

About Genes

Genes are in every cell in our bodies. Genes are made of DNA. DNA tells cells how to grow and work together. We have two copies of each gene in each cell—one from our mother and one from our father.

A gene called *MUTYH* helps prevent cancer by fixing mistakes in DNA. Sometimes changes to the *MUTYH* gene happen. These changes are called mutations. Mutations can make the gene stop working. If the *MUTYH* gene stops working, mistakes in DNA cannot be fixed. This can cause cancer.

Everyone has two copies of the *MUTYH* gene. If you have a mutation in one copy, you have one copy that works and one that does not. Having one *MUTYH* mutation raises your risk of getting colon cancer. In people whose ancestors come from North America or northern Europe, 1–2 in 100 have one *MUTYH* mutation.

This factsheet is for people who have one *MUTYH* mutation.

A few people inherit mutations in both copies of their *MUTYH* gene. Learn more in the factsheet *About MUTYH-Associated Polyposis (MAP) Syndrome*.

MUTYH Mutations and Cancer Risks

Colon Cancer

On average, 5 in 100 people will get colon cancer in their lifetime. For people with one *MUTYH* mutation, 10 in 100 people will get colon cancer in their lifetime. If you have colon cancer or a family history of colon cancer, the *MUTYH* mutation may be involved.

People with one *MUTYH* mutation do not have a higher risk to get colon polyps. Polyps are small clusters of cells that develop on the inside of the colon. They are not cancer. If left untreated, they can turn into cancer over time.

Recommendations

People who DO NOT have a relative with colon cancer

- Your genetic counselor or doctor can tell you if you should get a baseline colonoscopy at age 40 or age 50.
- Recommendations may be different if you have a personal history of cancer.

People who have a relative with colon cancer

- If you have never had colon cancer, get a colonoscopy every 5 years starting at age 40.
- If you have a parent, brother, sister, or child who was diagnosed with colon cancer younger than age 50, start getting colonoscopies 10 years sooner than the age when your family member was diagnosed.

Family Members

If you have a family history of *MUTYH* mutations, you should think about getting genetic testing to check if you have two mutations. You may need to start colonoscopies at much younger ages.

If you have one *MUTYH* mutation, each of your children, brothers, and sisters has a 1 in 2 chance of having one *MUTYH* mutation. The chance that they inherit two *MUTYH* mutations (and have MAP) is small.

If both parents have one *MUTYH* mutation, their children could inherit the *MUTYH* mutation from one or both. Each of their children has a 1 in 2 chance of having one *MUTYH* mutation, a 1 in 4 chance of having two *MUTYH* mutations (MAP), or a 1 in 4 chance of having no *MUTYH* mutation.

Do you or a family member have a *MUTYH* gene mutation?

Our doctors and genetic counselors can help create a management plan.

Call Huntsman Cancer Institute's Family Cancer Assessment Clinic to learn more.

801-587-9555