Frequently Asked Questions About Genetic Testing

Q: Will genetic testing be covered by my insurance?
A: When patients meet specific indications, testing may be covered by insurance. Your costs will also depend on your deductible and co-insurance. The Human Genetics Laboratory works with insurance companies to obtain prior authorization. An estimate of your out-of-pocket costs will be provided before you decide whether or not to have testing.

Q: Will genetic testing results affect my health insurance coverage?
A: Federal law protects your genetic information. The Genetic Information Nondiscrimination Act (GINA) of 2008 (Public Law 110-233) prohibits health insurance companies and employers from discriminating based on genetic test results, in most cases. However, at this time, laws do not protect against discrimination for long term care, disability, or life insurance.

Q: If I have already had cancer, do I need genetic testing?
A: It is most informative to first provide genetic testing to the family member with a personal history of cancer. Results from genetic testing can help explain why the cancer occurred, and, more importantly, can give information about future cancer risks. These results may change your care and can help family members understand their chance of getting cancer.

Q: What if I have previously had genetic testing and no mutation was identified?
A: The Comprehensive63 Panel may be useful depending on your previous test, if additional genes will be analyzed that could potentially provide an answer for you and your family. Your genetic counselor can discuss this with you.

Patient Resources

American Cancer Society
• www.cancer.org

Bright Pink
• www.brightpink.org

FORCE
• www.facingourrisk.org

Foundation for Women’s Cancer
• www.foundationforwomenscancer.org

Genetic Alliance
• www.geneticalliance.org

Hereditary Colon Cancer Foundation
• www.hcctakesguts.org

Lynch Syndrome International
• www.lynchcancers.com

National Cancer Institute
• www.cancer.gov

National Ovarian Cancer Coalition
• www.ovarian.org

Sharsheret
• www.sharsheret.org

Susan G. Komen
• www.komen.org
What is Hereditary Cancer?
Cancer is common. Most cancers occur by chance, and it is not uncommon to have family members with cancer. These sporadic cancers are likely caused by a combination of genes and environment. However, a portion of all cancer is hereditary, meaning a person had a predisposition to develop the cancer. Hereditary cancers are caused by a change in a single gene, which is present in a person before they are born. Single gene changes that predispose a person to cancer are often passed from generation to generation in a family, but they may also be brand new in an individual. Not everyone who inherits a genetic predisposition to cancer will develop cancer in their lifetime, but they are at an increased risk and there are often recommendations for high-risk screening and management. A personal and family history may be suggestive of hereditary cancer, depending on certain types of cancer present, certain clustering of cancers, early age of onset, and other unique features.

What is the Comprehensive63 Panel?
Approximately 5-10% of cancer is hereditary. The majority are caused by high-risk genes, many of which overlap between multiple types of cancer. Additional moderate-risk genes are also known to play a role in women's hereditary cancers. Comprehensive63 is a genetic test that looks for changes in 63 genes known to increase the risk for multiple types of cancer. Most of these gene changes are associated with risks for adults, but some mutations may cause risks for children. Your health care provider can discuss features related to each gene.

Is This Panel Appropriate for Me?
This test may be right for you if your personal and/or family history suggests the possibility of multiple underlying syndromes, for example, ovarian cancer and colon polyposis, or breast cancer and neuroendocrine tumors.

GENES INCLUDED
ABRAXAS1 CDC73 MAX NF1 RAD50 STK11
ALK CDH1 MEN1 NF2 RAD51C SFU1
APC CDKN2A MET NTHL1 RAD51D TEMEM127
ATM CHEK2 MTF PALB2 RET TP53
AXIN2 DICER1 MLH1 PHOXB SDHA TSC1
BARD1 EPAC1 MRE11 PMS2 SDHAF2 TSC2
BLM FANCC MSH2 POLD1 SDHB VHL
BMPR1A FH MSH3 POLE SDHC XRCC2
BRCA1 FLCN MSH6 PRKAR1A SDHD
BRCA2 GALNT12 MUTYH PTC11 SMAD4
BRIP1 GREM1 NBN PTEN SMARCA4

CANCERS INCLUDED
Basal and Squamous Cell Carcinoma Pancreatic cancer
Brain and CNS tumors Paraganglioma
Breast cancer Phaeochromocytoma
Colon cancer Prostate cancer
Colon polyposis Sarcoma
Endocrine tumors Small bowel cancer
Kidney cancer Stomach cancer
Leukemia and Lymphoma Thyroid cancer
Melanoma Uterine cancer
Ovarian cancer

SYNDROMES INCLUDED
APC-associated polyposis (FAP, AFAP)
Ataxia telangiectasia (carrier status tested)
Birt-Hogg-Dube syndrome
Bloom syndrome
Carney complex
Constitutional mismatch repair
Familial atypical multiple mole melanoma syndrome
Fanconi anemia
Hereditary breast and ovarian cancer syndrome
Hereditary diffuse gastric cancer
Hereditary leiomyomatosis and renal cell cancer
Hereditary mixed polyposis syndrome
Hereditary papillary renal carcinoma
Hereditary phaeochromocytoma paraganglioma syndrome
Juvenile polyposis syndrome
Li-Fraumeni syndrome
Lynch syndrome
Multiple endocrine neoplasia type 1 (MEN1)
Multiple endocrine neoplasia type 2 (MEN2)
MUTYH-associated polyposis (MAP)
Neurofibromatosis type 1 (NF1)
Neurofibromatosis type 2 (NF2)
Nevoid basal cell carcinoma (Gorlin) syndrome
Peutz-Jeghers syndrome
Polymerase proofreading-associated (POLE, POLD1) polyposis
PTEN hamartoma tumor (Cowden) syndrome
Tuberous sclerosis complex (TSC)
von Hippel-Lindau syndrome

Test Details
This test is performed on a blood sample sent to the Human Genetics Laboratory at the University of Nebraska Medical Center.

Potential Test Results
Positive for a Pathogenic Variant
A pathogenic (disease-causing) change in a gene was identified and this change is known to increase the risk for certain cancers. Another name for this type of change is a "mutation".

Targeted genetic testing for this pathogenic change is available for at-risk family members.

Negative
No harmful or uncertain changes were found in any of the genes tested.

A Variant of Uncertain Clinical Significance (UCS)
An inconclusive change in a gene was identified. This means that the change may increase the risk for cancer or be harmless.

Variants of uncertain significance may also be classified as “Likely Pathogenic” or “Likely Benign”.

References available on the Human Genetics Laboratory website: www.unmc.edu/mmi/geneticslab/resources/reference-articles.html