Nausea and Vomiting During Pregnancy

Do all women have nausea or vomiting during pregnancy?

About one in 4 pregnant women have only mild nausea. Three of every 10 pregnant women have nausea that is bad enough to interfere with their daily lives. Half of all pregnant women have both nausea and vomiting during the first months of pregnancy. Nausea and vomiting during pregnancy tends to be the worst at 8 to 10 weeks after your last menstrual period. It usually goes away by 12 to 16 weeks after your last period. Nausea and vomiting during pregnancy is often called "morning sickness" but can occur all day long or at any time in the day or night.

What causes nausea and vomiting during pregnancy?

The cause of nausea and vomiting during pregnancy is not known for sure. Changes in hormone levels may be involved. If your mother had morning sickness when she was pregnant, you may be more likely to have nausea and vomiting during pregnancy. A history of motion sickness or stomach problems before you got pregnant may be another risk factor. Nausea during pregnancy is worse if you are dehydrated (there is not enough fluid in your body) or if the level of sugar in your blood is low from not eating often enough.

Are nausea and vomiting during pregnancy dangerous?

Mild nausea and vomiting may make you feel awful, but it will not hurt you or your baby. You can talk to your health care provider about ways to make you feel better if nausea and or vomiting is making it hard for you to do your normal activities. Lots of vomiting that keeps you from keeping any food down is rare, but severe vomiting can cause health problems. You should call your health care provider if any of the following happen:

- You are not able to keep any liquids or foods down for 24 hours
- You are vomiting several times a day or after every meal
- You have abdominal pain, difficulty urinating, or a fever
- You do not urinate as often as usual and your urine is dark in color
- You are weak, dizzy, or faint when you stand up
- You do not gain weight or you lose weight in a week

How are nausea and vomiting treated?

Nausea or vomiting during pregnancy is treated in 3 steps:

1. Simple diet changes in what you eat and how often you eat may lessen nausea and help you avoid vomiting. This is all it takes for many women.
2. If diet changes are not enough, you can try eating ginger or using acupressure bands. Both have been shown to decrease nausea in research studies.
3. If the nausea and/or vomiting are making it hard to do your usual activities, your health care provider can prescribe medication.

Your health care provider can talk with you about how often you have nausea and are vomiting then help you decide which of the following ways to treat nausea and vomiting will be best for you.

Step One: Lifestyle and Diet Changes

- Drink small amounts of fluids often all day long. Drinking a small amount at one time will also help the nausea lessen. Cold drinks may make you feel better than hot drinks will.
- Eat small meals every 2 to 3 hours. Do not wait to be hungry or thirsty before you eat or drink.
- Eat something plain like crackers, toast, or cereal in the morning. Some women find it helps to eat something before getting out of bed. Avoid eating foods that have strong odors.
- Avoid foods that are greasy, fried, spicy, or very hot.
- Try eating foods that are high in carbohydrates, such as potatoes, noodles, rice, or toast.

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- Do not lie down right after eating.
- Some women say dairy products like yogurt are helpful, but this does not work for every woman.
- Prenatal vitamins may make your nausea worse. If you take your prenatal vitamin at night or with food, it may not make you nauseated. Your provider can also help you find a vitamin that does not make your nausea worse. Vitamins that do not have iron in them are less likely to cause your stomach to be upset. Children's vitamins that have folic acid can also be used. If you stop taking a prenatal multivitamin, you should take one tablet of folic acid daily (0.4 mg, which is 400 micrograms per day). Folic acid tablets will not worsen nausea.

Step Two: Treatments that Do Not Use Medications

Ginger

Ginger has been used for treating nausea since ancient times and can lessen nausea. Ginger root tea, ginger gum, ginger snaps, ginger syrup added to water, ginger ale, and all other forms of ginger are safe to use in pregnancy. You can also buy ginger capsules at a drug store. The dose of ginger that has been studied for nausea and vomiting in pregnancy is 1 gram per day. Some forms of ginger like tea or cookies do not list the dose. Ask your health care provider or pharmacist how often you should take ginger products that do not have the dose of ginger listed.

Acupressure Bands

Seabands are wristbands with a pressure point placed on the inside of your wrist. They are often used for motion sickness. Some women find them helpful for nausea during pregnancy, and they are safe.

Step Three: Medication

There are several different types of nausea medicines that work well and are safe for you and your baby. Because nausea and vomiting is caused by different "triggers" in your body, you and your health care provider can work together to find the medicine that is right for you. There are both over-the-counter and prescription medicines that can be used if your nausea and vomiting are severe.

Over-The-Counter Medication

Over-the-counter medications for motion sickness should not be taken during pregnancy unless recommended by your health care provider. Many women have found that vitamin B6 is helpful for making mild nausea better. Vitamin B6 does not help stop vomiting. Your health care provider can help you choose the dose and how often to take vitamin B6 if you want to try it.

Prescription Medication

If your nausea and vomiting continues after trying lifestyle and diet changes and over-the-counter medications or you are vomiting frequently, you may need a prescription medication. There are several different prescription medicines that have been studied and found to be safe for you and your baby. Your health care provider can talk with you about these medicines.

For More Information

Motherisk
Nausea and Vomiting Helpline (800) 436-8477
http://www.motherisk.org/women/morningSickness.jsp

MedlinePlus: Morning Sickness
https://www.nlm.nih.gov/medlineplus/ency/article/003119.htm

Flesch-Kincaid Grade Level: 7.9
Approved March 2016. Replaces "Nausea and Vomiting during Pregnancy" published in Volume 51, Issue 4, July/August 2006.

Making Decisions about Prenatal Tests for Birth Defects

What are the kinds of prenatal tests for birth defects?

There are 2 kinds of prenatal tests for birth defects: screening tests and diagnostic tests. All women will be offered screening tests. Some women may be offered diagnostic tests.

What are screening tests for birth defects?

Screening tests separate those pregnant women whose baby *might* have certain conditions from those who *probably don't* have the birth defect being tested for. There are no physical risks to you or your baby from having any of the screening tests.

Serum screens are blood tests. These tests tell you if there is a higher chance your baby has a defect in the spine or brain, or Down syndrome. A high or low result on this test does not mean your baby has a problem for sure. These results only identify which women should have diagnostic tests to find out if something is wrong. There are several different kinds of serum screens. Depending on the test, they are done between 11 and 20 weeks of pregnancy.

The cystic fibrosis blood test tells you if you have a gene for cystic fibrosis that can be passed on to your baby. Cystic fibrosis is a disease that can affect the lungs and stomach. This blood test can be done anytime during pregnancy. If you have the gene, your partner can be tested to see if your baby has a chance of having cystic fibrosis.

Ultrasound is a way to look at your baby inside your uterus (womb) using sound waves that make an image of the baby on a monitor. Ultrasound can pick up certain problems depending on when in pregnancy it is done. An ultrasound done at 16 to 20 weeks of pregnancy shows your baby's heart, brain, and other organs. Most women are offered an ultrasound at this time in their pregnancies. Sometimes ultrasound can miss problems.

What are the diagnostic tests for birth defects?

Pregnant women aged 35 and older and women with a family history of certain birth defects may also be offered diagnostic tests. These tests can tell you for sure if your baby has certain birth defects.

Chorionic villus sampling is a test done on a very small piece of your placenta (afterbirth). The test is done by putting a tiny tube into your uterus through your vagina or by putting a needle into your uterus through the skin on your lower abdomen. It is usually done between 10 and 12 weeks of pregnancy. This test has a small risk of causing infection or miscarriage.

Amniocentesis is a test of the amniotic fluid that is around the baby in your uterus. The fluid is taken out of the uterus with a needle that is put into the uterus through the skin in your lower abdomen. It is generally done between 15 and 18 weeks of pregnancy. The tests that are done on the fluid can find Down syndrome and a few other genetic problems that are passed from the parents to the baby. This test has a small risk of causing infection or miscarriage.

How do I decide?

Some important questions to ask when making decisions about these tests are:

- What information will the test give me?
- How accurate is this test?
- What risks are there for my baby and for me if I have this test?
- What would I do with the information from the test?
- Would I do anything different if the test results are abnormal?
- Would I agree to more tests to find out if something is really wrong with my baby?

It may help you to use the decision-making process on the next page.

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YOUR DECISION-MAKING ACTION PLAN

What are you trying to decide?

Tell your health care provider that you want to share in making decisions. Ask your health care provider to clearly state the decision that needs to be made. Ask your health care provider what the options are.

I am trying to decide about:_____

What do you need to know?

If there are things you do not know about your options or the test itself, get the facts. Use your local library, the Internet, and your health care provider. Ask about the specific birth defects being tested for and what the next steps are if a test is abnormal.

