

Quick Facts

- Fetal growth restriction (FGR) is a condition in which the fetus is smaller than expected for the gestational age. FGR can lead to health problems for the baby.
- Not all fetuses who are smaller than expected have FGR. Some are just small and do not have any health problems.
- FGR can be caused by certain problems with the mother's health, problems with the fetus, or problems with the placenta.
- When FGR is first diagnosed, you may have tests to find the cause of the growth problem, particularly if it is early in pregnancy. In the third trimester, fetal testing can also be used to check the fetus's well-being and decide the best time to deliver.
- If test results show that the fetus is not doing well, early delivery may be recommended.

Fetal growth restriction (FGR) is a condition in which the fetus is smaller than expected for the gestational age. Out of 10 fetuses at the same gestational age, a growth-restricted fetus weighs less than 9 of them.

Some babies diagnosed with FGR are just small. They are completely healthy apart from their small size. In other cases, especially when growth restriction is severe, babies may be born with health problems that need treatment. The baby may need to be delivered early and stay in the hospital. FGR is usually associated with a maternal health condition, a genetic disorder in the fetus, or a problem with the placenta.

Once FGR is diagnosed, monitoring is done to check fetal well-being and decide on the best time to deliver the baby. Although there is no treatment for FGR, it can be managed to reduce the risks of complications.

What causes FGR?

FGR can be caused by certain problems with the mother's health, problems with the fetus, or problems with the **placenta**. The following health conditions in the mother increase the risk of FGR:

- Preexisting **diabetes**, heart disease, kidney disease, or **lupus**
- High blood pressure that occurs during pregnancy
- Smoking, using illegal drugs, or drinking alcohol
- Infections
- Taking medications or being exposed to certain harmful chemicals

Fetal health conditions that can cause FGR include the following:

- A genetic condition, such as an abnormal number of **chromosomes** (a condition known as **aneuploidy**)
- A problem that affects a body structure, like the heart or the digestive tract
- Fetal infection

A problem with the placenta is the most common cause of FGR. If the placenta is not working well, the fetus may not get enough nutrients to grow normally.

Being pregnant with more than one baby is also a common cause of FGR. The odds of twins being born too small are as high as 1 in 5. For triplets, the odds are 3 in 5.

What are some of the health problems that can occur in newborns with FGR?

Babies with severe FGR have an increased risk of breathing problems, low blood sugar, and problems staying warm. They may need special care in the **neonatal intensive care unit**. In very serious cases, there is an increased risk of **stillbirth** or the baby dying after birth.

How is FGR diagnosed?

Your healthcare provider will check how your fetus is growing during your regular prenatal care visits. Two ways are used to estimate fetal growth:

- **Fundal height:** In the second half of pregnancy, your healthcare professional will measure your abdomen from the pubic bone to the top of the uterus (the fundus). This measurement is called the fundal height. Your fundal height in centimeters should be about the same as the number of weeks of pregnancy. For example, at 24 weeks of pregnancy, your fundal height should be around 24 centimeters. Fundal height measurement may

not work as well in people who are obese or who are pregnant with more than 1 baby.

- **Ultrasound exam:** Certain parts of the fetus are measured during an ultrasound exam, such as how big around the head and abdomen are and the length of the thigh bone. These measurements are used along with gestational age to estimate the fetal weight.

Gestational age: Why it's important

Assessing the growth of the fetus depends on knowing the correct **gestational age**. During your first prenatal visit, your healthcare professional will estimate when your baby will likely be born. This estimated due date (EDD) can be obtained by adding 280 days to the date of the first day of your last menstrual period (LMP). The EDD will be most accurate for those with regular, 28 to 30-day menstrual cycles. Another way to establish the gestational age is with an ultrasound exam in the first trimester. During this exam, measurements of the fetus are used to confirm or revise the gestational age.

What does not cause FGR?

FGR is not caused by working too much, anxiety, or a vegetarian diet. Eating a balanced diet, exercising, and avoiding smoking and illegal drugs can help the fetus grow well. If you do have an underlying health condition (such as diabetes or high blood pressure), following your treatment plan to keep it under control can also help. In most cases, FGR isn't related to anything you've done or haven't done.

Can the size of my baby bump tell whether I have FGR?

It's actually hard to diagnose FGR just by looking at someone. But if you're concerned about your size, tell your healthcare provider.

Can FGR be treated?

There is no treatment for FGR, but it can be managed to reduce the chance of complications. Sometimes, this means delivering the fetus earlier than the due date by **labor induction** or possibly by **cesarean delivery**. Early delivery is recommended when continuing the pregnancy might increase the risk of further complications.

