CONDITION

Pancreatic cancer

Pancreatic cancer is cancer that begins when cells in the pancreas grow out of control.

WHAT IT IS
Cancer arising from cells in the pancreas

BODY SYSTEM
Digestive system

MAIN SYMPTOMS
Jaundice, upper abdominal pain, weight loss, appetite loss

WHAT CAUSES IT
DNA changes; exact trigger usually unknown

HOW IT IS DIAGNOSED
Imaging scans and usually a biopsy

MAIN TREATMENT
Surgery, chemotherapy, radiotherapy, and supportive care

CAN IT BE CURED?
Sometimes - when removable with surgery

IS IT AN EMERGENCY?
Sometimes - jaundice with fever needs urgent care

LONG-TERM OUTLOOK
Often serious, especially when found after spreading

Overview

Pancreatic cancer begins when cells in the pancreas grow out of control. The pancreas is an organ behind the stomach. It makes digestive juices that help break down food and hormones, including insulin, that control blood sugar.

Most pancreatic cancers start in cells lining the small ducts that carry digestive juices. This is usually called pancreatic ductal adenocarcinoma. Less common pancreatic neuroendocrine tumours begin in hormone-producing cells and may behave differently. Their treatment is also different.

Pancreatic cancer matters because it may not cause clear symptoms at first. The pancreas is deep inside the abdomen, so a small tumour cannot usually be felt. As a result, some cancers are found only after they have grown into nearby structures or spread elsewhere.

Treatment and outlook are strongly influenced by where the cancer is, whether it has spread, and whether surgery can remove it completely.

Symptoms

Early pancreatic cancer may cause no symptoms. When symptoms develop, they can be vague and may have many other causes.

Possible symptoms include:

Jaundice can develop when a tumour blocks the bile duct. This tube normally carries bile, a digestive fluid, from the liver into the small bowel.

These symptoms do not automatically mean that you have pancreatic cancer. However, persistent or unexplained symptoms should be assessed rather than watched indefinitely.

- Yellow skin or yellowing of the whites of the eyes, called jaundice
- Dark urine, pale stools, or itchy skin
- Pain in the upper abdomen, sometimes spreading into the back
- Unplanned weight loss or loss of appetite
- Nausea, vomiting, indigestion, or bloating
- Changes in bowel movements, including greasy or difficult-to-flush stools
- Tiredness or weakness
- New diabetes, or diabetes that becomes harder to control
- A blood clot, especially in a leg

Causes and risk factors

Pancreatic cancer develops after changes in a cell's DNA allow it to grow and divide without normal control. In most people, it is not possible to identify why these changes happened.

The likelihood of pancreatic cancer rises with age. Other established or suspected risk factors include:

Inherited conditions linked with pancreatic cancer include hereditary pancreatitis, Lynch syndrome, Peutz-Jeghers syndrome, and inherited changes in genes such as BRCA1, BRCA2, PALB2, and CDKN2A.

Having a risk factor does not mean that you will develop pancreatic cancer. Many people with

risk factors never develop it, while some people diagnosed with it have no known risk factors.

Pancreatic cancer is not contagious. It cannot be passed between people through contact, food, or bodily fluids.

- Smoking
- Long-term inflammation of the pancreas, called chronic pancreatitis
- Excess body weight
- Diabetes, particularly when it develops later in life
- A close family history of pancreatic cancer
- Certain inherited genetic changes or cancer syndromes

Diagnosis

Your assessment may begin with questions about symptoms, medical history, smoking, diabetes, and cancer in your family. An examination may look for jaundice, abdominal tenderness, weight loss, or swelling.

Blood tests can check liver function, blood cell counts, kidney function, and blood sugar. A marker called CA 19-9 may be measured. This marker cannot confirm or exclude pancreatic cancer because it can be raised for other reasons and is not elevated in everyone with the condition.

A detailed CT scan is commonly used to examine the pancreas, nearby blood vessels, and other organs. MRI or magnetic resonance cholangiopancreatography, known as MRCP, may provide more detail about the pancreas and bile ducts.

An endoscopic ultrasound uses a thin flexible tube passed through the mouth into the stomach and small bowel. An ultrasound probe on the tube creates close images of the pancreas. A needle can also collect a tissue sample.

Looking at a tissue sample under a microscope is called a biopsy. A biopsy usually confirms the type of cancer before chemotherapy or other non-surgical treatment. In some clearly removable cancers, surgery may take place without a biopsy first.

Further scans or, less commonly, keyhole surgery may check whether the cancer has spread. The results are used to determine its stage and whether it is removable, locally advanced, or metastatic. Metastatic means that it has spread to distant organs.

Treatment and management

Treatment is planned according to the cancer's type, location, stage, relationship to major blood vessels, and your overall health. A team may include surgeons, cancer specialists, radiologists, dietitians, specialist nurses, and pain or supportive-care professionals.

Surgery offers the main chance of cure, but it is only possible when the cancer can be removed safely and has not spread to distant organs. Operations include:

These are major operations. Recovery can take months, and some people need help with digestion or blood sugar afterward.

Chemotherapy uses medicines that travel through the body to damage cancer cells. It may be given before surgery to shrink or control a tumour, after surgery to reduce the risk of recurrence, or as the main treatment when surgery is not possible.

Radiotherapy uses high-energy radiation aimed at the tumour. It may be considered in selected situations, often alongside chemotherapy or to relieve symptoms. It is not required for everyone.

