

Information for patients on chorionic villous sampling (CVS)

Key Points

- Chorionic villus sampling is known as CVS.
- CVS is a procedure in which a tiny sample of tissue is removed from the placenta, or afterbirth, by passing a fine needle through the mother's abdomen
- CVS is usually offered to women who have an increased chance of having a baby with a disorder, such as Down syndrome.
- The safest time to have CVS is after 11 weeks of pregnancy.
- Although CVS is usually done before 14 weeks of pregnancy, it can be done later than this.
- About 1 in every 100 women (or 1%) who have a CVS from 11 to 13 weeks of pregnancy, under ultrasound guidance, miscarry as a result of the procedure.

What is CVS?

CVS is a diagnostic procedure carried out during pregnancy. It is most commonly used to check the baby's chromosomes for specific disorders such as Down syndrome.

When and how is CVS performed?

CVS is performed after 11 weeks (Fig. 1). Ultrasound jelly is applied over your abdomen and a detailed scan of the pregnancy made. The position of the placenta is identified. Your skin is then cleaned in the area where the needle will be inserted. Local anaesthetic is inserted into the skin.

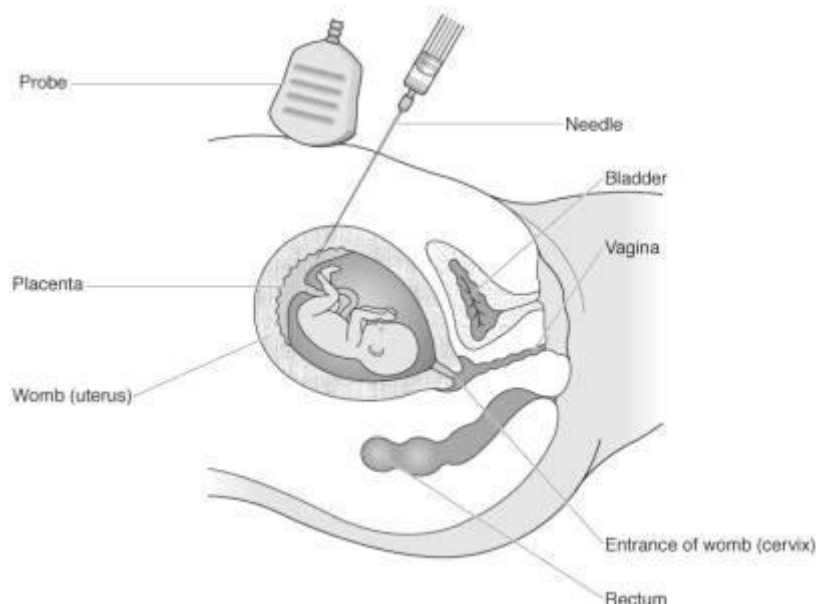


Fig. 1 Schematic representation of the transabdominal CVS procedure

Under ultrasound guidance, a needle is pushed through the abdomen and the wall of the womb into the placenta. A small amount of placental tissue is sucked up into a syringe. The needle is then taken out and the baby is checked on ultrasound. The placental tissue, which contains some of the baby's cells, is sent to the laboratory for testing (see section on 'What are the laboratory tests?').

If your blood group is Rh (rhesus) negative, you will be recommended an injection of anti-D immunoglobulin after the procedure to prevent you from developing antibodies against the baby's blood cells. You can find more information about this in [Guidance on the routine use of anti-D prophylaxis for RhD negative women: information for patients](#), by the National Institute for Health and Clinical Excellence (NICE).

Is CVS painful and what should I do afterwards?

Most women say that having a CVS is uncomfortable rather than painful, a bit like a strong period pain. Women often feel anxious but generally women say that the thought of it is worse than the actual test. After the procedure you should rest, if you wish to, for the remainder of the day. It is a good idea to take things easy for a couple of days after the test, avoiding any heavy lifting or strenuous exercise. You may notice a spot of blood on your underwear and mild cramping afterwards for up to 24 hours. This is normal. It is perfectly safe to take 500 - 1000 mg of paracetamol to ease the pain.

However, if you experience any more significant or unusual symptoms following the test, such as feeling shivery (as if you have 'flu), fluid loss, bleeding or contractions you should seek advice immediately (see separate sheet "Advice for Women following CVS").

