



# Chorionic Villus Sampling

## What is chorionic villus sampling?

Chorionic villus sampling is a test mainly used to learn about the chromosomes of a developing baby. It is often called “CVS.” This test is usually scheduled between 10 and 13 weeks of pregnancy. CVS is done by taking a sample of the developing placenta (chorionic villi), and testing it for chromosome conditions.

Chromosomes are the packages of genetic information that we inherit from our parents and pass on to our children. Many chromosome conditions, such as Down syndrome, cause intellectual disability and birth defects. Although it is possible for a woman of any age to have a baby with a chromosome condition, the chance increases as she gets older.

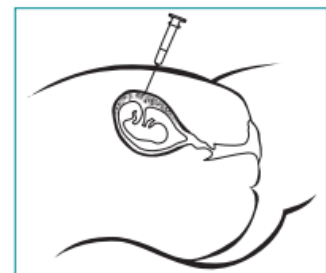
CVS can find chromosome conditions before birth. In some pregnancies, CVS may also include genetic testing to look at a developing baby’s DNA code. This type of testing is only done when the baby is at risk for a specific genetic condition. However, CVS does not test for all birth defects or all causes of intellectual disability

## How is it done?

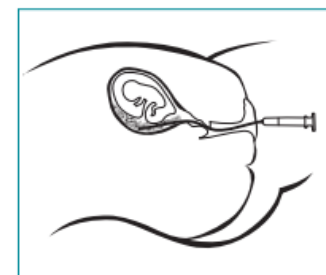
You need a full bladder for the test, so we will ask you to drink water before your appointment. The test begins with an ultrasound exam. Ultrasound uses sound waves directed at the developing baby to show a picture or “image” on a video screen. The ultrasound will measure the size of the baby, and will also locate the placenta.

A trained doctor performs the CVS test. This test takes a tiny sample of the placenta and can be done in two different ways. The doctor decides which method is best based on the location of the placenta. Ultrasound is used to guide the doctor during the whole test. You may feel some discomfort during the test. CVS does not touch the developing baby.

- **Transabdominal CVS** - A needle is put through your abdominal wall (lower belly) and into the placenta. A small bit of the placental tissue is removed.
- **Transcervical CVS** - A thin, flexible tube (catheter) is put into your vagina. The tube is then passed through the cervix (the lower part of the uterus) and into the placenta. A small bit of the placental tissue is removed.



TRANSABDOMINAL CVS



TRANSCERVICAL CVS

The placenta sample is sent to the laboratory in a labeled test tube. Cells from the placenta have the same chromosomes as the baby and are processed at the lab. The chromosomes from the sample can be studied after about 10 to 14 days. Results are available about 2 weeks after the CVS test.

A CVS appointment lasts less than an hour, but the procedure itself takes only a few minutes. Most of the appointment is spent looking at the baby with ultrasound and preparing for the CVS.

### Is CVS safe?

In every pregnancy, there is a risk for a problem such as a miscarriage, or loss of the pregnancy. CVS, although considered safe, adds a small additional risk for a problem that could lead to miscarriage. The added risk for miscarriage after CVS is 1 in 500 or less.

After the test, you are given information about what to expect. We recommend that you do not do any heavy lifting, exercise, or have sexual intercourse for 24 hours after your CVS. With a transabdominal CVS, mild cramping and tenderness at the needle site are common and not a cause for concern. You may also experience light bleeding or spotting after the procedure. If you experience painful cramping, heavy bleeding, fluid leaking from the vagina, or fever you should call your doctor, nurse practitioner or nurse midwife right away. These symptoms are uncommon.

### Are the results accurate?

CVS detects pregnancies with extra or missing chromosomes with high accuracy. This includes Down syndrome, which is caused by an extra chromosome #21 in all of the cells. Testing can also find less common chromosome conditions with extra or missing pieces of chromosomes. However, there are some chromosome conditions that cannot be found with CVS.

