

Genes are in every cell in our bodies. They are made of DNA, which tells cells how to grow and work together. When genes work properly, they help stop cancer from developing.

Genetic testing looks for gene changes called mutations. Mutations can make genes stop working. This raises the risk of getting cancer.

Some mutations can be passed down through families. When this happens, some family members are more likely to get cancer. This inherited risk is called a *predisposition*. Some strong predispositions are called *hereditary cancer syndromes*.

Only about 1 in 10 cancers come from inherited mutations. Here are some signs that a family may have an inherited predisposition:

- Several members on the same side of the family with the same kind of cancer
- Family members with cancer at a young age
 - Breast, colon, or uterine cancer before 50
- Family members with more than one kind of cancer
 - Breast **and** ovarian cancer
 - Colon **and** uterine cancer
- Family members with rare cancers
 - Ovarian cancer
 - Pancreatic cancer
 - Male breast cancer

Who Should Be Tested

Genetic testing is not right for everyone. Genetic counselors and doctors can talk to you about whether genetic testing could be helpful. If your family has any of the signs above, you should consider genetic testing. You always have the final decision about whether to be tested.

If you have already been tested. Researchers learn more all the time about gene mutations that raise cancer risk. Genetic tests today may include genes or techniques that were not available a few years ago. Talk with a genetic counselor about the testing you had before. New tests may find gene mutations your earlier tests could not show.

Do you have a personal or family history of cancer? Genetic testing and counseling may be right for you. Call Huntsman Cancer Institute's Family Cancer Assessment Clinic to learn more: 801-587-9555.

If a sample of your tumor was tested. For some people with cancer, doctors have genetic tests done on a sample of the tumor. This helps them decide the best treatment plan. This is a different type of test than genetic tests for inherited mutations. Sometimes blood or saliva testing can confirm results from a tumor test.

Types of Tests

Genetic tests can look at one kind of gene at a time or many at once. A test for many genes at the same time is called a *multigene panel test* (MPT). An MPT can help find a hereditary cancer syndrome in a family more quickly than testing one gene at a time.

With MPT, the best family member to test first is one who has cancer. The test is more likely to find a gene mutation in someone with cancer. If the MPT results show a mutation, other family members can have a test for that mutation only.

Some MPTs are designed for specific types of cancer. Others look for genes that raise the risk for many types of cancer. A genetic counselor can help you decide what test is right for you and your family.

Insurance Coverage

Insurance will cover the testing cost for most people who need genetic testing. Talk with your insurance provider to find out what your policy covers. Payment plans and discounts can help other patients:

- Those whose insurance will not cover testing
- Those who do not have insurance
- Those who choose to pay out-of-pocket

Most patients pay less than \$250 for genetic testing. Many pay nothing at all.

continued on page 2

The **Genetic Information Nondiscrimination Act** (GINA) does not allow health insurance companies and employers to discriminate based on your genetic information. Genetic information cannot be considered a pre-existing condition. GINA does not apply to life, disability, or long-term care insurance.

What Testing Involves

Genetic testing starts with a sample of your blood or saliva. We send your sample to a laboratory. The test looks for differences in your genes compared to the general population. The differences can be mutations.

Results come back to the Family Cancer Assessment Clinic (FCAC) at Huntsman Cancer Institute in 2–4 weeks. You will meet with a genetic counselor to discuss what the results mean.

Results and Follow-up

Genetic tests have three possible types of results:

- Positive—a cancer-related mutation is present
- Negative—no mutation is present
- Uncertain—a mutation not known to be cancer-related is present

A genetic counselor will explain your results to you. The counselor may recommend follow-up based on your results:

- Special cancer screening schedule for you
- Genetic testing for other family members