



## CHORIONIC VILLUS SAMPLING

### WHAT IS CHORIONIC VILLUS SAMPLING?

Chorionic villus sampling (CVS) is a relatively new procedure used to diagnose certain birth defects in the first trimester of pregnancy. The test has been performed regularly since 1982, and thousands have been performed around the world. The CVS procedure involves inserting a small catheter (tube) through the cervix and into the developing placenta. Prior to the procedure, an ultrasound examination is performed to confirm fetal viability, location of the placenta, and length of gestation. Then, the woman lies on her back and places her feet in stirrups while the vagina and cervix are prepared. The catheter is then put through the cervix and a bit of placental tissue is gently suctioned into a syringe. The procedure is performed under ultrasound guidance, and most women experience very little discomfort during the testing. Once the procedure is completed, the patient may resume normal activity. Both the placental and fetal tissues originate from the same cell line and are genetically identical. Thus, by obtaining a tiny sample of the chorionic villi from the placenta, one can determine certain genetic characteristics of the fetus.

### WHEN AND WHY IS CVS PERFORMED?

CVS is performed usually between 10 and 12 weeks from the first day of the last menstrual period. CVS can detect chromosome abnormalities such as Down syndrome and may detect certain genetic conditions when there is a family history of a disease. Couples who may wish to consider CVS include:

- Women 35 years of age and older
- Parents who have had a child with Down syndrome or other chromosome abnormality
- Couples who are known carriers of a chromosome rearrangement
- Couples who have a family history of a genetic condition for which testing is available

Until recently, amniocentesis was the accepted mainstay of prenatal diagnosis. Amniocentesis involves inserting a needle into the amniotic sac surrounding the fetus. Amniocentesis is performed between 14 and 16 weeks gestation, and test results take an additional 2 weeks. One advantage of CVS over amniocentesis is that test results following CVS may be available within the first trimester of pregnancy. For most couples, this means earlier reassurance.

## **WHAT ARE THE RISKS OF HAVING CVS?**

The potential risks of CVS are that minor complications, such as vaginal bleeding or cramping, occur more frequently following CVS than amniocentesis. Data suggests that the overall miscarriage rate following CVS is 2% to 5%. However, we recognize that many miscarriages occur naturally in the first trimester, even without CVS. Therefore, the additional risk for miscarriage due to the CVS, based on recent information, is approximately 0.8%.

Following a chorionic villus sampling, the patient may resume normal activities. However, it is suggested that strenuous activities, such as running or exercise classes, be avoided for several days. Additionally, patients should avoid sexual intercourse and use of tampons for 72 hours following CVS. It is not uncommon for women to experience uterine cramps similar to those during menses, or vaginal spotting for the first few days following the CVS procedure. A physician should be contacted if cramping continues to increase in severity, the bleeding becomes heavier, a fever develops, or there is leakage of fluid from the vagina.

Certain defects of the extremities have been reported in infants whose mothers underwent CVS. This type of limb deficiency is known as transverse limb defects and involves the absence of the distal structures of the limb (those furthest from the trunk). It has been hypothesized that these defects may be caused by a disruption of the vascular system of the limb. The overall risk for transverse limb defects following CVS is approximately 0.03% to 0.10% (1/3,000 to 1/1,000). The risk and severity of the defect seems to be related to the timing of the procedure, with more limb defects seen in procedures performed before 9 weeks.

Since CVS is a relatively new concept to most couples and physicians, genetic counseling is recommended prior to the day of the procedure. This allows the couple to make an informed, unhurried decision regarding options for prenatal diagnosis.

If a couple decides to pursue CVS, an ultrasound examination should be performed at 18 to 20 weeks of pregnancy to evaluate fetal growth and anatomy. Also, the option of maternal serum alpha-fetoprotein (MSAFP) screening between the 15th and 18th week of pregnancy should be offered. MSAFP is a blood test that screens for neural tube defects such as open spina bifida and anencephaly. Amniotic fluid AFP levels are evaluated when an amniocentesis is performed, and MSAFP screening is not necessary following an amniocentesis.

### **CRAIG WINKEL, MD**

Dr. Winkel is Past Professor and Chair of the Department of Obstetrics and Gynecology at Georgetown University in Washington, DC.

Date Published: 2000-09-21

**Health Information Provided by Women's Health Specialists**  
7800 Wolf Trail Cove, Germantown, TN 38138, (901) 682-9222, [www.whsobgyn.com](http://www.whsobgyn.com)

This information is for educational purposes only. It does not represent comprehensive coverage of the topics addressed and is not a substitute for direct consultation with your health care provider. Always consult a health care provider regarding your specific condition. Trademarks referred to are the property of their respective owners.