

# Hereditary Cancer Genetic Test Results

*This report is intended to facilitate a discussion between providers and their patients.*

## INFORMATION FOR INDIVIDUALS WITH A PATHOGENIC OR LIKELY PATHOGENIC VARIANT IN THE *MEN1* GENE

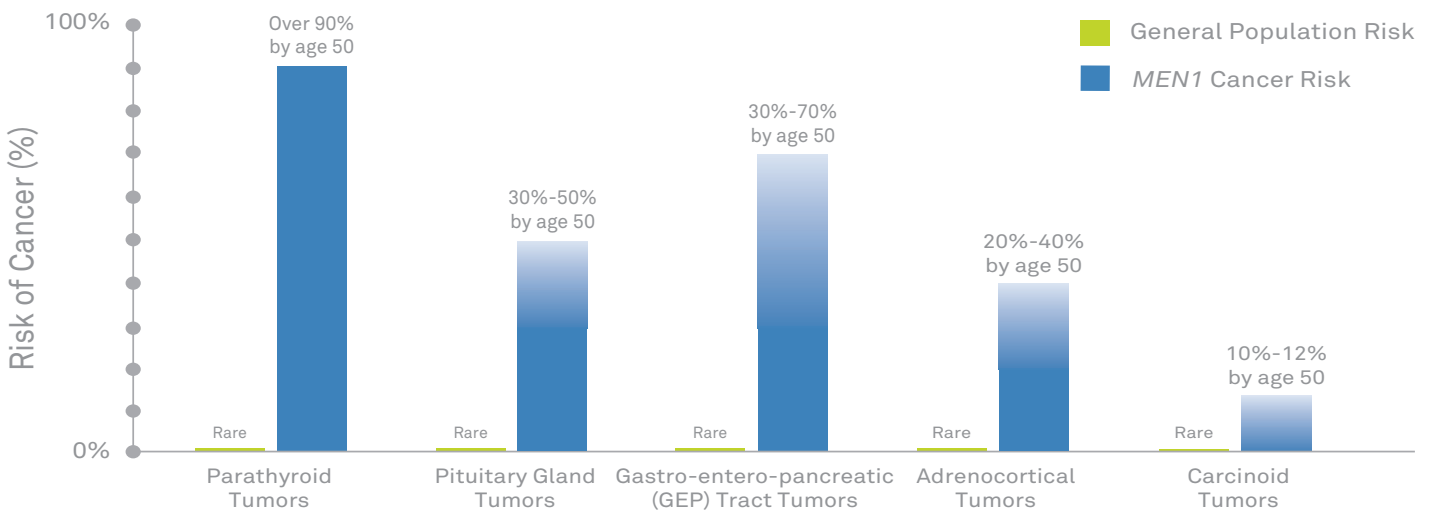
### What this result means

Individuals who have a pathogenic or likely pathogenic variant (sometimes called a mutation) in the *MEN1* gene have multiple endocrine neoplasia type 1 (MEN1) syndrome. Individuals with *MEN1* have a higher-than-average chance to develop the following tumors: parathyroid, pituitary gland, well-differentiated tumors of the gastro-entero-pancreatic (GEP) tract, adrenocortical, and carcinoid tumors. Individuals with *MEN1* syndrome may also have other tumors or non-cancerous findings.

### Cancer risk

The graph below compares general population cancer risks to the potential cancer risks associated with pathogenic variants in the *MEN1* gene. Individual cancer risks may be higher or lower depending on the specific variant identified in addition to each individual’s gender, age, medical history, and family history. Not everyone with a pathogenic or likely pathogenic variant will develop cancer.

Information about cancer risks related to pathogenic variants in *MEN1* may change over time, so it is important for the ordering healthcare provider, genetic counselor, and patient to keep in contact regarding this result.



\*Data on file, Quest Diagnostics 2022.

## Options for managing cancer risk

Guidelines for cancer prevention and early detection are evolving. A referral to an appropriate specialist may be considered. For more information, see the “Additional resources” section on page 4. Each individual’s gender, age, medical history, family history, quality of life goals, reproductive desires, general health status, and other medical information should be taken into account when developing a medical management plan.

