TumorNext-*Lynch*®

Patient Guide

A Test For Patients With
Colorectal or Uterine Cancer

Ambry Genetics®

Germline vs. Tumor Testing

TumorNext-*Lynch* looks for mutations and other changes in your tumor (also referred to as somatic testing) and inherited (germline) mutations in your blood.

It is important to understand the key differences between **germline** and **tumor** genetic tests, since they can give you very different information about your health and your family.

WHAT'S THE DIFFERENCE?

	WHAT IS TESTED?	INHERITANCE	RISKS
INHERITED (GERMLINE)	Blood or saliva Genes that are identical in all cells of your body	Can be inherited and passed on to family members	Linked to an increased risk for other cancer(s)
TUMOR (SOMATIC)	Your tumor tissue for cancer-specific changes	Not inherited and only present in your tumor cells. Cannot be passed to family members	Does not increase your risk for other cancers Can impact your treatment

What is TumorNext-*Lynch?*

TumorNext-*Lynch* tests for both germline (inherited) mutations that cause Lynch syndrome, as well as mutations and other changes in your tumor that may be able to rule out Lynch syndrome. The results of this testing can help your healthcare provider know more about your cancer risks, so they can make a better plan for how to care for you and your family members.

HOW CAN TUMORNEXT-*LYNCH* HELP?

GERMLINE (INHERITED)

Learning if you have Lynch syndrome can help you understand your future cancer risks and if you need to undergo more cancer screening or consider preventive options.

Your test results could also impact your family members, as they may also have an increased cancer risk.

TUMOR (SOMATIC)

Learning if you have certain genetic changes or mutations in your tumor can help to rule out a diagnosis of Lynch syndrome and can help your healthcare provider understand if you may or may not be a good candidate for certain treatments.

WHO SHOULD HAVE TESTING WITH TUMORNEXT-*LYNCH?*

Patients with a personal history of **colorectal** or **uterine** cancer who:

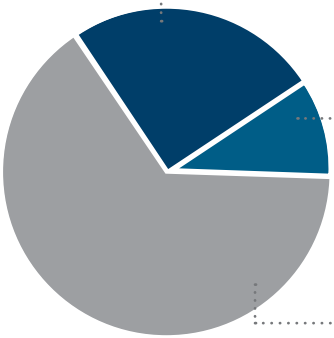
- Have tumor screening results that suggest a possible diagnosis of Lynch syndrome, like abnormal MSI or IHC* results
- Have a personal and family history of cancer suspicious for Lynch syndrome

*WHAT IS MSI/IHC?

Immunohistochemistry (IHC) and microsatellite instability analysis (MSI) are two tests performed on tumor tissue to screen for Lynch syndrome and they may be done automatically at some hospitals for patients with certain types of cancer, like colorectal or uterine. The results of these tests can tell us if a tumor has certain traits that may make it more likely for the patient to have Lynch syndrome, but it can't diagnose or confirm that someone has the condition. When people have abnormal MSI or IHC results, additional testing, such as TumorNext-Lynch, is needed to confirm or rule out Lynch syndrome.

Understanding The Basics

CANCER FALLS INTO 1 OF 3 CATEGORIES



FAMILIAL CANCER

A pattern of the same or related types of cancer within a family that may be due to genes and/or other shared factors, such as environment and lifestyle

HEREDITARY CANCER

A pattern of the same or related types of cancer within a family due to inherited gene changes (called mutations), that can be passed from parent to child

SPORADIC CANCER

Cancers that occur by chance in one or two family members that are not due to an inherited gene mutation. Approximately 80% of all cancers are sporadic.[1]

ABOUT HEREDITARY CANCER

Many people have a family history of cancer, but only **5-10% of cancer is hereditary.**[2]

People who have these gene mutations **are born with them** – they do not develop over time.

Learning if you have an **inherited mutation** can help you know more about your cancer risks.

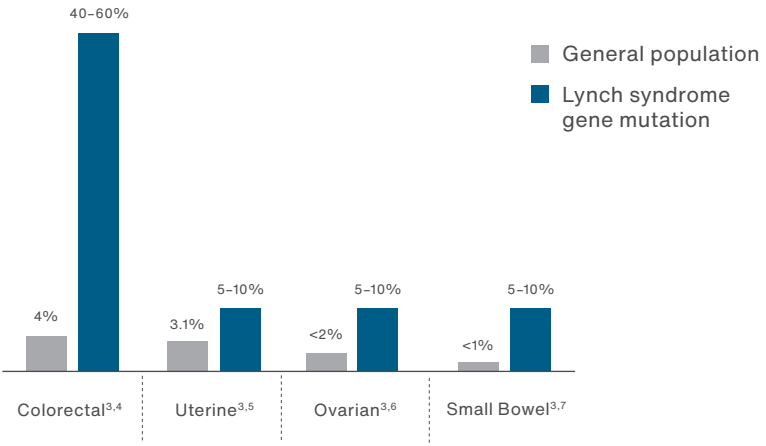
People with a higher chance of developing cancer may need screening, like colonoscopies, that start at **younger ages, and occur more often.**

Understanding Disease Better Through Quality Testing

YOUR GENES CARRY A STORY THAT IS UNIQUE TO YOU AND MAKES YOU WHO YOU ARE. GENETIC TESTING CAN HELP YOU BETTER UNDERSTAND YOUR RISKS FOR CANCER.

