Gastrointestinal Carcinoid Tumor Causes, Risk Factors, and Prevention

Risk Factors

A risk factor is anything that affects your chance of getting a disease such as cancer. Learn more about the risk factors for gastrointestinal carcinoid tumors.

- What Are the Risk Factors for Gastrointestinal Carcinoid Tumors?
- Do We Know What Causes Gastrointestinal Carcinoid Tumors?

Prevention

At this time, there is no known way to prevent gastrointestinal carcinoid tumors. Since smoking might increase the risk of carcinoid tumors of the small intestine, not starting or quitting smoking may reduce the risk for this disease.

- About Gastrointestinal Carcinoid Tumors
- Causes, Risk Factors, and Prevention
- Early Detection, Diagnosis, and Staging
- Treatment
- After Treatment

What Are the Risk Factors for Gastrointestinal Carcinoid Tumors?

A risk factor is anything that affects your chance of getting a disease such as cancer. For example, exposure to strong sunlight is a risk factor for skin cancer, while smoking
is a risk factor for cancer of the lung and several other cancers.

But risk factors don’t tell us everything. Someone without any known risk factors can still develop cancer. And someone can have a risk factor, but still not get the disease. Only a few risk factors for gastrointestinal (GI) carcinoid tumors are known.

### Genetic syndromes

#### Multiple endocrine neoplasia, type I

This is a rare condition caused by inherited defects in the gene MEN1. People with this syndrome have a very high risk of getting tumors of 3 glands: the pituitary, parathyroid, and pancreas. They also have an increased risk of carcinoid tumors. Some studies estimate that inherited mutations of the MEN1 gene are responsible for about 10% of carcinoid tumors. Most of these are gastric (stomach) carcinoids. Children have a 50/50 chance of inheriting this syndrome from an affected parent.

If your family is affected by the MEN1 syndrome, you might want to talk to your doctor about the pros and cons of getting tested for it. Although the gene that causes tumors in people with the MEN1 syndrome has been found, genetic testing for MEN1 is not widely available. Because the results of genetic testing are not always clear cut, it is important that the test is done along with genetic counseling to help you make sense of the results.

#### Neurofibromatosis type 1

This disease often runs in families and is characterized by many neurofibromas (benign tumors that form in nerves under the skin and in other parts of the body). It is caused by defects in the NF1 gene. Some people with this condition also develop neuroendocrine tumors of the small intestines.

#### Other genetic syndromes

Neuroendocrine tumors are also more common among people with tuberous sclerosis complex and von Hippel Lindau disease. Tuberous sclerosis complex can be caused by a defect in the TSC1 or TSC2 gene. People with this condition can also develop tumors of the heart, eyes, brain, lungs, and skin. People with von Hippel Lindau disease have an inherited tendency to develop blood vessel tumors of the brain, spinal cord, or retina, as well as kidney cancer. It is caused by changes in the VHL gene.
To find out more on being tested for genetic syndromes, see Genetic Testing: What You Need to Know.

**Race and gender**

Carcinoid tumors are more common among African Americans than whites. Outcomes are also not as good for African Americans. Researchers do not yet know why. Carcinoid tumors are also slightly more common in women than men.

**Other stomach conditions**

People with certain diseases that damage the stomach and reduce the amount of acid it makes have a greater risk of developing stomach carcinoid tumors, but their risk for carcinoid tumors of other organs is not affected.

**Factors with uncertain or unproven effects**

**Smoking**

Smoking may increase the risk of getting a carcinoid tumor of the small intestine, according to some research. But further studies are needed to confirm this.

**Diet**

The risk of developing GI carcinoid tumors does not appear to be increased or decreased by any specific foods.

- References

See all references for Gastrointestinal Carcinoid Tumor

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Do We Know What Causes Gastrointestinal Carcinoid Tumors?

Researchers have made great progress in understanding how certain changes in DNA can cause normal cells to become cancerous. DNA is the chemical in each cell that carries our genes, which control how our cells function. We look like our parents because they are the source of our DNA. But DNA affects more than the way we look.

Some genes control when our cells grow and divide. Certain genes that help cells grow, divide, and stay alive are called oncogenes. Genes that slow down cell division or cause cells to die at the right time are called tumor suppressor genes. Cancers can be caused by DNA changes that turn on oncogenes or turn off tumor suppressor genes.

Changes in 2 tumor suppressor genes are responsible for many inherited cases of neuroendocrine tumors and neuroendocrine cancers. Most inherited cases are due to changes in the MEN1 gene. A smaller number are caused by inherited changes in the NF1 gene.

Most neuroendocrine tumors and neuroendocrine cancers are caused by sporadic changes (mutations) in oncogenes or tumor suppressor genes. Mutations are called sporadic if they occur after a person is born, rather than having been inherited. The mutations that cause carcinoid tumors often affect the MEN1 gene, the same gene responsible for most familial neuroendocrine tumors and neuroendocrine cancers. But not much is known about exactly what causes these gene changes.

Doctors do know that carcinoid tumors start out very small and grow slowly. When patients have parts of their stomach or small intestine removed to treat other diseases, taking a close look under the microscope often shows small groups of neuroendocrine cells that look like tiny carcinoids. Researchers still do not know why some stay small but others grow large enough to cause symptoms.

- References
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Can Gastrointestinal Carcinoid Tumors Be Prevented?

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- References

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