	Considerations for cancer prevention/early detection	Age to begin	Frequency
<b>Parathyroid</b>	Serum calcium	At diagnosis	Annual
<b>Neuroendocrine pancreatic tumors</b>	Biochemical evaluation (ex: serum insulin and C-peptide)	As clinically appropriate	—
	Consider abdominal/pelvic CT or MRI	As symptoms indicate	Every 1-3 years
	Consider serial EUS	As clinically appropriate	—
<b>Pituitary Tumors</b>	Pituitary or sella MRI with contrast	At diagnosis	Every 3-5 years
	Biochemical evaluation (ex: serum IGF-1, prolactin, LH/FSH, and TSH)	As clinically appropriate	—
<b>Bronchial/Thymic tumors</b>	Chest CT with contrast and abdominal/pelvic multiphasic CT or MRI	Consider at time of diagnosis	Every 1-3 years
	Biochemical evaluation (ex: urine or plasma 5-HIAA)	As clinically indicated	—

Source: National Comprehensive Cancer Network®. NCCN Clinical Practice Guidelines in Oncology. Neuroendocrine and Adrenal Tumors V4.2021. [www.NCCN.org](http://www.NCCN.org)

## What this result means for family members

Family members may have the same *MEN1* variant that was identified in this individual. Parents, brothers, sisters, and children may each have a 50% chance of having the same variant. Other blood relatives also have an increased risk for the variant. It is important to share these test results with family members to allow each of them to decide if they want to be tested. Some family members may only need testing for this one *MEN1* variant, while other relatives may need a more comprehensive test with multiple genes. A genetic counselor or other healthcare provider can help determine the most appropriate testing options.

## Reproductive information

Individuals interested in family planning should speak to their doctor and/or genetic counselor to discuss reproductive options. This may include discussion of prenatal diagnosis or pre-implantation genetic testing.

### Risk assessment and counseling: an important first step

A genetic counselor or other qualified healthcare professional can help explain test results and what they mean for a patient and family members. A team of specialized Quest genetic counselors or clinical geneticists are available to speak with healthcare providers about test results by calling 1.866.GENE.INFO (1.866.436.3463). Patients can access a directory of independent genetic counselors at [FindAGeneticCounselor.com](https://www.findageneticcounselor.com).





## Creating a plan: a checklist for patients

- Get a copy of your genetic test results.
- Talk with your healthcare provider about what this result means and the things you can do to manage your risk.
- Ask your healthcare provider if additional genetic testing may benefit you.
- Share your test results with your family members and give them a copy. Their healthcare provider will need this information in order to provide them with the most accurate risk assessment.
- Talk with your healthcare provider regularly so that you know about any important changes in genetic testing and cancer screening options. Be sure to let him/her know of any changes in your family history, including family members' genetic test results.
- Consider talking to a genetic counselor about your results.

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## Research opportunities

Prospective Registry of MultiPlex Testing (PROMPT) [PromptStudy.info](http://PromptStudy.info)

GenomeConnect: The ClinGen Patient Portal  
[GenomeConnect.org](http://GenomeConnect.org)

## Additional resources

National Comprehensive Cancer Network Clinical Practice Guidelines in Oncology (NCCN Guidelines®): Neuroendocrine and Adrenal Tumors [NCCN.org](http://NCCN.org)

American Multiple Endocrine Neoplasia Support  
[amensupport.org](http://amensupport.org)

International Neuroendocrine Cancer Alliance  
[incalliance.org](http://incalliance.org)

Quest Hereditary Cancer Testing Solutions  
[QuestHereditaryCancer.com](http://QuestHereditaryCancer.com)

Genetic Information Nondiscrimination Act (GINA) [GINAhelp.org](http://GINAhelp.org)

National Society of Genetic Counselors  
[FindAGeneticCounselor.com](http://FindAGeneticCounselor.com)

This information is not a substitute for medical advice, diagnosis, or treatment. The diagnosis or treatment of any disease or condition may be based on personal history, family history, symptoms, a physical examination, laboratory test results, and other information considered important by a healthcare provider. Always talk with a healthcare provider about the meaning of genetic test results and before stopping, starting or changing any medication or treatment.

The classification and interpretation of the variant(s) identified reflect the current state of Quest Diagnostics' understanding at the time of this report. Variant classification and interpretation are subject to professional judgment, and may change for a variety of reasons including, but not limited to, updates in classification guidelines and availability of additional scientific and clinical information. This test result should be used in conjunction with the healthcare provider's clinical evaluation. Inquiry regarding potential changes to the classification of the variant is strongly recommended prior to making any clinical decision. For questions regarding variant classification updates, please call Quest Diagnostics at 1.866.GENE.INFO (1.866.436.3463) to speak to a genetic counselor or laboratory director, or visit [QuestDiagnostics.com/VariantIQ](http://QuestDiagnostics.com/VariantIQ).

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