I need to know:_____

What do you think?

Some information is more important than other information for you. You will decide which risk or chance is most important based on your values. Once you think you have all the pros and cons of each choice, sort them out from most to least important. Share the list with your health care provider to make sure that you have not missed anything.

Pros:_____ Cons:_____

_____ _____

Make a Decision

After you have thought it over for a while, you might want to talk with your health care provider again to see if what you know about these tests is right. Talking with your partner or other family members may help. Then, make a decision.

I have decided to:_____

Take Action

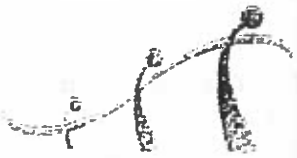
Once you have made your decision, go forward and feel confident that you have made the best decision for you and your baby. You will have to make more decisions along the way. Learn as much as you can about your choices, and make decisions based on what you believe is best for you and your baby.

For More Information

Mayo Clinic
http://www.mayoclinic.com/health/prenatal-genetic-screening/MY01966
This Web site explains some of the prenatal genetic tests and lists questions to consider that help guide your decision making.

March of Dimes
http://www.marchofdimes.com/pnhec/159_519.asp
The March of Dimes Web site describes all the prenatal tests. The timing, meaning of results, and risks of each test are listed.

Exercise in Pregnancy



Is it safe for me to exercise while I'm pregnant?

Most exercise is safe for pregnant women. In fact, daily exercise during your pregnancy can help you and your baby be healthier and might decrease your chance of having some problems during pregnancy. If you had a medical problem before you became pregnant or have had complications during your pregnancy, you should talk about the safety of exercise with your health care provider before you start any activity.

How can exercising while I'm pregnant help me?

Exercise in pregnancy can help you in many ways. It can help you feel better and have less back pain, constipation, and tiredness. Exercise can also help you sleep better and improve your mood. Your body will be better prepared for labor. You may have a shorter labor with less chance of having a cesarean birth. You will gain less weight in pregnancy, which will help you get back to your prepregnancy weight more quickly after the baby comes. Exercise in pregnancy may also lower your chance of getting gestational diabetes or high blood pressure during pregnancy. Your baby is more likely to be born with a healthy birth weight. Exercise can also lower the chance of having postpartum depression.

How much exercise should I do while I'm pregnant?

You should try to do moderate exercise for at least 30 minutes most days of the week. Moderate exercise means you should start to sweat and your heart rate increases a bit, but you are still able to talk while you are exercising. If you exercised before pregnancy, you can probably continue the same physical activities. If you are not currently exercising, pregnancy is a good time to start. You want to start slow and gradually increase your exercise.

What exercises are safe for me to do while I'm pregnant?

Walking is a good exercise to start with. You will get moving and have less strain on your joints. Swimming, biking, yoga, and low-impact aerobics are also good choices. Light weight training is okay too. Being creative with your exercise will help you stay motivated. Hiking, dancing, and rowing can be fun activities to try. You do not need to pay money for an exercise class or activity. Walking up and down stairs or doing exercises at home are all good, free activities.

Are there other things I should consider when I'm exercising while I'm pregnant?

Be sure to stretch your muscles first and warm up and cool down each time you exercise. Drink water throughout your exercise so you can stay well hydrated. Make sure you do not get too hot, and do not overdo your exercise, especially on a hot day. During pregnancy, your balance changes as the baby grows, so it is important to move carefully and always make sure you are not in danger of falling. Avoid lying flat on your back. You can put a pillow or towel underneath one hip so that you can still participate in exercises that may require this position. Listen to your body for warning signs. See the following list for specific warning signs that tell you to stop your exercise.

What exercises are not recommended while I'm pregnant?

You should not do exercises that put you at risk for getting hit or kicked in the stomach or falling. Do not do exercises that involve contact with other persons or heavy lifting. Exercises to avoid are:

- Hockey
- Soccer
- Basketball
- Skiing
- Gymnastics
- Horseback riding

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- High-intensity racquet sports
- Heavy weight lifting (over 50 pounds)
- Scuba diving
- Exercise at high altitudes

Use common sense. If you are not sure about an exercise, you should talk to your health care provider first.

Are there reasons I should not exercise while I'm pregnant?

You should talk to your health care provider before you exercise if you:

- Have a serious heart or lung disease
- Have high blood pressure before or during pregnancy
- Have premature labor or have had a threatened miscarriage during this pregnancy
- Have cervical incompetence (weakness) or have a cerclage in place
- Have placenta previa (your placenta is low or covering the opening to your cervix)
- Are carrying more than one baby
- Have had or are currently having any vaginal bleeding
- Think your membranes are ruptured (water is broken)

When should I stop my exercise?

Stop exercising if you:

- Have bleeding or are leaking fluid from your vagina
- Have trouble breathing
- Feel dizzy or lightheaded
- Have pain in your chest
- Have pain or swelling in your calf
- Have contractions before you are 37 weeks pregnant
- Are feeling the baby move less than normal

For More Information

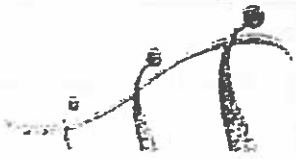
Kid's Health
General information on exercise in pregnancy.
http://kidshealth.org/parent/nutrition_center/staying_fit/exercising_pregnancy.html#
http://www.cdc.gov/physicalactivity/everyone/guidelines/pregnancy.html

March of Dimes
Video and written information on exercise in pregnancy.
http://www.marchofdimes.com/pregnancy/exercise-during-pregnancy.aspx#

Mayo Clinic
Exercises you can do at home that strengthen your muscles and get your body ready for labor.
http://www.mayoclinic.org/healthy-living/pregnancy-week-by-week/multimedia/pregnancy-exercises/sls-20076779?s=1

Parents Magazine
Low-impact yoga exercises you can do at home to prepare for labor and stay healthy.
http://www.parents.com/pregnancy/my-body/fitness/prenatal-yoga-workout/#page=18

When Is My Baby Due?



What is a due date?

Your due date is the date in the middle of about 20 days during which your baby is most likely be born. The average pregnancy lasts about 40 weeks. Most women go into labor on their own within 10 days of their due date, up to 10 days before their due date or up to 10 days after their due date. Very few babies are born on their due date. Your due date is just an estimate or good guess. There is no way to know exactly what day your baby will be born.

Why do I need a due date?

The due date tells you when your pregnancy is full term or complete. Being born too early (before 37 weeks of pregnancy) or too late (after 42 weeks of pregnancy) can mean more risk for your baby's health. This makes it important for your health care provider to keep track of when your baby is due. Your due date also helps your provider watch your baby's growth and order testing that can check the health of your baby at specific times during your pregnancy. You can use your due date to know what to expect throughout your pregnancy and to be ready when your baby is born.

How can I calculate my due date?

There are many tools you can use to figure out your due date. You can use online due date calculators, smartphone apps, or counting ahead on a calendar. The next page of this handout lists ways to figure out your due date.

How does my provider decide my due date?

The first due date that your provider tells you is usually based on your last menstrual period and the size of your uterus (womb) at your first visit. The time of conception (when the sperm meets the egg) is usually 2 weeks after your last normal period. Most babies are born about 40 weeks after your last menstrual period. This means time from conception until your due date is about 38 weeks. Most babies grow at the same rate early in pregnancy so the size of your uterus at your first visit can help your provider estimate your due date.

Could my due date change?

The actual date the sperm and egg join is almost never known for sure. Your provider will likely recommend that you have an ultrasound once or twice in the first half of your pregnancy to make sure your due date is correct. The ultrasound can measure the size of your baby and use that information to figure out your due date. Your provider will likely recommend you have an ultrasound during your first trimester if you are not sure of the day your last period started, you had spotting or an abnormal period, you have irregular periods, or your provider's findings on your exam do not match the due date based on your last menstrual period. The due date based on a first trimester ultrasound is usually the most accurate (best guess). The ultrasound due date will be used if there is more than a week or so difference between the due date based on the ultrasound and the due date based on your period.

If you are not sure about your due date being changed, you can ask your provider the following questions to help you learn what due date is the best for you:

- What information about my due date is the best?
- What information is causing my due date to change?
- How will this change affect my care, now or later?

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What if my baby doesn't come on my due date?

Your due date is just an estimate. It is normal for your baby to be born a little earlier or later than your due date. If your baby is born before 38 weeks of pregnancy, she or he may need some additional care. If you do not go into labor on your own by 41 weeks of pregnancy, your provider may discuss your options for having your labor induced and/or do additional testing to make sure your baby is healthy.