Lynch syndrome is caused by inherited mutations in either MLH1, MSH2, MSH6, PMS2, or EPCAM. It is the most common cause of hereditary colorectal and uterine cancer and occurs in an estimated up to 1/279 Americans. People with Lynch syndrome have an increased risk for multiple types of cancer including colorectal, uterine, ovarian, and others. The graph below highlights some of the cancer risks for a person with Lynch syndrome compared to someone in the general population who does not have this condition.

Lynch Syndrome Lifetime Cancer Risks (%)*



What are the Benefits of TumorNext-*Lynch?*

BENEFITS OF TUMOR TESTING:

Provides more information that can help clarify whether or not you have Lynch syndrome, so that your healthcare provider knows how to best care for you and your family.

BENEFITS OF BOTH TUMOR AND GERMLINE TESTING:

Your healthcare provider may be able to discuss additional personalized treatment options based on your genetic test results.

BENEFITS OF GERMLINE GENETIC TESTING:

Your healthcare provider can adjust your **cancer screening plan** (such as age of initial screening, type, and frequency) based on your genetic test results.

- An example of cancer screening is a colonoscopy

Your healthcare provider may discuss possible cancer **prevention options,** such as preventive surgery to reduce the risk for certain cancers

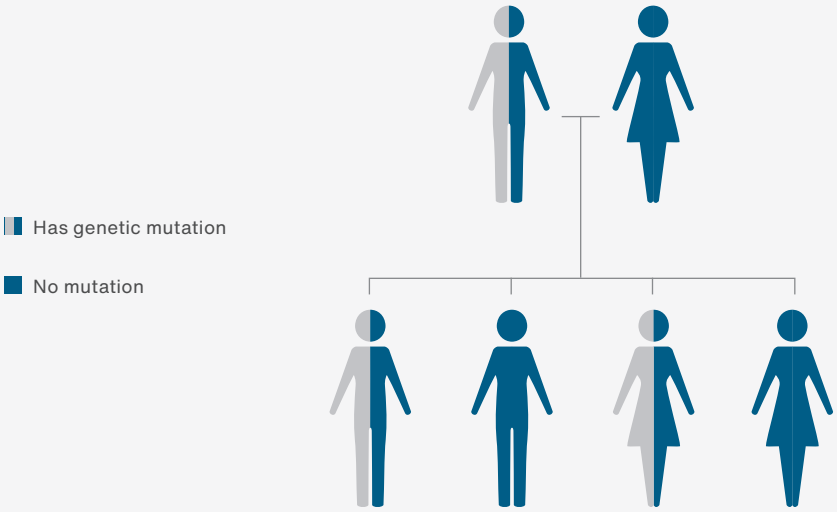
- An example is prophylactic hysterectomy and oophorectomy (removing the uterus, ovaries and Fallopian tubes before a cancer occurs).

AMBRY GENETICS OFFERS NO-COST TESTING TO CLOSE RELATIVES

This is available for the specific genetic mutation identified in the first family member tested at Ambry within 90 days of the original report date.

FOR YOUR FAMILY MEMBERS:

If you test positive for a genetic mutation, your close family members (like your parents, brothers, sisters and children) have a 50/50 random chance of also having the same mutation.



- Men and women have the same chance of inheriting a mutation, but their chance of developing cancer may be different.

Possible Genetic Test Results

CONSISTENT WITH A DIAGNOSIS OF LYNCH SYNDROME

- You are at an increased risk for cancers such as colorectal and uterine. Your healthcare provider will discuss the best management recommendations for you.
- Genetic testing for certain family members may be recommended.

RULES OUT A DIAGNOSIS OF LYNCH SYNDROME

- You were not found to have an inherited gene mutation that causes Lynch syndrome.
- If you had previously abnormal Lynch syndrome screening results (MSI/IHC), the testing explained these results and found that you most likely do not have Lynch syndrome.

PERSONALIZED TREATMENT OPTIONS

- Based on certain traits of your tumor, you may be a candidate for personalized treatment options, such as immunotherapy. Talk to your doctor about which treatment options may be right for you.

