



Immunohistochemistry Testing

Routine Testing in Colon and Rectal Cancer

When you have surgery for colon or rectal cancer (CRC), the tumor that is removed will be carefully studied with many different tests. The results are given to your surgeon in a pathology report after your surgery. The pathology report helps your doctor know how you may do after surgery, the size of the tumor, the type of cancer, and if the cancer has spread. Your doctor will talk with you about the pathology results.

Immunohistochemistry (IHC) testing is a routine test that can be done on CRC surgery specimens at Intermountain Medical Center. The IHC test will look for the presence or absence of four proteins in the tumor. These proteins are usually present in normal colon cells. Each protein is made by a single gene. The four genes are: *MLH1*, *PMS2*, *MSH2*, *MSH6*. Missing one or more of the proteins can indicate an increased risk for a familial form of CRC known as Lynch syndrome.

Familial CRC and Lynch Syndrome

Most CRC does not run in families; that is, it is not inherited. About 5–10% of all individuals with CRC may have an increased family (familial) risk for CRC. Lynch syndrome is one of the types of familial CRC. Lynch syndrome is caused by inherited changes in one of the four genes listed above.

IHC testing is helpful in alerting families to the possibility of familial CRC and if they are at increased risk for developing Lynch syndrome. People who have Lynch syndrome have an increased risk for CRC and other cancers, including uterine cancer. Cancer specialists recommend more frequent screening in families at increased risk for the development of CRC.

What do IHC results mean?

Possible results:

1. All four proteins are present in your tumor. In about 8 of 10 patients, all four proteins will be present in their CRC tumor. If all four proteins are found in your tumor, then you have the most common type of colon cancer and you are at low risk for Lynch syndrome. You will receive a letter with more information about the meaning of the result.

2. One or more of the proteins is absent in your tumor. This result is found in about 2 of 10 patients. This result means that you are likely to have Lynch syndrome. People who have Lynch syndrome have a higher chance of having more than one cancer in their lifetime. If you have this result you will be contacted and offered a consultation visit with a cancer genetics specialist to learn more about your result.

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