When FGR is first diagnosed, you may have tests to find the cause of the growth problem, particularly if it is early in pregnancy. In the third trimester, fetal testing may also be used to check the fetus's well-being and decide the best time to deliver. The following tests may be offered to manage and monitor FGR depending on the time in your pregnancy when FGR is diagnosed:

- **Detailed ultrasound exam:** This ultrasound exam looks at the fetus's body in detail to see if there are any physical abnormalities. The amount of **amniotic fluid** is also measured.
- **Genetic testing with amniocentesis:** This test is offered if there is a concern that a chromosomal disorder may be present.
- **Electronic fetal heart rate monitoring:** This test involves putting monitors on your abdomen to assess the fetal heart rate and contractions over time. Changes in the fetal heart rate can tell your care providers if the placenta is working as expected. It may be performed weekly or more often if necessary.
- **Biophysical profile and Doppler ultrasound:** In a biophysical profile, ultrasound is used to help measure the baby's movements, breathing, muscle tone, and amount of amniotic fluid. A Doppler ultrasound shows blood flow through an artery in the **umbilical cord**, which helps assess how the placenta is working.

Is bed rest recommended to treat FGR?

No. Bed rest should not be used to treat FGR. It has not been shown to improve outcomes. In fact, bed rest

can cause harm by increasing the risk of bone loss, muscle loss, and blood clots.

How are the results of fetal testing used to make delivery decisions?

The goal of monitoring is to help you and your health-care professional decide the best time to deliver the baby. If test results show that the fetus is not doing well, early delivery may be recommended. If delivery is before term, there can be another set of problems related to prematurity.

Deciding the right time for delivery involves balancing the risks of being born too early versus the risks of staying in the uterus.

These decisions can be difficult. You and your health-care professional will make the decision together after discussing the fetus's condition and the risks and benefits of waiting to deliver versus early delivery.

What do experts say about when a fetus with FGR should be delivered?

Delivery decisions are based on the cause of the FGR (if known), gestational age, and results of tests for fetal well-being. Here are the current guidelines, presuming that you do not have **preeclampsia** or other issues with your health:

- 38 to 39 weeks if testing shows the fetus is doing well.
- By or before 37 weeks if test results show an increased risk of complications. The higher the risks of complications, the earlier delivery may be recommended.

If delivery before 34 weeks is likely, or if you are between 34 and 37 weeks and there is a chance that you may deliver in the next 7 days, you may be given medications called **corticosteroids**. Corticosteroids help the fetus's lungs and other organs mature and may improve the outcome if your baby is born preterm.

Glossary

Amniocentesis: A procedure in which a sample of amniotic fluid is removed from the uterus during pregnancy and tested to look for genetic problems in the fetus.

Amniotic fluid: The fluid in the sac that surrounds the fetus during pregnancy.

Aneuploidy: A genetic disorder in which there are missing or extra chromosomes.

Biophysical profile: A prenatal test that checks the fetal heart rate, movement, muscle tone, breathing, and the amount of amniotic fluid.

Cesarean delivery: Surgery in which a baby is delivered through a cut (incision) in the mother's uterus.

Chromosomes: The structures inside cells that carry genes, the pieces of hereditary material passed down from parents to offspring.

Corticosteroids: Medication that can help a fetus's lungs and other organs mature, usually given if a preterm delivery is anticipated within the next 7 days.

Diabetes: A condition in which a person's blood sugar is too high. It can be caused by a lack of insulin, a chemical in the body that helps move sugar from the bloodstream into cells. It also can be caused when cells do not respond properly to insulin.

Doppler ultrasound: A special type of ultrasound exam that measures blood flow through a blood vessel.

Electronic fetal heart rate monitoring: A procedure that assesses the rate and rhythm of the fetal heartbeat. A belt with sensors is placed around a pregnant person's abdomen, and these sensors continuously record the fetal heartbeat.

Fetal growth restriction: A condition in which a fetus is measuring much smaller than expected for the gestational age.

Fundal height: A measurement of the pregnant abdomen taken from the top of the pubic bone to the top of the uterus. It is one method to help track the growth of the fetus after about 24 weeks of pregnancy.

Gestational age: The age of a pregnancy, usually given in weeks. A pregnancy is often dated from the first day of the last menstrual period. A standard length of pregnancy is 40 weeks.

Labor induction: The process of starting your labor (by the use of drugs or other means such as breaking your water), as opposed to labor starting on its own.

Lupus: A long-lasting autoimmune disease in which the immune system attacks the body's own tissues and organs. People with lupus typically have times when their symptoms flare up, followed by times with no symptoms. The full name of the disease is "systemic lupus erythematosus."

Neonatal intensive care unit: A special unit in the hospital that cares for sick newborns.

Placenta: A special organ that develops during pregnancy. It allows the transfer of nutrients, antibodies, and oxygen to the fetus. It also makes hormones that sustain the pregnancy

Preeclampsia: A disorder that can occur during pregnancy in which the blood pressure goes too high. It can damage many organs in the body, including the kidneys, brain, and liver.

Stillbirth: Death of a fetus prior to delivery.

Ultrasound: Use of sound waves to create images of internal organs or the fetus during pregnancy.

Umbilical cord: The cord that links the growing fetus to the placenta; it contains blood vessels that bring oxygen and nutrients to the fetus and removes waste products.

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