Sometimes, CVS results are difficult to interpret. In a small percentage of CVS tests, a follow-up amniocentesis test will be recommended due to unclear CVS results. (Amniocentesis involves taking a sample of the amniotic fluid to study the baby's chromosomes).

### Most CVS results are normal

Most women who have CVS learn that the baby's chromosomes are normal. We call you with this information. You may ask the sex of the baby, or you may choose to wait until the baby is born to find this out. It is your choice.

Normal results are not a guarantee that the baby has no health problems or birth defects. CVS does not test for a birth defect of the spine called spina bifida. To test for spina bifida a second trimester blood test or ultrasound is recommended for women who have CVS. There are also many other conditions that cannot be found by CVS. Some of these include intellectual disability (not due to Down syndrome), as well as heart defects, cleft palate, and unexpected genetic disorders.

### What if the CVS result is not normal?

Once in a while, a CVS result reveals that the developing baby has a chromosome condition. Chromosome conditions are not curable. If this happens, genetic counseling will be offered to you and your partner right away. This may include discussion with one or more of the following people:

- Your doctor, nurse practitioner, or nurse midwife
- Your genetic counselor
- A geneticist
- A perinatologist
- Another pediatric specialist

You will have the opportunity to learn about the specific chromosome condition. You will also have time to discuss all available treatments and options for continuing or ending the pregnancy. Whether to continue or end a pregnancy is entirely your decision. Genetic counselors offer ongoing support to families regardless of the options they choose.

## What you need to know about Chorionic Villus Sampling (CVS)

- Examines fetal cells from the developing placenta
- Detects chromosome conditions during pregnancy
- Can test for other genetic disorders in at-risk pregnancies
- Procedure is usually done between 10 weeks and 14 weeks in pregnancy
- Can be done in two different ways
  - Passing a thin needle through a pregnant woman's lower belly into the placenta
  - Passing a thin plastic tube through the vagina and cervix into the placenta
- Activity is restricted for 24 hours after the procedure
- Risk for a miscarriage from CVS is 1 in 500 or less
- Test is very accurate
- Results take about two weeks
- More testing may be needed if results are unclear

### Should I have CVS?

Of course, getting reassurance about chromosome conditions can ease some of your worries. But learning about a chromosome condition during pregnancy may also be useful. You may use the information to decide whether or not to continue the pregnancy. You may use the information to help you feel more prepared when your baby is born. In some cases, information about the baby's condition may change your prenatal care or help guide the best place for delivery.

Before deciding if you want CVS, you may want to explore other options, such as prenatal screening tests like:

- [Integrated Screening with or without a Nuchal Translucency \(NT\) ultrasound](#)
- [Cell-free DNA Screening](#) (also called NIPT or non-invasive prenatal testing)
- [Quad Marker Screening](#) (for women 14 weeks or later in pregnancy)

Or you may choose an alternative diagnostic procedure to test the baby's chromosomes such as [amniocentesis](#).

Your doctor, nurse practitioner, or nurse midwife can review these options with you.

If you decide that you want CVS, you will meet with a genetic counselor who will review all the pros and cons of the procedure, and answer your questions.

Ultimately, the decision to have a CVS procedure is entirely yours.

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### Additional resources

- Learn more about prenatal testing for birth defects on the Genetics website: <http://genetics.kp.org>
- For pregnancy information, health tools, and classes visit your provider's homepage: [My Doctor Online](#)
- Access health and drug encyclopedias, interactive programs, health classes, and much more on the Kaiser Permanente website: [kp.org](http://kp.org)
- For health information, programs, and other resources contact your local Kaiser Permanente Health Education Center or Department. Ask your doctor for the location and contact information.

This information is not intended to diagnose health problems or to take the place of medical advice or care you receive from your physician or other health care professional.

If you have persistent health problems, or if you have additional questions, please consult with your doctor.