Ways to Calculate Your Due Date

	How does it work?	How accurate is it?	What else should I know?
Date of Last Menstrual Period	Using the first day of your last menstrual period, count backward 3 months then forward 1 week.	Accurate within 2 weeks for women who have regular periods about every 28 days and whose last period was normal.	This is not the most accurate method for some women. If you are not sure of the day your last period started, had spotting or an abnormal period, or have irregular periods, an ultrasound may be more accurate.
Date of Conception	Using the date of conception, add 266 days.	Accurate within 1 week or less only if exact day you became pregnant is known, like with infertility treatments.	The exact date of conception is rarely known. Conception may not happen right when you have sex. Sperm can live in the uterus for up to 5 days. Using a known date of sex is not very accurate.
Ultrasound	Ultrasound is used to measure the size of your baby and predict your due date.	Accurate within 1 week or less if done in the first trimester of pregnancy. Accurate within 2 weeks in the second trimester. Accurate within 3 weeks in the third trimester.	Your baby can be measured as early as 5 to 6 weeks after your last menstrual period. Ultrasound is most useful for figuring out your due date when it is done in the first trimester. Later ultrasound is less accurate because babies grow at different rates.
Physical Exam	Findings such as the size of your uterus, presence of a heartbeat, or you feeling your baby's movement help your provider know how many weeks pregnant you are.	Not very accurate.	These findings differ a bit for each woman and can lead to an incorrect due date. These methods may help support a due date, but are not good to decide when the due date should be.

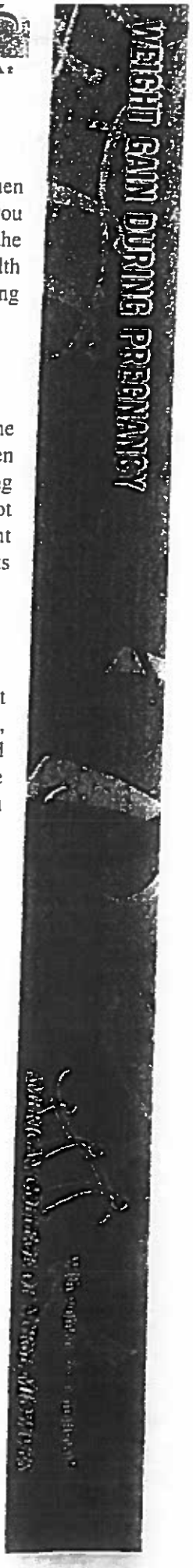
For More Informaiton

March of Dimes
Calculate your due date with a due date calculator.
http://www.marchofdimes.com/pregnancy/calculating-your-due-date.aspx

Kids Health
Information on due dates, trimesters, and what changes you can expect for you and your baby.
http://kidshealth.org/parent/pregnancy_calendar/pregnancy_calendar_intro.html

National Institutes of Health
What to expect when you pass your due date.
http://www.nlm.nih.gov/medlineplus/ency/patientinstructions/000515.htm

Flesch-Kincaid Grade Level: 7.0
Approved September 2014.



WEIGHT GAIN DURING PREGNANCY

How Much Weight Should I Gain During My Pregnancy?

How much weight you should gain depends on how much you weighed before you got pregnant. Women who weigh less need to gain more. Women who weigh more need to gain less. The amount of weight you need to gain ranges from 11 to 40 pounds depending on your prepregnancy weight. The chart on the other side of this page can help you decide how many pounds you should gain. Talk with your health care provider about the right weight gain for you. Then use the chart to track your weight during pregnancy.

I Do Not Feel Hungry. Do I Have to Eat If I Do Not Feel Hungry?

Many women do not feel hungry early in pregnancy. This is because of hormone changes in the body. Later in pregnancy, it may be hard to eat because your stomach has less room between your baby and your lungs. You will feel better all through your pregnancy if you try to eat something every 1 to 2 hours. Eating a big meal may make you feel sick. Eating just a slice of apple, a carrot stick, or a bit of whole wheat bread will help you feel better if your stomach is upset. It is important to remember that what you put in your mouth goes to your baby. If you don't eat, your baby gets nothing to eat.

People Tell Me I'm "Eating for Two." Does This Mean I Have to Eat Twice As Much?

No. Most women only have to add about 200 calories every day to their diet. Many women can eat less and still be very healthy and grow a healthy baby. Your baby depends on you for all of its food, so you do have to eat well. Make healthy changes in your diet—eat at least 5 servings of fruit and vegetables a day, eat whole grain foods such as brown rice or whole wheat bread, include some protein whenever you eat, and cut down on fats. You don't have to eat much more than you normally do.

What Happens If I Do Not Gain Enough Weight?

If you do not gain enough weight, your baby may be too small. Babies that are too small can have problems right after they are born. They may have trouble breathing or eating. Some babies who are too small at birth have trouble learning when they get older and go to school. Talk with your health care provider about how many pounds you should gain to make sure your baby is not too small.

What Happens If I Gain Too Much Weight?

If you gain too much, you will have more weight to lose after the baby is born. Women who gain a lot of extra weight have a higher chance of getting gestational diabetes and needing a cesarean birth.

Should I Gain the Same Amount Every Week?

The baby will gain most of its weight during the last 2 months of your pregnancy. You should try not to gain much weight at first. Plan to gain most of your weight in the last months of your pregnancy.

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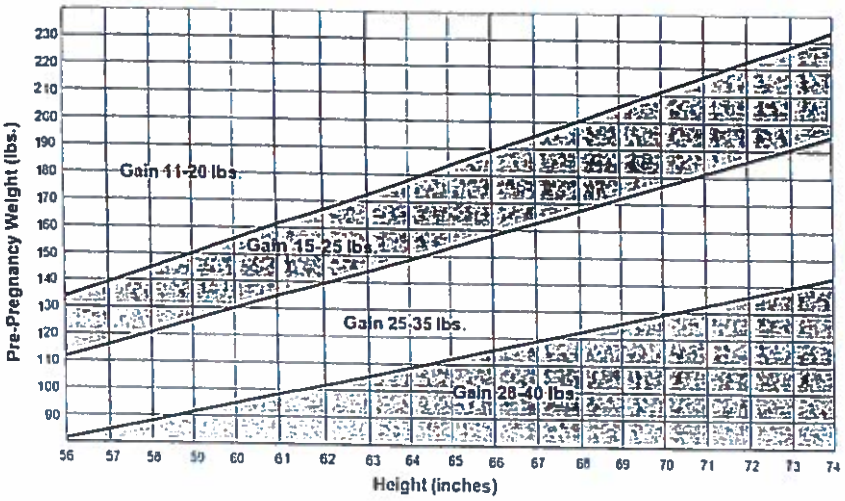
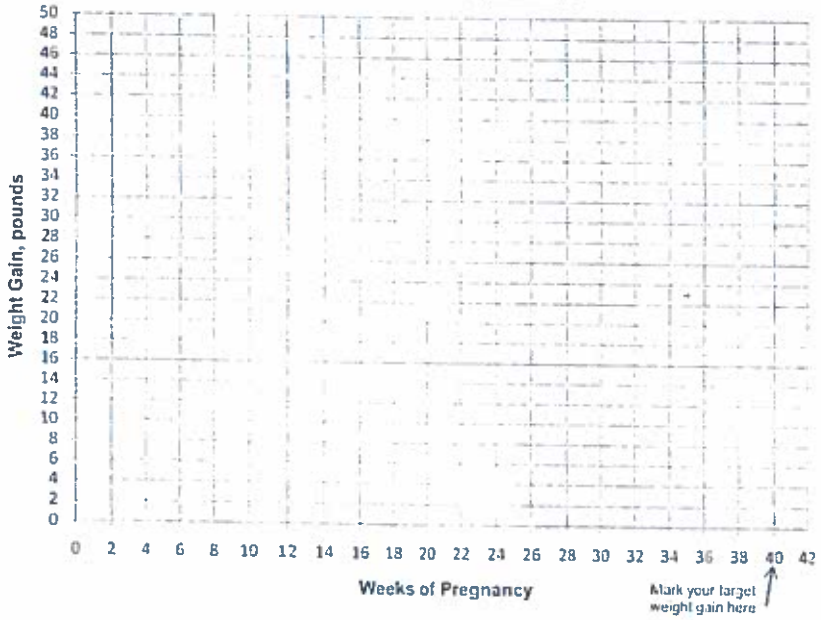


My target weight gain is _____ pounds.



