

**PANCREATIC NEUROENDOCRINE TUMORS FACT SHEET**

Neuroendocrine tumors (NETs) are believed to arise from cells that may produce and secrete a variety of hormones that regulate bodily functions<sup>1</sup>. There are many types of NETs that can occur throughout the body; however, most are found in the gastrointestinal (GI) tract or pancreas<sup>2</sup>. Neuroendocrine tumors originating in the pancreas are called pancreatic NETs, also sometimes referred to as islet cell tumors<sup>3</sup>.

Pancreatic NETs are less common than other types of cancer. It is different from pancreatic exocrine cancer, which is generally referred to as pancreatic cancer<sup>3</sup>.

Pancreatic NETs can be categorized as either secretory or non-secretory (also known as functional or nonfunctional)<sup>4</sup>. Patients with secretory pancreatic NETs may experience clinical symptoms due to the excess release of hormones from the tumor cells<sup>5</sup>. For example, some pancreatic neuroendocrine cells may secrete excess gastrin, a hormone that causes the stomach to produce too much acid, leading to stomach ulcers which can cause pain, nausea and decreased appetite<sup>3</sup>.

**Diagnosis and Management**

At the time of diagnosis, the majority of pancreatic NET patients have advanced disease, meaning the cancer has spread to other parts of the body and has become more difficult to manage<sup>5,6</sup>.

There is no routine screening for pancreatic NETs<sup>7</sup>; however, lab tests and imaging tests, such as abdominal computerized axial tomography scans (CT scans) and abdominal or endoscopic ultrasounds and biopsies are used to detect and diagnose pancreatic NETs. Blood tests examining the levels of certain pancreatic hormones are also used to help diagnose pancreatic NETs<sup>3,4</sup>.

The management of pancreatic NETs depends on a number of factors including the type of cancer cell, where the tumor is found in the pancreas, whether the tumor has spread to more than one place in the pancreas or to other parts of the body and the patient's general health<sup>4</sup>.

**Signs and Symptoms**<sup>4</sup>

Different types of pancreatic NETs have different signs and symptoms that can be caused by the growth of the tumor and/or hormones the tumor makes.

Symptoms include, but are not limited to:

- Diarrhea
- Abdominal pain
- Persistent stomach ulcers
- Skin rashes
- Hypoglycemia
- Gallstones

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## References

1. National Cancer Institute. Dictionary of Cancer Terms: neuroendocrine tumor. Available at: <http://www.cancer.gov/dictionary>. Accessed March 2011.
2. Yao, et al. One Hundred Years After "Carcinoid:" Epidemiology of and Prognostic Factors for Neuroendocrine Tumors in 35,825 Cases in the United States. *Journal of Clinical Oncology*. June 20 2009; vol. 26, number 18.
3. American Cancer Society Detailed Guides. Pancreatic Cancer. Available at <http://www.cancer.org/Cancer/PancreaticCancer/DetailedGuide/pancreatic-cancer-what-is-pancreatic-cancer>. Accessed March 2011.
4. National Cancer Institute. Islet Cell Tumors (endocrine Pancreas) Treatment (PDQ). Available at <http://www.cancer.gov/cancertopics/pdq/treatment/isletcell/Patient>. Accessed March 2011.
5. Halfdanarson, et al. Pancreatic neuroendocrine tumors (PNETs): incidence, prognosis and recent trend toward improved survival. *Annals of Onc* 19: 1727-1733, 2008.
6. National Library of Medicine and the National Institutes of Health. Pancreatic islet cell tumor. Available at <http://www.nlm.nih.gov/medlineplus/ency/article/000393.htm>. Accessed March 2011.
7. Modlin, et al. Priorities for Improving the Management of Gastroenteropancreatic Neuroendocrine Tumors. *J Natl Cancer Inst* 2008;100:1282-1289.