What are the risks of CVS?

Every pregnancy carries a risk of miscarriage. The additional overall risk of miscarriage from CVS is approximately 1%. In other words, about 1 in every 100 women who have CVS under ultrasound guidance after 11 weeks will miscarry. CVS can cause a miscarriage due to inflammation or localised bleeding.

There is a small risk, less than 1 in 1000 women who have CVS, that the procedure will cause a serious infection that affects the mother's health. A maternal infection can be caused by the needle puncturing the bowel, or by skin contamination. These risks can be minimised by standard procedures to reduce infection.

Who should consider CVS?

Women may consider CVS if they:

- have an increased risk of a chromosomal disorder such as Down syndrome following first trimester scan +/- maternal blood test
- have received a result from a scan which shows certain features, such as increased fluid at the back of the baby's neck (nuchal translucency) indicating the baby may have a disorder such as Down syndrome

- there is a family history of a genetic disorder that can be detected by CVS
- want to know for certain whether the baby has a normal chromosome complement

What are the laboratory tests?

There are two stages of the laboratory results to evaluate the baby's chromosomes. These two stages are performed in different ways. These are:

- **a rapid test** (PCR or FISH test) which checks for a few specific chromosomes. Results from this test are usually available after three working days. The disorders that can be detected by the rapid test include Down syndrome (trisomy 21 - caused by an additional chromosome 21), Edward syndrome (trisomy 18 - caused by an additional chromosome 18) and Patau syndrome (trisomy 13 - caused by an additional chromosome 13) and if requested sex chromosome disorders.
- **a full karyotype** which checks all the baby's chromosomes. Results from this test are usually ready within two to three weeks.

We will arrange with you how you would like to receive your results (by phone at a pre-arranged time or by post).

How reliable are the laboratory tests?

For most women the laboratory test will give a definite 'yes' or 'no' answer. The result will let you know, one way or the other, whether the baby has the disorder the test was looking for.

However, with the full karyotype test there is small chance, about 1 in 100, that it will not give a clear result. This could be because it was not possible to analyse the sample in the laboratory (culture failure) or that the sample was analysed and the test gave an uncertain result. Occasionally there are problems with the rapid test and due to blood staining it is not feasible to give a "quick result".

Even if the rapid test does not find a problem, the full karyotype may show an abnormality (not detectable with the rapid test) when the full results become available about two weeks later. If the result is not clear, it may be necessary to offer you a repeat amniocentesis, or other tests.

What will the results tell me?

The laboratory tests are able to detect a range of disorders, but not all.

- Most women who have CVS will have a 'normal' result, in other words, their baby will be born without the disorder that the test was looking for.
- Some women will be informed that the baby has the disorder
- Very occasionally women have a CVS to detect Down syndrome and another disorder is detected.
- Very occasionally the baby who has a 'normal' result can be born with another chromosomal or genetic condition that had not been tested for. A normal karyotype result does not exclude every disorder.

What are my choices if the results are abnormal?

If the results are abnormal, these will be discussed fully by the Doctor and any appointments with geneticists or paediatricians arranged. For the majority of disorders, there is no treatment or cure. You will need to consider what is best for you and the baby. This might be to:

- continue with the pregnancy and use the information you have gained to help prepare for the birth and aftercare of your baby.
- terminate this pregnancy.

If you consider a termination of pregnancy following an abnormal result, you will be given full information about what this involves. It will depend upon how many weeks pregnant you are when you make the decision. Ending the pregnancy may involve going into labour.

Is there anything else I should know?

- If you are HIV positive and you decide to have CVS, this might increase the risk of passing HIV on to your baby. You may be offered treatment with HAART (highly active antiretroviral therapy), if you are not already taking it. This reduces the risk of the HIV virus infecting the baby.
- If you carry hepatitis B or hepatitis C viruses, there is in theory a possibility that CVS might increase the risk that you pass this onto your baby. There is not enough information to be sure about whether this risk is real or not.

Sources and acknowledgements

This information is based on the Royal College of Obstetricians and Gynaecologists (RCOG) guideline **Amniocentesis and Chorionic Villus Sampling** (published by the RCOG in January 2005 and due for a review in January 2008). The guideline contains a full list of the sources of evidence we have used. You can find it online.