FOR MORE INFORMATION

March of Dimes: Weight Gain During Pregnancy
www.marchofdimes.com/pnhec/159_153.asp

MyPyramid for Pregnancy & Breastfeeding
www.mypyramid.gov/mypyramidmoms/index.html

Fit for Two: Tips for Pregnancy
http://win.niddk.nih.gov/publications/two.htm

OMEGA-3 FATTY ACIDS DURING PREGNANCY

During pregnancy, your baby gets most of his or her food from the foods you eat and vitamins you take. Omega-3 fatty acids (omega-3s) are an important family of building blocks needed during pregnancy and breastfeeding. The two most important omega-3s are DHA and EPA. Our bodies cannot make these fatty acids, so we have to get them from food.

What Are the Benefits of Omega-3s?

Omega-3s are important to health. They can lower blood pressure and reduce heart diseases and other health problems. Omega-3s improve your baby's eye and brain growth and early development. Taking in enough omega-3s can lower your baby's chances of getting asthma and other allergic conditions. They also may lower your risk of giving birth too early, and of having depression after you have your baby (postpartum depression).

Where Are Omega-3s Found?

Only a few foods contain omega-3s. They are mostly found in fatty fish like salmon, sardines, and trout. Some eggs are high in DHA because of the diet fed to the hens. They are sold as high-DHA eggs, and have about 150 mg of DHA per egg. Omega-3s are also now added to certain foods (fortified) like some brands of milk, juice, and yogurt.

Should I Worry About Eating Certain Fish?

Because of mercury contamination of our oceans, rivers, and lakes, almost all fish contain some mercury. Some fish contain too much mercury. Some fish may also have polychlorinated biphenyls (PCBs) and dioxin from industrial pollution. High amounts of mercury and PCBs in your body can cause problems with your baby's brain growth, so fish with high levels of these toxins should not be eaten during pregnancy. Check local advisories on the safety of fish from local waters. Fish advisories are available from your local health department and online from state agencies. The health benefits of eating low-mercury fish during pregnancy outweigh the risks, so DO eat safe fish during pregnancy and while you are breastfeeding your baby.

How Can I Make Sure I Eat Fish Safely?

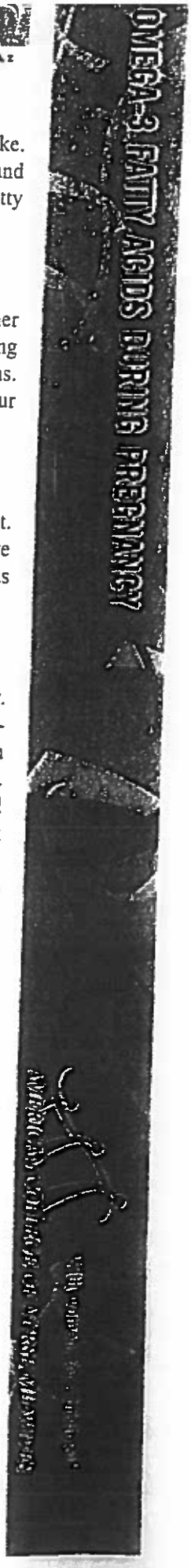
Choose fish that are low in mercury. Remove skin and fat before cooking. Baking, broiling, steaming, or grilling fish lets the fat drain away and reduces PCBs in fish. Do not eat raw fish or shellfish.

How Much Omega-3s Do I Need?

Pregnant women and women who are breastfeeding should get about 200 to 300 mg of omega-3s per day.

How Do I Get Enough Omega-3s?

Because omega-3s stay in the body for a few days, eating two servings of fatty fish per week can give you the 200 to 300 mg per day that you need. One serving is a 6-ounce portion of cooked fish. If you do not eat fish, or do not want to eat it every week, you can get fish oil as a pill or liquid you can swallow. Purified fish oil in pills or liquid form have all PCBs and dioxin removed. Read the label carefully to make sure there are at least 200 mg of omega-3s. Fish oil pills generally do not have side effects, although some women say they have a fishy aftertaste with burping. Cutting down fried and processed foods in your diet will help your body's ability to use the omega-3s you are taking in. Fish liver oils like cod liver oil should be avoided in pregnancy because they can cause dangerous levels of vitamin A in your body.



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What Should I Eat to Get Enough Omega-3s During Pregnancy and Breastfeeding?

Eat up to two 6-ounce servings of omega-3 fish per week, except where indicated. Foods are listed in amounts of omega-3s from highest to lowest. During weeks when you do not eat enough fish, take fish oil supplements. Look for fish oil supplements that are purified because they are the safest.

- **High sources of omega-3s** (about 700 mg or more per serving):
  - Salmon
  - Halibut
  - Rainbow trout
  - Canned light tuna
  - Atlantic or pickled herring
  - Pollock
  - Whitefish
- **Moderate sources of omega-3s** (about 150 to 699 mg per serving):
  - Canned tuna, white albacore (limit to 1 serving per week while you are pregnant or breastfeeding)
  - Catfish
  - Alaskan king crab
  - Halibut
  - Flounder for sole
  - Shrimp
  - Atlantic cod
  - Canned blue crabmeat
  - Omega-3 enriched eggs

What Fish Should I Not Eat During Pregnancy and Breastfeeding?

Do **NOT** eat the following fish while you are pregnant:

- Swordfish
- Tilefish (also called golden bass or golden snapper)
- King mackerel
- Shark
- Tuna steaks (fresh or frozen)
- Marlin
- Spanish mackerel
- Orange roughy
- Raw fish

FOR MORE INFORMATION

March of Dimes
www.marchofdimes.com/pnhec/159_55030.asp

United States Environmental Protection Agency
www.epa.gov/fishadvisories/advice/factsheet.html

United States Food and Drug Administration
www.fda.gov/food/resourcesforyou/consumers/ucm110591.htm

EATING SAFELY DURING PREGNANCY

During pregnancy, you can eat the same things that you normally ate when you were not pregnant. But especially in the first few months of your pregnancy, your baby can be hurt by toxins (poisons) or bacteria (germs). For this reason, you need to be aware of these food dangers and learn how to choose and prepare your food safely.

What Foods Might Be Harmful to My Baby During Pregnancy?

The foods of most concern are certain fish, meat, milk, cheese, and raw foods. Because these are important parts of most diets, you will want to learn to choose the right foods. The chart on the other side of this page will help you with this.

What's the Problem With Fish?

Fish that are large, eat other fish, and live a long time have mercury in them. Too much mercury can cause problems with the development of your baby's brain and nerves. Some fish may also have dioxins and polychlorinated biphenyls (PCBs). Too much of these toxins may cause problems with the development of your baby's brain and may cause cancer.

So Should I Just Stop Eating Fish?

No! Fish is a wonderful food. It has lots of good protein and omega-3 fatty acids (omega-3s). Omega-3s are important to your baby's brain and eye development. You should not eat some types of fish, but should eat two meals of low mercury fish every week to give you the benefits of omega-3s. Raw fish should not be eaten as it may contain parasites (germs) that could harm you or your baby. Fish that are considered safe to eat during pregnancy are listed on the back of this page.

What Meat Is Dangerous?

In the United States, most of our meat is safe to eat. However, meat that has not been kept cold or that has not been prepared properly may have bacteria or parasites. Raw meat may contain toxoplasmosis. Toxoplasmosis is a parasite that can damage your growing baby's eyes, brain, and hearing. The back side of this page has more information.

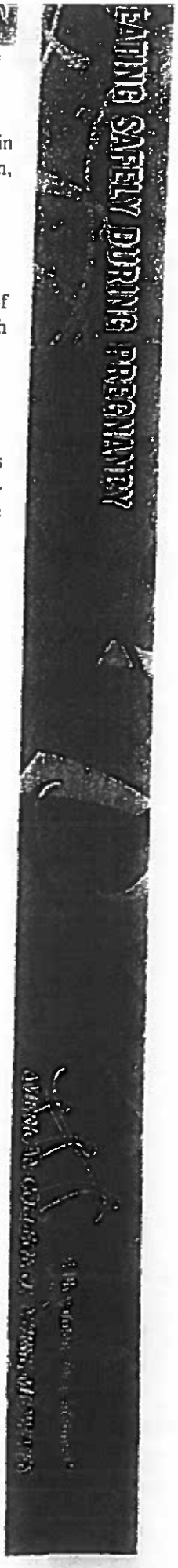
What Do I Need to Know About Milk and Cheese?

Some cheese may contain bacteria called Listeria. These bacteria can cause a disease called listeriosis which may cause miscarriage, stillbirth, or serious health problems for your baby. To avoid listeriosis, you should not eat soft cheeses like Mexican-style queso blanco, queso fresco, feta, Camembert, blue cheeses, or Brie if the cheese is made with unpasteurized milk. Read the label and do not eat the cheese if the label says it is made with raw milk or unpasteurized milk. If it is made with pasteurized milk and kept in the refrigerator at 40°F or less, it is safe to eat. Types of cheeses you can continue to enjoy and which types to avoid are listed on the back of this page.

