MASSACHUSETTS GENERAL HOSPITAL
CANCER CENTER

Lynch Syndrome: What You Need to Know

What does it mean to test positive for a *MLH1, MSH2, MSH6, PMS2,* or *EPCAM* gene mutation?

Mutations in the *MLH1, MSH2, MSH6, PMS2,* and *EPCAM* genes cause a hereditary cancer predisposition condition called Lynch syndrome, also known as Hereditary Non-Polyposis Colorectal Cancer (HNPCC) syndrome.

What is my risk for cancer if I have a Lynch syndrome gene mutation?

If you have an *MLH1, MSH2, MSH6, PMS2,* or *EPCAM* gene mutation, you have an increased risk of developing certain types of cancer. However, not everyone who has a gene mutation will develop cancer.

Lifetime Cancer Risks

	General Population	Lynch Syndrome
Colon cancer	5-6%	10-80%
Endometrial (uterine) cancer	2-3%	15-60%
Gastric (stomach) cancer	<1%	1-13%
Ovarian cancer	1-2%	4-24%

In certain families with Lynch syndrome, there is an increased risk for cancers of the hepatobiliary tract (liver/gallbladder), small bowel, urinary tract, central nervous system (brain), pancreas, and also for sebaceous neoplasms.

It is important to note that 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 a Lynch syndrome gene mutation can significantly decrease their risk of developing cancer by careful medical and surgical follow-up.

What is the chance that my family members will have a Lynch syndrome mutation if I test positive?

There is a 50% chance that a person with a mutation will pass it on to each of his/her children. In most cases, brothers and sisters of a person with a mutation have a 50% chance to have the mutation. Additionally, other family members are at risk to have the mutation.

How can I be tested for Lynch syndrome?

There are two different ways a person can be tested for Lynch syndrome:

Tumor testing: If you have had endometrial or colon cancer, a portion of your tumor is screened for microsatellite instability (MSI) and/or immunohistochemistry (IHC). If either of these tests is abnormal, you may have Lynch syndrome and additional genetic testing on a blood sample may be recommended. In most cases, if MSI and IHC are normal, it is unlikely that you have Lynch syndrome.

Germline (blood) testing: A sample of your blood is analyzed to determine if a mutation in *MLH1, MSH2, MSH6, PMS2,* or *EPCAM* is detectable.