



Chorionic Villus Sampling

What is chorionic villus sampling?

Chorionic villus sampling (CVS) is a procedure to learn if a developing baby has a chromosome condition. It can also test for other genetic conditions. It is usually done after the 10th week and before the 14th week of pregnancy.

A small sample of the placenta (chorionic villi) is collected for testing. Because the placenta shares the baby's genetic makeup, CVS can diagnose genetic or chromosomal conditions before birth.

Who is offered CVS?

CVS is offered to anyone who wants to know about chromosome conditions during pregnancy. Most chromosome conditions happen randomly and do not run in families. These conditions often cause intellectual disability and birth defects. It is possible for a person of any age to have a pregnancy with a chromosome condition. The chance for some chromosome conditions, like Down syndrome, increases with age.

CVS may also be offered if the baby is at-risk for a genetic condition based on the family history or genetic carrier testing in the parents.

How is it done?

CVS is done by a specially trained doctor. The doctor uses an ultrasound to decide the best way to collect the sample. Ultrasound shows the size of the baby and the location of the placenta.

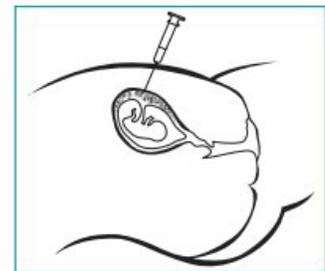
- **Transabdominal CVS** (through the abdomen) – The doctor passes a needle through the abdominal wall (belly) and into the placenta. There may be some discomfort when the needle is put in.
- **Transcervical CVS** (through the cervix) – The doctor passes a catheter (thin, flexible tube) through the cervix (the lower part of the uterus) and into the placenta. This usually feels like a PAP smear.

Ultrasound helps the doctor safely collect a small sample from the placenta without touching the baby or entering the fetal sac. The sample is sent to the laboratory in a labeled test tube. Results are available about 2 weeks after the CVS. A small number of samples might take longer when microarray is done.

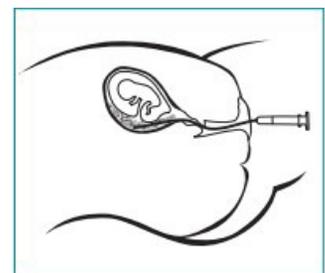
The procedure takes only a few minutes. Most of the visit is spent looking at the baby with ultrasound and preparing for the CVS. Usually, a CVS appointment lasts less than an hour.

What needs to be done before a CVS appointment?

You need a full bladder for the procedure. We will ask you to drink water before your appointment. If you are taking a blood thinner, tell your genetic counselor.



TRANSABDOMINAL CVS



TRANSCERVICAL CVS

Is CVS safe?

Every pregnancy has a chance for miscarriage or loss even when no testing is done. CVS is considered safe, but adds a very small risk for miscarriage. The added chance for miscarriage after CVS is about 1 in 1000.

What happens after CVS?

After CVS 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. If you have a transcervical CVS, you might 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 conditions like Down syndrome, trisomy 18, and trisomy 13. Testing can also find chromosome conditions with small extra or missing pieces of chromosomes, if requested. However, there are rare chromosome conditions that cannot be found with CVS. A small number of CVS tests have results that are difficult to interpret. A follow-up test, called amniocentesis, may be recommended when the CVS results are unclear. (Amniocentesis takes a sample of amniotic fluid to study the baby's chromosomes).

What if the CVS results are normal?

Most people who have CVS learn that their baby's chromosomes are normal. We call you with this information. You can ask about the sex chromosomes, which predicts the baby's sex. You could also choose to wait until the baby is born to find this out. It's your choice.

Normal results do not guarantee that the baby has no health problems or birth defects. It is not possible to test for all conditions or causes of intellectual disability. CVS also does not test for a birth defect of the spine called spina bifida. You will be offered a blood test or ultrasound to check for spina bifida.

What if the CVS results are not normal?

Once in a while, a CVS result shows that the developing baby has a chromosome or genetic condition. If this happens, genetic counseling will be offered right away. You may talk with one or more of the following people about the diagnosis:

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

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

What is my chance to have a baby with a chromosome conditions?

The chance for many chromosome conditions, including Down syndrome, trisomy 18, and trisomy 13, depends on how old you will be when you deliver.

- At age 20 - **1 in 525** (about 0.2%)
- At age 25 - **1 in 475** (about 0.2%)
- At age 30 - **1 in 385** (about 0.3%)
- At age 35 - **1 in 200** (0.5%)
- At age 38 - **1 in 100** (1.0%)
- At age 40 - **1 in 65** (1.5%)

The chance for a condition caused by an extra or missing piece of chromosome (called a copy number variant) is the same in any pregnancy, no matter how old you are:

About 1 in 200 (0.5%)

Microarray testing can be requested to find these type of chromosome conditions.

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 after 10 weeks and before 14 weeks in pregnancy
- Can be done in two different ways
 - Passing a thin needle through the lower belly
 - Passing a thin flexible tube through the vagina and cervix
- Activity is restricted for 24 hours after the procedure
- Risk for a miscarriage from CVS is about 1 in 1000
- Test is very accurate
- Results take about two weeks
- More testing may be needed if results are unclear

Should I have CVS?

Think about what information you want during pregnancy. Getting normal CVS results could ease some of your pregnancy worries. It may also help to learn about a genetic or chromosome condition during pregnancy. You could use the information to decide whether or not to continue the pregnancy. You could use the information to help you feel more prepared when your baby is born. In some cases, knowing 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 a prenatal screening test like:

- [Cell-free DNA Screening](#) (also called non-invasive prenatal testing/NIPT)

Or consider a different diagnostic procedure to test the baby's chromosomes, like:

- [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 to review 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 genetic tests on the Genetics website: [Genetics.kp.org](https://www.genetics.kp.org)
- For pregnancy information, health tools, and classes visit: [My Doctor Online](#)
- Access health and drug encyclopedias, interactive programs, health classes, and much more on the Kaiser Permanente website: [kp.org](https://www.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.