What Do I Need to Know About Raw Foods?

Uncooked meats and fish may contain toxoplasmosis and listeriosis and other bacteria that can be harmful during pregnancy. Raw fish like that found in sushi, and raw shellfish like clams and oysters should not be eaten during pregnancy. Raw alfalfa and bean sprouts and unpasteurized fruit and vegetable juices have lots of vitamins but can also contain disease-causing bacteria. Pregnant women should drink only pasteurized juices. Raw and undercooked eggs may have bacteria that can cause food poisoning. Do not eat food with raw eggs like Hollandaise sauce and homemade Caesar salad dressing.

1526-9523/536.00 • doi:10.1016/j.jmwh.2010.08.008



How Do I Prepare Food Safely?

- Wash your hands and cooking surfaces often
- Keep raw meat away from fruit and vegetables and cooked meat
- Cook your food until it is steaming hot
- Cook meats until no pink remains
- Keep uneaten food cold or frozen
- Keep your refrigerator at 40°F or less
- Keep your freezer at 0°F or less
- Throw away food that is left at room temperature for 2 hours or more
- Do not eat foods if they are past the expiration date on the label

Eating Safely During Pregnancy

Fresh Fish	
Do not eat	***Shark, swordfish, king mackerel, tilefish, fresh or frozen tuna steaks, orange roughy, or uncooked fish or shellfish***
Eat no more than 1 meal a month	Farmed salmon
Eat up to 1 meal a week	Albacore tuna ("white" tuna)
Eat up to 2 meals a week	Shrimp, canned light tuna, canned or wild salmon, pollock, and catfish, cod, anchovies, or flounder
Note: Check local advisories about the safety of fish caught by family and friends in your local waters. If you cannot get advice on this, eat no more than 1 meal a week from fish caught in local waters and do not eat any other fish that week.	
Note: Cook fish by broiling, baking, steaming, or grilling. Remove skin and fat before cooking. Do not eat the fat that drains from the fish while cooking.	
Deli Meats and Smoked Fish	
Do not eat	***Deli meat spread or pate***
Do not eat unless you reheat to steaming hot	Hot dogs, lunch meat, deli meat (such as turkey, salami, and bologna), or deli smoked seafood
Eat no more than 2 meals a week	Canned smoked fish or meat spread
Meat—Beef, Chicken, and Pork	
Do not eat	***Any meat that is rotten or raw***
Note: Cook all meats all the way through. When you eat meat, you should not see any pink inside the flesh.	
Note: After cutting up raw meat, clean the cutting surface with bleach, soap, and hot water before cutting any raw fruit or vegetables.	
Milk and Cheese	
Do not eat or drink	***Unpasteurized or raw milk, feta cheese, Brie cheese, Camembert cheese, blue-veined cheeses, and Mexican-style queso blanco or queso fresco***
Eat all you want	Hard cheeses, semisoft cheeses like mozzarella, processed cheese slices, cream cheese, cottage cheese, or yogurt made with pasteurized milk
Drink all you want	Skim or 1% pasteurized milk
Raw Foods	
Do not eat or drink	***Raw meat, raw fish, raw shellfish, foods with raw eggs, raw vegetable sprouts, or unpasteurized milk or juices***

FOR MORE INFORMATION

Centers for Disease Control and Prevention
www.cdc.gov/foodsafety or *www.cdc.gov/travel/pregnancy*
Excellent up-to-date information on food safety issues in the United States and abroad.

Partnership for Food Safety Education
www.fightbac.org
The Partnership for Food Safety Education has lots of good information on prevention of illness from the food supply.

Food and Drug Administration
www.fda.gov/Food/FoodSafety/Product-SpecificInformation/Seafood/FoodbornePathogensContaminants/MethylMercury/ucm115662.htm
The Food and Drug Administration published advisories regarding the consumption of fish in March 2004.

FOOD SAFETY for and

Learn the food safety steps that will keep expecting moms safe from foodborne illness.

FOODS TO AVOID WHILE PREGNANT

Foods to Avoid	Here's Why	Foods to Eat
Raw seafood	May contain parasites or bacteria	Fish cooked to 145 °F
Unpasteurized juice, cider and milk	May contain *E. coli* or *Listeria*	Pasteurized versions are safer alternatives.
Soft cheese and cheese made from unpasteurized milk	May contain *E. coli* or *Listeria*	Hard cheese & cheese made with pasteurized milk
Undercooked eggs	May contain *Salmonella*	Eggs with firm yolks
Premade deli salads (egg, pasta, chicken, etc.)	May contain *Listeria*	Make these dishes at home
Raw sprouts	May contain *E. coli* or *Salmonella*	Cook thoroughly
Cold hot dogs and luncheon meats	May contain *Listeria*	Reheat to steaming hot or 165 °F
Undercooked meat and poultry	May contain *E. coli*, *Salmonella*, *Campylobacter*, *Toxoplasma gondii*	Meat and poultry at or above the USDA recommended internal temperature

SAFE INTERNAL COOKING TEMPERATURES

145 °F

- Beef, pork, veal and lamb steaks, roasts and chops with a 3 min rest time
- Fish

160 °F

- Egg dishes
- Ground beef, pork, veal and lamb

165 °F

- Whole, ground, or pieces of chicken, turkey and duck

DANGERS OF LISTERIA AND TOXOPLASMA GONDII

Listeria monocytogenes

Pregnant women are **10 times more likely** to get Listeriosis.

50% of Toxoplasmosis infections in the U.S. are acquired from food.

Toxoplasma gondii

These foodborne illnesses can infect your baby even if you do not feel sick.

Listeriosis can cause:

- Miscarriages
- Premature labor
- Low-birth weight
- Infant death

Toxoplasmosis can cause babies to develop:

- Hearing loss
- Blindness
- Intellectual disability
- Brain or eye problems later in life

REMEMBER

Clean: Wash hands and surfaces often.

Separate: Keep raw meat and poultry separate from ready-to-eat foods.

Cook: Cook foods to the proper internal temperature.

Chill: Get leftovers to the fridge within 2 hours of being cooked.

USDA Ad Council FoodSafety.gov

I

Iron is best absorbed when taken with Vitamin C.

R

Red meat and raisins have 3 times more Iron than chicken.

Cooking in cast iron cookware increases the Iron content of food.

N

Natural food sources of Iron are better for you than supplements.

Why do I need iron?

Everyone needs iron for:

- strong blood to oxygen to the whole body
- preventing cold and flu
- keeping energy levels up
- growing well

What is anemia?

If your blood is low in iron, you have Anemia can make you or your child:

- look pale, feel tired and weak, act cranky
- eat poorly
- not grow well
- get sick more easily, get infections and headaches
- have trouble learning, and do poorly in school or work

If you are pregnant, your baby could be born too soon or too small.

Excellent Sources (>2 mg/serving)	
• Organ meats (beef, chicken or pork)	3 oz.
• Lean Beef	3 oz.
• Enriched Breakfast Cereals	1 oz.
• Kidney Beans	1 cup
• Baked Potato	1 large
• Asparagus, canned	1/2 cup
• Blackstrap Molasses	1 tbsp.
• Oysters, Clams & Scallops	5 small

Good Sources (1-2 mg/serving)	Fair Sources (<mg/serving)
• Egg 1 Large	• Enriched Pasta 1 cup
• Broccoli 1/2 cup	• Whole Grain Enriched Bread 1 slice
• Poultry 3 oz.	• Fig Bars 2 cookies
• Dried Apricots 1/4 cup	• Wheat Germ 1 tbsp.
• Bran Muffin 1 Medium Muffin	• Table Molasses 1 tbsp.
• Enriched Macaroni 1 cup	• Raisins 1/4 cup
• Rolled Oats (dry) or 1/2 cup	• Dates 1/4 cup

Choosing a High Iron Diet

Eat vitamin C foods with iron foods:

Vitamin C helps your body use Iron. Eat a vitamin C food when you eat iron foods, or cook them together. Examples

- Drink a glass of orange juice with your breakfast cereal.
- Cook your beans with some tomatoes
- Have some salsa on your taco
- Give your baby some fruit with her cereal

Some high vitamin C foods are:

Vegetables	Fruits	Juices
Potato	Orange	Orange
Broccoli	Mango	Tomato
Cauliflower	Papaya	Lemon
Cabbage	Grapefruit	Lime
Bell Pepper	Strawberry	All WIC Juices

Easy ways to increase your iron intake

Choose More Often	Choose Less Often
3 oz. lean beef	3 oz. roast chicken
1/2 c. spinach (raw)	1/2 c. lettuce
3 oz. ground beef	3 oz. cod
1 bran muffin	1 blueberry muffin
1/2 c. cooked pasta	1/2 c. cooked rice
1/2 c. green peas	1/2 c. carrots
4 dried apricots	1 apple
3/4 c. bran flakes	3/4 c. corn flakes
1 cup split pea soup	1 cup tomato soup
3 oz. liver	3 oz. roast turkey
1 cup chilli	1 cup macaroni & cheese
CHOOSE	WITH
Grapefruit	whole wheat toast
Chicken	brown rice
Orange Juice	oatmeal
Beef sirloin strips	spinach salad
Kiwi	egg sandwich

- Avoid drinking coffee and tea with your meals as they decrease the amount of iron absorbed.
- Cooking with cast iron pots can increase iron in your food

Advice About Eating Fish

What Pregnant Women & Parents Should Know

Fish and other protein-rich foods have nutrients that can help your child's growth and development.

