

What is Hereditary Cancer?

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Cancer can be sporadic, familial or hereditary. Cancer that is not caused by an inherited gene change (mutation, also called pathogenic variant) is labeled either sporadic or familial cancer. In sporadic cases, the chance that a family member will develop cancer is the same as the typical person's chance, i.e., not increased. Most cases of cancer are sporadic. For familial cancer, a family member may have a modestly increased chance of developing the same type of cancer as his/her relative.

Cancer that is caused, in part, by an inherited gene change (pathogenic variant) is called **hereditary cancer**. Hereditary cancers often happen at an earlier age than sporadic cancers and can result in a person developing two or more cancers. Sometimes, they can be more aggressive than the sporadic form of the same cancer.

Relatives who inherit the gene change are also at an increased risk of developing certain types of cancers. Therefore, it is important to track your family history and talk to your doctor if you are worried about your family's history of cancer.

What is a gene?

Genes are the instructions our bodies need to develop and work properly. Each cell of our body has a copy of all our genes. Genes are made of DNA. Genes come in pairs. One of each pair is inherited from our mother and the other from our father.

A mistake or change in a gene that prevents it from working the way it should can cause health concerns. Certain genes make proteins that control how the cells of our bodies grow. Changes in such genes can lead to an increased chance of developing cancer. We can test for some of these genes. If we find a pathogenic variant in one of these genes, we can help people take steps to decrease the chance of getting cancer.

What is genetic counseling and testing?

Cancer genetic counseling includes gathering and evaluating your personal and family health history. Your risk for hereditary cancer can be evaluated using this information. Genetic counselors will look at patterns in your family history and may discuss genetic testing with you.

There are many different genetic tests for hereditary cancer conditions. Genetic tests look at certain genes to see if there are any harmful changes in the DNA.

Seeing a cancer genetic counselor does not mean you have to have genetic testing. A genetic counselor can talk with you about the benefits and limitations and help with testing if you decide to.

What is informed consent?

An important part of any recommended genetic testing is informed consent. Michigan law requires that health care providers must obtain the patient's **written, informed consent** before conducting pre-symptomatic or predictive genetic testing. Included in this consent is information about the condition being tested; risks, benefits and other implications of the genetic test; how the patient will be notified of the results and what they mean; and who will have access to the sample and test results.

Resources

For more information on hereditary cancer, please consider the following resources:

- www.Michigan.gov/hereditarycancer
- Informed Consent for Genetic Testing
https://www.michigan.gov/documents/InformedConsent_69182_7.pdf

To find a Michigan genetic counselor closest to you, please visit <https://migrc.org/providers/michigan-cancer-genetics-alliance/mcga-directory-of-cancer-genetic-services-providers/>