

# Pancreatic Cancer

## Endocrine Pancreatic Cancer

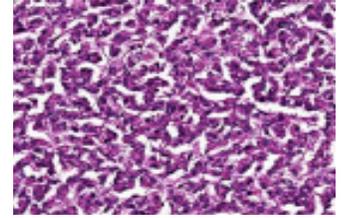
### What is endocrine pancreatic cancer?

Endocrine pancreatic cancer, also known as islet cell cancer, is a rare cancer. Only about 5 percent of the more than 43,000 annual cases of pancreatic cancers begin in the islet cells. When islet cells become *neoplastic*, they may make too much insulin and other types of hormones. Different types of endocrine pancreatic cancer have different names. The three most common types are:

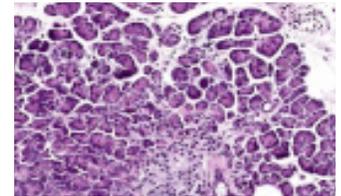
- **Gastrinoma**, which makes large amounts of the gastrin hormone, causing increased stomach acid and leading to ulcers.
- **Insulinoma**, which makes too much insulin, causing the body to store sugar rather than burn it for energy. Insulinoma can cause *hypoglycemia* (low blood sugar levels).
- **Glucagonoma**, which produces too much of the glucagons hormone, causing too much blood sugar, resulting in a condition called hyperglycemia.

### Who is most likely to have endocrine pancreatic cancer?

Endocrine pancreatic cancer is more common among men and African-Americans. Risk factors include smoking, long-standing diabetes, chronic pancreatitis, and certain hereditary conditions including hereditary pancreatitis, multiple endocrine neoplasia type 1 syndrome, hereditary nonpolyposis colon cancer (HNPCC; Lynch syndrome), von Hippel-Lindau syndrome, ataxia-telangiectasia, and the familial atypical multiple mole melanoma syndrome. Other risk factors include a family history of pancreatic cancer, older age, and obesity. Exposure to certain pesticides, dyes, or chemicals related to gasoline is another risk.



Insulinomas are composed of cube-like cells often arranged in a ribbon-like pattern.



Normal pancreas cells.

### Definitions

#### Endocrine:

Relating to the endocrine glands and the hormones, such as insulin, which are secreted by those glands.

#### Islet cells:

Pancreatic cells that produce insulin and other hormones.

#### Malignant:

Cancerous and capable of spreading.

#### Pathologist:

A physician who examines tissues and fluids to diagnose disease in order to assist in making treatment decisions.

### What characterizes endocrine pancreatic cancer?

Endocrine pancreatic cancer is difficult to detect early because its symptoms are similar to other illnesses and because the pancreas is hidden behind other organs. Often, this type of cancer is not detected until it has spread. Symptoms include abdominal pain, diarrhea, chronic fatigue, fainting, or weight gain without eating too much. These symptoms, coupled with the risk factors described earlier, warrant a trip to see a doctor as soon as possible.

### How does the pathologist diagnose endocrine pancreatic cancer?

Your primary care physician will order *blood and urine tests* for the pathologist to examine for the amounts of endocrine hormones in the body. Your medical team also may order imaging tests such as *chest x-rays; CT, PET or MRI scans; or endoscopic ultrasound (EUS)* to view inside the body.

*Laparoscopy* allows physicians to view inside the body using a thin, lighted tube inserted through small incisions in the abdominal wall. *Endoscopic retrograde cholangiopancreatography (ERCP)* examines the bile ducts for narrowing or blockages sometimes associated with pancreatic cancer. *Biopsy specimens*, or tissue samples, can be gathered during these procedures.

### What else does the pathologist look for?

The pathologist reviews the biopsy specimens and the results of all tests to make a diagnosis. If cancer is found, the pathologist will determine the *stage* of the cancer. Stage 1 endocrine pancreatic cancers are small and confined to the pancreas, and stage 4 tumors have spread beyond areas near the pancreas. Stages 2 and 3 describe conditions in between these two extremes. The chance of recovery depends on the type of endocrine pancreatic cancer, how far the cancer has spread, and your overall health.

For more information, go to [www.cancer.gov](http://www.cancer.gov) (National Cancer Institute) or [www.cancer.org](http://www.cancer.org) (American Cancer Society). Type the keywords *pancreatic cancer* or *islet cell cancer* or into the search box.



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