For women of childbearing age (about 16-49 years old), especially pregnant and breastfeeding women, and for parents and caregivers of young children.

- *Eat 2 to 3 servings of fish a week from the "Best Choices" list OR 1 serving from the "Good Choices" list.*
- *Eat a variety of fish.*
- *Serve 1 to 2 servings of fish a week to children, starting at age 2.*
- *If you eat fish caught by family or friends, check for fish advisories. If there is no advisory, eat only one serving and no other fish that week.**

Use this chart!

You can use this chart to help you choose which fish to eat, and how often to eat them, based on their mercury levels. The "Best Choices" have the lowest levels of mercury.

What is a serving?

To find out, use the palm of your hand!

For an adult
4 ounces

For children, ages 4 to 7
2 ounces

Best Choices EAT 2 TO 3 SERVINGS A WEEK

- Anchovy
- Atlantic croaker
- Atlantic mackerel
- Black sea bass
- Butterfish
- Catfish
- Clam
- Cod
- Crab
- Crawfish
- Flounder
- Haddock
- Hake
- Herring
- Lobster, American and spiny
- Mullet
- Oyster
- Pacific chub mackerel
- Perch, freshwater and ocean
- Pickerel
- Plaice
- Pollock
- Salmon
- Sardine
- Scallop
- Shad
- Shrimp
- Skate
- Smelt
- Sole
- Squid
- Tilapia
- Trout, freshwater
- Tuna, canned light (includes skipjack)
- Whitefish
- Whiting

OR

Good Choices EAT 1 SERVING A WEEK

- Bluefish
- Buffalofish
- Carp
- Chilean sea bass/ Patagonian toothfish
- Grouper
- Halibut
- Mahi mahi/ dolphinfish
- Monkfish
- Rockfish
- Sablefish
- Sheepshead
- Snapper
- Spanish mackerel
- Striped bass (ocean)
- Tilefish (Atlantic Ocean)
- Tuna, albacore/ white tuna, canned and fresh/frozen
- Tuna, yellowfin
- Weakfish/seatrout
- White croaker/ Pacific croaker

Choices to Avoid HIGHEST MERCURY LEVELS

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

*Some fish caught by family and friends, such as larger carp, catfish, trout and perch, are more likely to have fish advisories due to mercury or other contaminants. State advisories will tell you how often you can safely eat those fish.

www.FDA.gov/fishadvice
www.EPA.gov/fishadvice

EPA

FDA U.S. FOOD & DRUG ADMINISTRATION

THIS ADVICE REFERS TO FISH AND SHELLFISH COLLECTIVELY AS "FISH." / ADVICE UPDATED JANUARY 2017

The American College of Obstetricians and Gynecologists
WOMEN'S HEALTH CARE PHYSICIANS

FAQ

FREQUENTLY ASKED QUESTIONS
FAQ179
PREGNANCY

Carrier Screening

What is carrier screening?

Carrier screening is a type of genetic test that can tell you whether you carry a ***gene*** for certain ***genetic disorders***. When it is done before or during pregnancy, it allows you to find out your chances of having a child with a genetic disorder.

What is a carrier?

For some genetic disorders, it takes two genes for a person to have the disorder. A ***carrier*** is a person who has only one gene for a disorder. Carriers usually do not have symptoms or have only mild symptoms. They often do not know that they have a gene for a disorder.

What are the chances of having a child with a genetic disorder?

If both parents are carriers of a recessive gene for a disorder, there is a 25% (1-in-4) chance that their child will get the gene from each parent and will have the disorder. There is a 50% (1-in-2) chance that the child will be a carrier of the disorder—just like the carrier parents. If only one parent is a carrier, there is a 50% (1-in-2) chance that the child will be a carrier of the disorder.

How is carrier screening done?

Carrier screening involves testing a sample of blood, saliva, or tissue from the inside of the cheek. Test results can be negative (you do not have the gene) or positive (you do have the gene). Typically, the partner who is most likely to be a carrier is tested first. If test results show that the first partner is not a carrier, then no additional testing is needed. If test results show that the first partner is a carrier, the other partner is tested. Once you have had a carrier screening test for a specific disorder, you do not need to be tested again for that disorder.

When can carrier screening be done?

Some people decide to have carrier screening before having children. Carrier screening also can be done during pregnancy. Getting tested before pregnancy gives you a greater range of options and more time to make decisions.

Do I have to have carrier screening?

Carrier screening is a voluntary decision. You can choose to have carrier screening or you can choose not to. There is no right or wrong choice.

What carrier screening tests are available?

Carrier screening is available for a limited number of diseases, including ***cystic fibrosis***, ***fragile X syndrome***, ***sickle cell disease***, and ***Tay–Sachs disease***. Some of these disorders occur more often in certain races or ethnic groups. For example, sickle cell disease occurs most frequently in African Americans. Tay–Sachs disease is most common in people of Eastern or Central European Jewish, French Canadian, and Cajun descent. But anyone can have one of these disorders. They are not restricted to these groups.

Who should have carrier screening?

All women who are thinking about becoming pregnant or who are already pregnant are offered carrier screening for cystic fibrosis, ***hemoglobinopathies***, and ***spinal muscular atrophy (SMA)***. You can have screening for additional disorders as well. There are two approaches to carrier screening for additional disorders: 1) targeted screening and 2) expanded carrier screening.

What is targeted carrier screening?

In targeted carrier screening, you are tested for disorders based on your ethnicity or family history. If you belong to an ethnic group or race that has a high rate of carriers for a specific genetic disorder, carrier screening for these disorders may be recommended. This also is called ethnic-based carrier screening. If you have a family history of a specific disorder, screening for that disorder may be recommended, regardless of your race or ethnicity.

What is expanded carrier screening?

In expanded carrier screening, many disorders are screened using a single sample. This type of screening is done without regard to race or ethnicity. Companies that offer expanded carrier screening create their own lists of disorders that they test for. This list is called a screening panel. Some panels test for more than 100 different disorders. Screening panels usually focus on severe disorders that affect a person's quality of life from an early age.

Is one approach better than the other?

Before testing, you and your ***obstetrician–gynecologist (ob-gyn)*** or other health care professional can discuss the benefits and limitations of each carrier screening approach. In some cases, both approaches can be used to tailor screening to your individual situation.

What choices do I have if my partner and I are carriers of a genetic disorder?

If you have carrier screening before you become pregnant, you have several options. You can become pregnant and have prenatal ***diagnostic tests*** to see if the fetus has the disorder. You can choose to use ***in vitro fertilization (IVF)*** with donor ***eggs*** or ***sperm*** to become pregnant. With this option, the ***embryo*** can be tested before it is transferred to the uterus. You also may choose not to become pregnant. If you have carrier screening after you become pregnant, your options are more limited. In either case, a ***genetic counselor***, your ob-gyn, or other health care professional can explain your risks of having a child with the disorder.

How accurate is carrier screening?

No test is perfect. In a small number of cases, test results can be wrong. A negative test result when you have a gene for the disorder tested is called a false-negative result. A positive test result when you do not have a gene for a disorder is called a false-positive result.

Are results of carrier screening confidential?

The Genetic Information Nondiscrimination Act of 2008 (GINA) makes it illegal for most health insurers to require genetic testing results or use results to make decisions about coverage, rates, or preexisting conditions. GINA also makes it illegal for employers to discriminate against employees or applicants because of genetic information. GINA does not apply to life insurance, long-term care insurance, or disability insurance.

