pregnancy, hospital visits, and what to expect when the baby comes home.
- *Runa’s Birth: The Day My Sister Was Born* by Uwe Spillmann and Inga Kamietth (2006): This wonderfully illustrated story of birth is told from a child’s point of view.
- *Waiting for Baby* by Harriet Ziefert (1998): For ages three to seven, this story is about a boy who has trouble awaiting his baby sister’s birth.

Books for Children about Babies and Siblings

- *I’m a Big Brother and I’m a Big Sister* by Joanna Cole and Maxie Chambliss (1997): For ages two to six, these books talk about the importance of a family. Except for the sex of the main character, the stories are identical.
- *My New Baby* by Annie Kubler (2000): This board book uses only pictures to tell the story of a family in which the mother breastfeeds and the father helps with housework and baby care. It’s for preschoolers and younger children.
- *My New Baby* by Mercer Mayer (2001): For ages one to five, this story uses simple language to explain what it’s like to have a new baby and ways a sibling can play with the baby.