INCONCLUSIVE RESULTS THAT CANNOT CONFIRM OR RULE OUT A DIAGNOSIS OF LYNCH SYNDROME

- Cancer risk(s) and treatment recommendations are based on personal and familty history.

It is possible to have a combination of positive and VUS results, since multiple genes are tested.

Resources For You

Ambry Genetics' Patient Education Website

ambrygen.com/patient

Cancercare

cancercare.org

American Cancer Society

cancer.org

Genetic Information Nondiscrimination Act

ginahelp.org

American Society of Clinical Oncology

cancer.net

National Cancer Institute

cancer.gov

FIND A GENETIC COUNSELOR

National Society of Genetic Counselors

nsgc.org

Canadian Association of Genetic Counsellors

cagc-accg.ca

Frequently Asked Questions

1 HOW IS GENETIC TESTING PERFORMED AND HOW LONG DOES IT TAKE?

Genetic testing requires a blood or saliva sample, in addition to a tumor sample, which is collected using a special kit that is shipped overnight to Ambry Genetics by your healthcare provider. The test takes three to four weeks to complete from the time Ambry receives both samples and results are sent to your healthcare provider.

2 WHAT WILL HAPPEN WHEN MY RESULTS ARE READY?

Your healthcare provider will receive your results; they will not be sent directly to you. Every healthcare provider may have a different method and time frame for reviewing your results with you, so it is important to discuss this process with them when your test is performed. Your healthcare provider will discuss recommended next steps based on your test results.

3 WILL MY GENETIC TEST RESULTS AFFECT MY INSURANCE COVERAGE?

In the U.S., the Genetic Information Nondiscrimination Act (2008) prohibits discrimination by health insurance companies and employers, based on genetic information. Depending on where you live in the world, you may have different (or fewer) laws in this area. Visit ginahelp.org to learn more.

4 HOW WILL MY TEST RESULTS BE PROTECTED?

We are required by law to maintain the confidentiality of your protected health information in accordance with the Health Insurance Portability and Accountability Act (HIPAA). Visit HHS.gov to learn more.

5 SHOULD I TELL MY FAMILY MEMBERS ABOUT MY GENETIC TEST RESULTS?

It is important to share your results with your family members, because they may provide additional information about their own cancer risks and management options. If you feel unsure about how to approach the subject, your healthcare provider may be able to offer some advice.

6 WILL GENETIC TESTING BE COVERED BY MY INSURANCE?

Many insurance plans cover genetic testing, and Ambry Genetics is contracted with the majority of U.S. health plans. Your out-of-pocket cost may vary based on your individual plan. A team of dedicated specialists is available to help you get access to the genetic testing you need, and provide further details about our payment options. Please call or email our Billing department at +1.949.900.5795 or billing@ambrygen.com with any questions. Visit ambrygen.com/patientbilling for more information.

7 WHAT IS AN EXPLANATION OF BENEFITS (EOB)?

Your insurance company sends you an EOB to explain any services paid on your behalf. You can contact us directly to speak with a Billing specialist with any questions or concerns about Ambry Genetics genetic testing that appears on your EOB. It is important to remember that insurance companies can take several weeks or even a couple of months to process claims.

STILL HAVE QUESTIONS?

Talk to your healthcare provider or visit our website: ambrygen.com

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References

1. (n.d.). Review of Cancer Genetics. Retrieved May 10, 2022, from https://www.cooperhealth.org/sites/default/files/pdfs/Review_of_Cancer_Genetics.pdf
2. Anon, Family Cancer Syndromes. American Cancer Society. Available at: https://www.cancer.org/cancer/cancer-causes/genetics/family-cancer-syndromes.html Accessed March 22, 2022]
3. Anderson, M. D. "Q&A: Understanding and Managing Lynch Syndrome." MD Anderson Cancer Center, www.mdanderson.org/cancerwise/qa-understanding-and-managing-lynch-syndrome.h00-158589789.html#:~:text=What%20are%20the%20cancer%20risks. Accessed 30 June 2022.
4. "Key Statistics for Colorectal Cancer." www.cancer.org, www.cancer.org/cancer/colon-rectal-cancer/about/key-statistics.html#:~:text=Overall%2C%20the%20lifetime%20risk%20of.
5. "Cancer of the Endometrium - Cancer Stat Facts." SEER, 2018, seer.cancer.gov/statfacts/html/corp.html.
6. American Cancer Society. "Ovarian Cancer Risk Factors." Cancer.org, American Cancer Society, 2017, www.cancer.org/cancer/ovarian-cancer/causes-risks-prevention/risk-factors.html.
7. "Cancer of the Small Intestine - Cancer Stat Facts." SEER, 2018, seer.cancer.gov/statfacts/html/smint.html.