



Patient Information

Facing Pancreatic Cancer

The pancreas is a pear-shaped organ that is located between the stomach and spine. It contains two different glands: the *exocrine* (**ek**-suh-krin) gland, which makes a substance called pancreatic juice that helps the body digest food, and the *endocrine* (**en**-duh-kren) gland, which produces insulin and other hormones that help the body use and store energy from food.

Pancreatic cancer forms when abnormal cells in the pancreas begin to grow out of control. Unfortunately, this cancer spreads quickly and usually is not found until it is in the advanced stages. Even so, there are several treatment options that may extend life for people with pancreatic cancer and improve their quality of life.

How do I know if I'm at risk?

About 20% to 30% of pancreatic cancer cases are linked to cigarette smoking, and the risk of getting this cancer is two to three times higher in smokers. Other significant risk factors for pancreatic cancer are older age, male gender, being very overweight or sedentary, eating a high fat diet that includes red and processed meats, and having a family history of the disease. Type 2 diabetes is common in people who have pancreatic cancer, and sometimes the cancer can cause diabetes. Chronic pancreatitis, a long-term infection of the pancreas, also is linked with this cancer.

What are the warning signs?

The signs and symptoms of pancreatic cancer often do not appear until the cancer is in its later stages. These include a yellowing of the eyes and skin, called *jaundice*

(**jawn**-dis); abdominal and back pain; poor appetite; weight loss; depression; fatigue; digestive problems; an enlarged gallbladder; blood clots; and diabetes. Many of these symptoms can be caused by other medical problems, so it's important for a doctor to examine you thoroughly if you are experiencing any of them.

What tests do I need?

If, after reviewing your medical history and performing a physical examination, your doctor suspects that you might have pancreatic cancer, he or she will order imaging tests to gather more information. A number of imaging tests can be used to help diagnose pancreatic cancer, as well as to determine how far the disease has progressed and which treatments may work best—a type of evaluation known as “staging.”

One of the most useful tests for diagnosing and staging pancreatic cancer is a computed tomography, or CT, scan. During this procedure, you lie still on a table that slides into a large, round machine that takes multiple x-rays. Sometimes, a special dye—which is either swallowed or injected into your vein—is used to outline your organs more clearly. Your doctor also may perform a biopsy, in which a needle is used to remove a small sample of tumor cells from your pancreas, during the CT scan. Biopsy is the best way to confirm cancer.

An *endoscopic* (**en**-duh-**skah**-pic) ultrasound is another way to diagnose pancreatic cancer. For this test, you are given drugs to make you sleepy and then an ultrasound probe attached to a thin tube, or *endoscope* (**en**-duh-skope), is inserted into your mouth or nose and guided into



your intestinal tract. The doctor can use the probe to check for tumors and take a biopsy. A similar procedure uses an endoscope to inject dye into the pancreatic area, after which x-rays are taken and a biopsy can be collected.

Other imaging tests include magnetic resonance imaging, or MRI (which uses a magnetic field and radio waves to create a picture), and *positron emission tomography* (**poz**-uh-tron ee-**mish**-uhn toh-**mahg**-ruh-fee), or PET, scan (which uses a type of sugar that is injected into your body to help pinpoint where cancer may have spread).

Several blood tests also are available for diagnosing and staging pancreatic cancer, including ones to check for substances released by tumors—called tumor markers.

How can I avoid the problem?

Since smoking is one of the most significant risk factors for pancreatic cancer, not smoking is the best way to prevent it. It's also a good idea to maintain a healthy weight, get regular exercise, and eat a well-balanced diet of fruits, vegetables, whole grains, and lean proteins.

How is it treated?

The three main options for treating pancreatic cancer are surgery, radiation, and *chemotherapy* (key-mo-**ther**-uh-pee). When possible, surgery is used to remove all or part of the pancreas along with part of the stomach, small intestine, and lymph nodes. The remaining parts of the pancreas, stomach, and intestines are reconnected to allow digestion of food. This surgery carries a risk of bleeding and infection and requires a long hospital stay, but it offers the best chance for a cure. When the cancer is too widespread to be removed completely, *palliative* (**pal**-yuh-tiv) surgery may be offered to relieve symptoms.

Radiation therapy uses high-energy x-rays to kill cancer cells. It may be used after surgery to kill any cancer cells remaining in the pancreas. Chemotherapy uses drugs administered by mouth or by needle through a vein to kill cancer cells and may be given before or after surgery. It is used for patients with disease that has spread to many other parts of the body. Radiation therapy can be combined with chemotherapy for patients who can't be treated with surgery.

Clinical trials study the effects and safety of new treatments, and you may want to talk to your doctor about participating in one. There is no guarantee that a clinical trial will offer a cure, but these studies are monitored closely and allow access to treatments not yet approved by the FDA.

All of these treatments have unwanted effects and may not cure your cancer, so your doctor should explain clearly the risks and benefits of each before you make a choice. When treatment no longer is working or desired, *hospice* (**hahs**-puhs) care may be an option. Hospice care is a combination of services that focus on pain relief and symptom control for patients in the terminal stage of illness. Hospice also provides support for patients and loved ones.

For more information, visit the pancreatic cancer page of the National Cancer Institute (<http://www.nci.nih.gov/cancertopics/types/pancreatic>). ●

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