If you find out that you are a carrier of a gene for a genetic disorder, you may want to tell other family members. They may be at risk of being carriers themselves. There is no law that states that you have to do so. If you choose to tell family members, your ob-gyn or genetic counselor can advise you about the best way to do this. It cannot be done without your consent.

Glossary

Carrier: A person who shows no signs of a disorder but could pass the gene to his or her children.

Carrier Screening: A test done on a person without signs or symptoms to find out whether he or she carries a gene for a genetic disorder.

Cystic Fibrosis: An inherited disorder that causes problems with breathing and digestion.

Diagnostic Tests: Tests that look for a disease or cause of a disease.

Eggs: The female reproductive cells made in and released from the ovaries. Also called the ova.

Embryo: The stage of development that starts at fertilization (joining of an egg and sperm) and lasts up to 8 weeks.

Fragile X Syndrome: A genetic disease of the X chromosome that is the most common inherited cause of mental disability.

Gene: A segment of DNA that contains instructions for the development of a person's physical traits and control of the processes in the body. The gene is the basic unit of heredity and can be passed from parent to child.

Genetic Counselor: A health care professional with special training in genetics who can provide expert advice about genetic disorders and prenatal testing.

Genetic Disorders: Disorders caused by a change in genes or chromosomes.

Hemoglobinopathies: Any inherited disorder that affects the number or shape of red blood cells in the body. Examples include sickle cell disease and the different forms of thalassemia.

In Vitro Fertilization (IVF): A procedure in which an egg is removed from a woman's ovary, fertilized in a laboratory with the man's sperm, and then transferred to the woman's uterus to achieve a pregnancy.

Obstetrician–Gynecologist (Ob-Gyn): A doctor with special training and education in women's health.

Sickle Cell Disease: An inherited disorder in which red blood cells have a crescent shape, which causes chronic anemia and episodes of pain. The disease occurs most often in African Americans.

Sperm: A cell made in the male testes that can fertilize a female egg.

Spinal Muscular Atrophy (SMA): An inherited disorder that causes wasting of the muscles and severe weakness. SMA is the leading genetic cause of death in infants.

Tay–Sachs Disease: An inherited disorder that causes mental disability, blindness, seizures, and death, usually by age 5. It most commonly affects people of Eastern or Central European Jewish backgrounds, as well as people of French Canadian and Cajun backgrounds.

If you have further questions, contact your obstetrician–gynecologist.

The American College of Obstetricians and Gynecologists
WOMEN'S HEALTH CARE PHYSICIANS

FAQ

FREQUENTLY ASKED QUESTIONS
FAQ165
PREGNANCY

Prenatal Genetic Screening Tests

What is prenatal genetic testing?

Prenatal genetic testing gives parents-to-be information about whether their ***fetus*** has certain ***genetic disorders***.

What are genetic disorders?

Genetic disorders are caused by changes in a person's ***genes*** or ***chromosomes***. ***Aneuploidy*** is a condition in which there are missing or extra chromosomes. In a ***trisomy***, there is an extra chromosome. In a ***monosomy***, a chromosome is missing. ***Inherited disorders*** are caused by changes in genes called ***mutations***. Inherited disorders include ***sickle cell disease***, ***cystic fibrosis***, ***Tay–Sachs disease***, and many others. In most cases, both parents must carry the same gene to have an affected child.

What are the two main types of prenatal genetic tests?

There are two general types of prenatal tests for genetic disorders:

1. Prenatal ***screening tests***. These tests can tell you the chances that your ***fetus*** has an aneuploidy and a few additional disorders. This FAQ focuses on these tests.
2. Prenatal ***diagnostic tests***. These tests can tell you whether your fetus actually has certain disorders. These tests are done on ***cells*** from the fetus or ***placenta*** obtained through ***amniocentesis*** or ***chorionic villus sampling (CVS)***. FAQ164 Prenatal Genetic Diagnostic Tests focuses on these tests.

Both screening and diagnostic testing are offered to all pregnant women.

What are the different types of prenatal genetic screening tests?

Screening tests can tell you your risk of having a baby with certain disorders. They include ***carrier screening*** and prenatal genetic screening tests:

- Carrier screening is done on parents (or those just thinking about becoming parents) using a blood sample or tissue sample swabbed from inside the cheek. These tests are used to find out whether a person carries a gene for certain inherited disorders. Carrier screening can be done before or during pregnancy.

- Prenatal genetic screening tests of the pregnant woman's blood and findings from ***ultrasound exams*** can screen the fetus for aneuploidy; defects of the brain and spine called ***neural tube defects***; and some defects of the abdomen, heart, and facial features. This FAQ focuses on these tests. They include first-***trimester*** screening, second-trimester screening, combined first- and second-trimester screening, and cell-free ***DNA*** testing.

What is first-trimester screening?

First-trimester screening includes a test of the pregnant woman's blood and an ultrasound exam. Both tests usually are performed together and are done between 10 weeks and 13 weeks of pregnancy:

- The blood test measures the level of two substances.
- The ultrasound exam, called a ***nuchal translucency screening***, measures the thickness of a space at the back of the fetus's neck. An abnormal measurement means there is an increased risk that the fetus has ***Down syndrome*** or another type of aneuploidy. It also is linked to physical defects of the heart, abdominal wall, and skeleton.

What is second-trimester screening?

Second-trimester screening includes the following tests:

- The "quad" or "quadruple" blood test measures the levels of four different substances in your blood. The quad test screens for Down syndrome, ***trisomy 18***, and neural tube defects. It is done between 15 weeks and 22 weeks of pregnancy.
- An ultrasound exam done between 18 weeks and 20 weeks of pregnancy checks for major physical defects in the brain and spine, facial features, abdomen, heart, and limbs.

What is combined first- and second-trimester screening?

The results from first- and second-trimester tests can be combined in various ways. Combined test results are more accurate than a single test result. If you choose combined screening, keep in mind that final results often are not available until the second trimester.

What is cell-free DNA testing?

Cell-free DNA is the small amount of DNA that is released from the placenta into a pregnant woman's bloodstream. The cell-free DNA in a sample of a woman's blood can be screened for Down syndrome, ***trisomy 13***, trisomy 18, and problems with the number of ***sex chromosomes***. This test can be done starting at 10 weeks of pregnancy. It takes about 1 week to get the results. A positive cell-free DNA test result should be followed by a diagnostic test with amniocentesis or CVS.

The cell-free DNA screening test works best for women who already have an increased risk of having a baby with a chromosome disorder. For a woman at low risk of having a baby with a chromosome disorder, conventional screening remains the most appropriate choice. Cell-free DNA testing is not recommended for a woman carrying more than one fetus.

What do the different results of prenatal screening tests mean?

Results of blood screening tests for aneuploidy are reported as the level of risk that the disorder might be present.

- A positive screening test result for aneuploidy means that your fetus is at higher risk of having the disorder compared with the general population. It does not mean that your fetus definitely has the disorder.
- A negative result means that your fetus is at lower risk of having the disorder compared with the general population. It does not rule out the possibility that your fetus has the disorder.

Diagnostic testing with CVS or amniocentesis that gives a more definite result is an option for all pregnant women. Your ***obstetrician*** or other health care professional, such as a ***genetic counselor***, will discuss what your screening test results mean and help you decide the next steps.

How accurate are prenatal genetic screening tests?

With any type of testing, there is a possibility of false-positive results and false-negative results. A screening test result that shows there is a problem when one does not exist is called a false-positive result. A screening test result that shows there is not a problem when one does exist is called a false-negative result. Your health care professional can give you information about the rates of false-positive and false-negative results for each test.

What should I consider when deciding whether to have prenatal genetic testing?

It is your choice whether to have prenatal testing. Your personal beliefs and values are important factors in the decision about prenatal testing.

It can be helpful to think about how you would use the results of prenatal screening tests in your pregnancy care. Remember that a positive screening test tells you only that you are at higher risk of having a baby with Down syndrome or another aneuploidy. A diagnostic test should be done if you want to know a more certain result. Some parents want to know beforehand that their baby will be born with a genetic disorder. This knowledge gives parents time to learn about the disorder and plan for the medical care that the child may need. Some parents may decide to end the pregnancy in certain situations.

Other parents do not want to know this information before the child is born. In this case, you may decide not to have follow-up diagnostic testing if a screening test result is positive. Or you may decide not to have any testing at all. There is no right or wrong answer.

Glossary

Amniocentesis: A procedure in which a needle is used to withdraw and test a small amount of amniotic fluid and cells from the sac surrounding the fetus.

Aneuploidy: Having an abnormal number of chromosomes.

Carrier Screening: A test done on a person without signs or symptoms to find out whether he or she carries a gene for a genetic disorder.

