



FISH, or fluorescence in situ hybridization, is a test that can be done on the cells from a [chorionic villus sampling \(CVS\)](#) or [amniocentesis](#) procedure. FISH can provide rapid results (usually within 48 to 72 hours) for limited chromosome conditions. Most labs offer FISH testing on [CVS](#) or [amniocentesis](#) cells for chromosomes [21](#), [18](#), [13](#), and the [sex chromosomes](#) (X and Y). To learn more about chromosomes, visit our [Genetics 101](#) page.

Each of our chromosomes have sequences of letters, our DNA, that are unique to them. Our DNA is made up four different letters, called nucleotides: A, C, G, and T. These nucleotides work in pairs - A always pairs with T, and G always pairs with C.

Every chromosome has a pattern of these letters that are different than all of the other chromosomes, which is how we can identify them. Once we know what that pattern is, the lab can make a probe (which is a small piece of DNA that is made by the lab) that can find and attach to the matching sequence.

For example, if we know chromosome [18](#) has the sequence ACG TAT CGC, then the lab would make a probe that has the sequence TGC ATA GCG (remember T matches with A, G matches with C, etc). Once this probe is made, the lab can put it in with the cells from the [CVS](#) or [amniocentesis](#) procedure. When the probe finds it's matching chromosome, it attaches and then lights up (like a fluorescent light!).

FISH results on [CVS](#) and [amniocentesis](#) will generally tell you how many of chromosomes [21](#), [18](#), [13](#), [X](#), and [Y](#) the lab saw. We generally have two of each chromosome, so if the FISH test shows that three chromosome [21](#)s lit up, that means that there is a high chance that the pregnancy has three number [21](#) chromosomes, which is what causes [Down syndrome](#).

Because the FISH testing also looks at the [X](#) and [Y](#) chromosomes, it will also be able to tell whether the pregnancy is genetically male or female. So, if you don't want any spoilers, make sure your doctor or genetic counselor know ahead of time!

Although FISH is thought to be a reliable preliminary test, it is most often recommended to wait until the full genetic testing results have come back before making any permanent decisions about the pregnancy.

Click [here](#) to learn more about scheduling a genetic counseling appointment for pregnancy-related questions.



## Related Articles

- [Chorionic Villus Sampling \(CVS\)](#)

Chorionic villus sampling, or CVS, is a procedure that can be done during the first trimester of pregnancy (usually between 11 and 14 weeks). CVS involves getting some of the tissue from the placenta (the chorionic villi) so that the lab can test for chromosome and genetic conditions. Because CVS...

- [Amniocentesis](#)

Amniocentesis is a procedure that can be done during the second trimester of pregnancy (usually between 15 and 22 weeks). Amniocentesis involves getting some of the fluid from around the baby so that the lab can test for chromosome and genetic conditions. Because amniocentesis is an invasive procedure, there is...

- [Chromosome Analysis](#)

A chromosome analysis, or karyotype, is the traditional testing that has been done on cells from chorionic villus sampling (CVS) and amniocentesis procedures. A karyotype involves the lab examining the cells and determining the number of chromosomes. How the lab determines the number of chromosomes is a lengthy and complicated...

- [Prenatal Chromosomal Microarray](#)

Chromosomal microarray (CMA) is a type of chromosome test that can be done during pregnancy along with an amniocentesis or chorionic villus sampling (CVS), or can be done for patients who are suspected of having an underlying genetic syndrome. CMA can detect if there are small bits of missing (deletion)...