Some cancers have genetic or molecular features that affect treatment choices. Testing an inherited blood or saliva sample, or testing the tumour itself, may identify an option such as targeted treatment. These treatments only help specific groups of people.

When the cancer cannot be removed, treatment may still slow its growth and reduce symptoms. Supportive or palliative care can be provided alongside cancer treatment from an early stage. It focuses on comfort, function, nutrition, emotional support, and planning around what matters to you.

Other symptom treatments may include:

- A Whipple procedure, which removes the head of the pancreas and parts of nearby organs
- Distal pancreatectomy, which removes the body or tail of the pancreas
- Total pancreatectomy, which removes the whole pancreas
- A stent to reopen a blocked bile duct
- Pain medicines or a procedure to block pain signals from nearby nerves
- Pancreatic enzyme capsules to help digest food
- Insulin or other support for diabetes
- Anti-sickness treatment and nutrition support

Complications

A tumour may block the bile duct, causing jaundice. A blocked or infected bile duct can cause fever, chills, worsening pain, or confusion and needs urgent treatment.

Pancreatic cancer can also interfere with digestion. Too few pancreatic enzymes may lead to weight loss, diarrhoea, bloating, and pale or oily stools. Enzyme replacement can improve food absorption.

Other possible complications include diabetes, bowel or stomach blockage, fluid collecting in the abdomen, and blood clots. Cancer and its treatment may also cause pain, tiredness, reduced appetite, and loss of muscle strength.

Complications are not inevitable. Many can be treated or eased when they are identified.

Prevention

There is no certain way to prevent pancreatic cancer, and inherited genetic changes cannot be prevented.

Not smoking is the clearest avoidable step. If you smoke, stopping reduces several cancer and cardiovascular risks, even after many years of smoking. Maintaining a weight that is healthy for you may also lower risk.

Routine screening is not recommended for most people because available tests have not been shown to provide more benefit than harm in people at average risk.

Some people with a strong family history or a relevant inherited genetic change may be offered monitoring through a specialist programme. This can involve MRI and endoscopic ultrasound. Genetic counselling can help clarify whether testing or surveillance is appropriate for a family.

Living with it and what to expect

Pancreatic cancer often requires repeated appointments, scans, blood tests, and treatment decisions. What happens over months and years is shaped mainly by the stage of the cancer, whether it can be removed, its response to treatment, and your general health.

After surgery, digestion may change because less pancreatic tissue remains. Pancreatic enzymes may be needed with meals and snacks. If insulin production falls, diabetes may develop or become harder to manage. Follow-up usually watches for recovery problems and signs that the cancer has returned.

Some people remain free of cancer after surgery and chemotherapy, but recurrence is possible. When cancer is advanced, treatment usually aims to control it rather than cure it. Periods of stable symptoms can be followed by progression, and treatment may need to change or stop.

Eating small, frequent meals may be easier than large meals. A dietitian can help with weight loss, enzyme use, and food choices without imposing unnecessary restrictions.

Daily life may include tiredness, pain, uncertainty, and changes in work or family roles. Practical support, counselling, rehabilitation, and palliative care can help you stay active and comfortable for as long as possible.

When to get medical help

Arrange a prompt medical assessment if you develop unexplained jaundice, ongoing upper abdominal or back pain, unplanned weight loss, persistent appetite loss, or lasting changes in your stools. These symptoms often have causes other than cancer, but they should be checked.

Contact your cancer team promptly if known symptoms worsen, treatment side effects are difficult to manage, you cannot eat or drink enough, or pain is no longer controlled.

Seek urgent medical care for:

Sudden breathing difficulty, collapse, or severe chest pain may indicate a blood clot in the lungs and requires emergency care.

- Jaundice with fever, shaking chills, worsening pain, or confusion
- Repeated vomiting or signs of severe dehydration
- A newly swollen, painful, or red leg
- Sudden shortness of breath, chest pain, coughing blood, or collapse

Common questions

Is pancreatic cancer curable?

Sometimes. Cure is most likely when the cancer is found before it has spread and surgery can remove it completely. Chemotherapy is commonly used around surgery. Many pancreatic cancers are not removable when diagnosed, and treatment then focuses on control and symptom relief.

What are the first signs of pancreatic cancer?

There may be no early signs. Possible first symptoms include jaundice, upper abdominal or back pain, unexplained weight loss, appetite loss, dark urine, pale stools, or newly developed diabetes. None of these symptoms is specific to pancreatic cancer.

Can a blood test detect pancreatic cancer?

No blood test can reliably diagnose or rule it out. CA 19-9 can support assessment and may help monitor treatment, but it can be normal in pancreatic cancer or raised by non-cancerous conditions. Imaging and usually a biopsy are needed for diagnosis.

How quickly does pancreatic cancer spread?

There is no single timeline. Some tumours grow or spread faster than others. Scans, biopsy findings, symptoms, and changes over time give the treatment team more useful information than a general estimate.

Is pancreatic cancer hereditary?

Most cases are not clearly inherited. However, inherited genetic changes contribute to some cases, especially when several close relatives have had pancreatic or related cancers. Genetic counselling may help if your personal or family history suggests an inherited risk.

Can you live without a pancreas?

Yes, but lifelong treatment is needed after total removal. Without a pancreas, the body cannot make enough insulin or digestive enzymes. Insulin manages blood sugar, while pancreatic enzyme capsules help the body digest and absorb food.

Sources

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