Cell: The smallest unit of a structure in the body; the building blocks for all parts of the body.

Chorionic Villus Sampling (CVS): A procedure in which a small sample of cells is taken from the placenta and tested.

Chromosomes: Structures that are located inside each cell in the body and contain the genes that determine a person's physical makeup.

Cystic Fibrosis: An inherited disorder that causes problems in digestion and breathing.

Diagnostic Tests: Tests that look for a disease or cause of a disease.

DNA: The genetic material that is passed down from parents to offspring. DNA is packaged in structures called chromosomes.

Down Syndrome: A genetic disorder that causes abnormal features of the face and body, medical problems such as heart defects, and intellectual disability. Most cases of Down syndrome are caused by an extra chromosome 21 (trisomy 21). Many children with Down syndrome live to adulthood.

Fetus: The stage of prenatal development that starts 8 weeks after fertilization and lasts until the end of pregnancy.

Genes: Segments of DNA that contain instructions for the development of a person's physical traits and control of the processes in the body. It is the basic unit of heredity and can be passed down from parent to offspring.

Genetic Counselor: A health care professional with special training in genetics and counseling who can provide expert advice about genetic disorders and prenatal testing.

Genetic Disorders: Disorders caused by a change in genes or chromosomes.

Inherited Disorders: Disorders caused by a change in a gene that can be passed down from parent to children.

Monosomy: A condition in which there is a missing chromosome.

Mutations: Permanent changes in genes that can be passed on from parent to child.

Neural Tube Defects: Birth defects that result from incomplete development of the brain, spinal cord, or their coverings.

Nuchal Translucency Screening: A test in which the size of a collection of fluid at the back of the fetal neck is measured by ultrasound to screen for certain birth defects, such as Down syndrome, trisomy 18, or heart defects.

Obstetrician: A physician who specializes in caring for women during pregnancy, labor, and the postpartum period.

Placenta: Tissue that provides nourishment to and takes waste away from the fetus.

Screening Tests: Tests that look for possible signs of disease in people who do not have symptoms.

Sex Chromosomes: The chromosomes that determine a person's sex. In humans, there are two sex chromosomes, X and Y. Females have two X chromosomes and males have an X and a Y chromosome.

Sickle Cell Disease: An inherited disorder in which red blood cells have a crescent shape, causing chronic anemia and episodes of pain. It occurs most often in African Americans.

Tay–Sachs Disease: An inherited birth defect that causes intellectual disability, blindness, seizures, and death, usually by age 5 years. It most commonly affects people of Eastern and Central European Jewish, Cajun, and French Canadian descent, but it can occur in anyone.

Trimester: One of the three 3-month periods into which pregnancy is divided.

Trisomy: A condition in which there is an extra chromosome.

Trisomy 13 (Patau Syndrome): A chromosomal disorder that causes serious problems with the brain and heart as well as extra fingers and toes, cleft palate and lip, and other defects. Most infants with trisomy 13 die within the first year of life.

Trisomy 18 (Edwards Syndrome): A chromosomal disorder that causes severe intellectual disability and serious physical problems such as a small head, heart defects, and deafness. Most of those affected with trisomy 18 die before birth or within the first month of life.

Ultrasound Exams: Tests in which sound waves are used to examine internal structures. During pregnancy, they can be used to examine the fetus.

If you have further questions, contact your obstetrician–gynecologist.

The American College of Obstetricians and Gynecologists
WOMEN'S HEALTH CARE PHYSICIANS

Cell-Free DNA Prenatal Screening Test

How the Test Is Done

What is it?

The cell-free DNA prenatal screening test screens for certain conditions caused by an abnormal number of chromosomes. It does not test for all types of chromosomal disorders.

When can it be done?

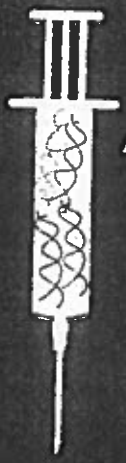
A cell-free DNA test can be done as early as 10 weeks of pregnancy and up until delivery.

How is it done?

Some of the genetic material (DNA) from the pregnancy circulates in the pregnant woman's blood. The cell-free DNA test is done on a sample of her blood.

Screening tests are used to estimate whether your fetus is at higher risk or lower risk of having a certain condition.

Diagnostic tests can give a definite answer about whether the fetus has a certain condition. These tests include amniocentesis or chorionic villus sampling (CVS).



A blood sample is taken from the pregnant woman that contains her DNA and DNA from the pregnancy.

The sample is analyzed in a laboratory to check for an abnormal amount of DNA from chromosomes 21, 18, and 13.

= woman's DNA

= DNA from the pregnancy

Major conditions screened for:

- Trisomy* 21 (Down syndrome)
- Trisomy 18
- Trisomy 13

Conditions not screened for:

- Problems that are screened for by ultrasound, such as neural tube defects, heart defects, and abdominal wall defects
- Many other chromosomal and genetic disorders

*Trisomy means that there are three copies of a particular chromosome instead of the normal two copies. For instance, trisomy 21 means that there are three copies of chromosome 21.

PFS1008: This information was designed as an educational aid to patients and sets forth current information and opinions related to women's health. It is not intended as a statement of the standard of care, nor does it comprise all proper treatments or methods of care. It is not a substitute for a treating clinician's independent professional judgment. Please check for updates at www.acog.org to ensure accuracy.

National Society of Genetic Counselors

OVER THE-COUNTER MEDICINES IN PREGNANCY

Most medications today include the warning "if you are pregnant or nursing a baby, consult your healthcare provider." However, many over-the-counter medicines have been used for many years during pregnancy. The following products have not shown evidence of harm.

Fever / Headache / Body ache: Acetaminophen (brand name Tylenol), regular or extra-strength
You should NOT use aspirin or ibuprofen on a regular basis unless directed by a health-care provider

Respiratory Infection: Cough syrup containing dextromethorphan (brand name Robitussin DM)
Saline nose drops, Flonase
Zinc lozenges (use as soon as symptoms start; allow to dissolve in mouth every 2hr x 2-3 days)
Cough drops or anesthetic throat sprays or gargles
Antihistamine like Claritin, Allegra, Benadryl or Theraflu
Chest rubs or breathing steam (see other side for some good tips)
Supplements: Echinacea, but NO goldenseal; Vitamin C (max 1000mg/day), Emergen-C
Airborne, but only a double dose of children's product (adult product has too much vitamin A)
Homeopathic Oscillococcinum for flu symptoms of body aches and fever
Pseudoephedrine (Sudafed) – Use ONLY in 2nd-3rd trimesters; however, phenylephrine (Sudafed PE) is safe in any trimester

Indigestion: Tums or Rolaids ; also serve as a calcium supplement
Mylanta or Maalox (excessive use can cause diarrhea)
Zantac or Pepcid
Papaya enzyme or fresh papaya
Peppermint or Chamomile Tea

Constipation: Metamucil or other psyllium product
Citrucel, Fibercon or other bulking agent
Prune juice or stewed prunes (also a great iron source)
½ cup Fiber One or All-Bran cereal every day
At least two quarts of water every day
Colace (stool softener)

Nausea/Vomiting: Vitamin B6 50mg 1-3/day; this can be taken with 1/3-1/2 tab Unisom (this antihistamine, doxylamine succinate, has anti-nausea properties but may make you sleepy, so try it first at night or on a weekend.)
Ginger tea, ginger ale, ginger capsules, or a very thin slice of ginger under the tongue
Peppermint Oil aromatherapy
Sea Bands (wear over acupressure points on wrists all day) or acupuncture
Emetrol or flat coke
1 teaspoon apple cider vinegar in 1 cup of water; sip throughout the day
Homeopathic ipecac 30x

Diarrhea: Kaopectate or Imodium
Pepto-Bismol may be used only in the first 20 weeks; do not exceed recommended doses
BRAT diet (bananas, white rice, applesauce, black tea); avoid dairy for at least 24 hrs
Pedialyte or Gatorade

Hemorrhoids: Preparation H or Anusol cream or suppositories
Tucks pads or cold witch hazel compresses
proctofoam (rec'd) 3-4x day 7 day

Yeast Infection: Monistat, Gyne-Lotrimin, etc. are safe. Seven-day treatments work best in pregnant women.

Anemia: Please start one of these supplements daily at 20 wk unless otherwise directed!
Floradix (imported herbal liquid bought in health food store); easy on digestion, but most expensive and must be refrigerated
Ferro-Sequels (contains stool softener)
Slo-Fe (time-release iron)

Omega-3 Supplement: 300-500 mg/day mercury-free fish oil such as Nordic Naturals or Carlsens, may be useful in fetal brain development.

March 2011