What you need to know

MUTYH Gene

What does it mean to have two MUTYH pathogenic variants?
Having pathogenic variants, also known as mutations, in both copies the MUTYH gene causes a cancer predisposition condition called MUTYH-Associated Polyposis (MAP) syndrome.

What is my risk for cancer if I have MAP syndrome?
Individuals with MAP syndrome typically have many colon polyps (10-100s) and are at an increased risk for colorectal cancer. However, not everyone with MAP syndrome will develop cancer.

These risks are based on individuals who did not have regular screening and/or other treatments such as preventive surgery. There are data that suggest that people with MAP syndrome can significantly decrease their risk of developing cancer by careful medical and surgical follow-up.

### Lifetime Cancer Risks

<table>
<thead>
<tr>
<th>Cancer Type</th>
<th>General Population</th>
<th>MAP Syndrome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colon cancer</td>
<td>4-5%</td>
<td>70-90% (without intervention)</td>
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<tr>
<td>Small intestinal cancer</td>
<td>&lt;1%</td>
<td>5%</td>
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At this time, there have been a small number of studies on the exact cancer risks linked to MAP syndrome. Through continuing research, we hope to learn more about this condition.

What does it mean to have only one MUTYH pathogenic variant?
Little is known about cancer risks for people who have one MUTYH pathogenic variant and one healthy copy of MUTYH. They do not have MAP syndrome, but depending upon the family history of cancer, they may have a small increase in colon cancer risk.

What does a diagnosis of MAP syndrome mean for my family?

- All children of an individual with MAP syndrome will have at least one MUTYH pathogenic variant. Depending upon the family history of cancer, they may have a small increase in colon cancer risk.
- An individual with MAP can have a child with MAP if their partner has a MUTYH pathogenic variant.
- The siblings of an individual with MAP have a 1 in 4 (25%) chance of also having MAP, a 1 in 2 (50%) chance of having just one MUTYH pathogenic variant, and a 1 in 4 (25%) chance of not having any MUTYH pathogenic variant.