# Based on your answers, you may be at risk for a gene change (mutation) in a known cancer predisposition gene.

## What is a mutation in a known cancer predisposition gene?

A mutation (also called gene change or pathogenic variant) in cancer-related genes increases the risk that an affected individual could develop cancer.

Your answers to this risk assessment indicate that you may be at risk for a mutation in a cancer predisposition gene, based on one of the following health history:

- A tumor profiling test that shows a mutation in a hereditary cancer predisposition gene, or
- A blood relative with a known mutation in a cancer predisposition gene such as BRCA1, BRCA2, the Lynch syndrome genes (MLH1, MSH2, MSH6, PMS2, EPCAM), or others

In either case, it is recommended that you visit a cancer genetics professional to evaluate your hereditary risk for the appropriate gene.

## What do you do if you have a tumor profiling test that shows a mutation in a hereditary cancer predisposition gene?

**Tumor profiling** is a laboratory test that looks for certain gene mutations, proteins, or other biomarkers in a sample of tumor tissue. Tumor profiling can help clarify if there is a risk for a cancer being hereditary.

There are many types of tests for tumor profiling. For colorectal and endometrial cancer, two of the most common are **microsatellite instability (MSI)** and **immunohistochemistry (IHC).** If you had an MSI and/or IHC test indicating a possible hereditary cancer condition, you should be referred for genetic counseling. It is recommended that you take the following steps:

- talk to your health care provider about the results of this risk assessment and your tumor profiling test
- look for genetic counseling from a qualified professional

## What do you do if you have a blood relative with a known mutation in a cancer predisposition gene?

You and your family may benefit from cascade screening. **Cascade screening** is the process of testing family members for a pathogenic variant that has been found in a blood relative. It involves sharing test results with family members so they can be tested for the same gene change. When your blood relative shares their genetic results with you, your genetic testing is more informative and may be cheaper. Talking with family members about your shared risk for hereditary cancer can be hard, but this information can help save lives.

It is recommended that you take the following steps:

- talk to your health care provider about the results of this risk assessment and your relative's known mutation
- talk to your family members about your shared family health history
- look for genetic counseling from a qualified professional

## Resources

For more information, consider the following:

- www.Michigan.gov/hereditarycancer
- MSI screening https://www.cdc.gov/genomics/disease/colorectal_cancer/MSI.htm
- IHC screening https://www.cdc.gov/genomics/disease/colorectal_cancer/IHC.htm
- Talking with your family https://www.facingourrisk.org/understanding-brca-and-hboc/information/hereditary-cancer/family-history/
- Genetic counselors in Michigan https://migrc.org/providers/michigan-cancer-genetics-alliance/mcga-directory-of-cancer-genetic-services-providers/.