

# Pancreatitis

*National Digestive Diseases Information Clearinghouse*



National  
Institute of  
Diabetes and  
Digestive  
and Kidney  
Diseases

NATIONAL  
INSTITUTES  
OF HEALTH

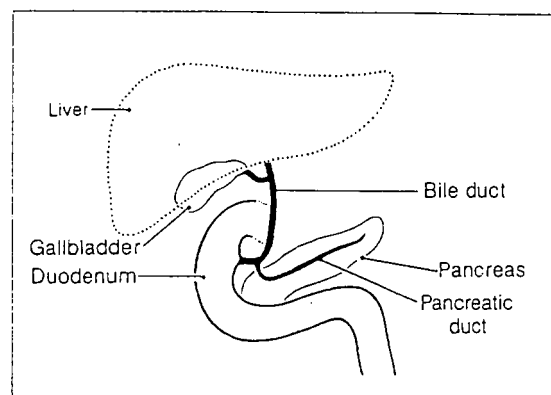
Your pancreas is a large gland behind your stomach and close to your duodenum. The pancreas secretes powerful digestive enzymes that enter the small intestine through a duct. These enzymes help you digest fats, proteins, and carbohydrates. The pancreas also releases the hormones insulin and glucagon into the bloodstream. These hormones play an important part in metabolizing sugar.

Pancreatitis is a rare disease in which the pancreas becomes inflamed. Damage to the gland occurs when digestive enzymes are activated and begin attacking the pancreas. In severe cases, there may be bleeding into the gland, serious tissue damage, infection, and cysts. Enzymes and toxins may enter the bloodstream and seriously injure organs, such as the heart, lungs, and kidney.

There are two forms of pancreatitis. The acute form occurs suddenly and may be a severe, life-threatening illness with many complications. Usually, the patient recovers completely. If injury to the pancreas continues, such as when a patient persists in drinking alcohol, a chronic form of the disease may develop, bringing severe pain and reduced functioning of the pancreas that affects digestion and causes weight loss.

## What Is Acute Pancreatitis?


An estimated 50,000 to 80,000 cases of acute pancreatitis occur in the United States each year. This disease occurs when the pancreas suddenly becomes inflamed and then gets better. Some patients have more than one attack but recover fully after each one. Most cases of acute



pancreatitis are caused either by alcohol abuse or by gallstones. Other causes may be use of prescribed drugs, trauma or surgery to the abdomen, or abnormalities of the pancreas or intestine. In rare cases, the disease may result from infections, such as mumps. In about 15 percent of cases, the cause is unknown.

## What Are the Symptoms of Acute Pancreatitis?

Acute pancreatitis usually begins with pain in the upper abdomen, that may last for a few days. The pain is often severe. It may be constant pain, just in the abdomen, or it may reach to the back and other areas. The pain may be sudden and intense, or it may begin as a mild pain that is aggravated by eating and slowly grows worse. The abdomen may be swollen and very tender. Other symptoms may include nausea, vomiting, fever, and an increased pulse rate. The person often feels and looks very sick.



About 20 percent of cases are severe. The patient may become dehydrated and have low blood pressure. Sometimes the patient's heart, lungs, or kidneys fail. In the most severe cases, bleeding can occur in the pancreas, leading to shock and sometimes death.

## How Is Acute Pancreatitis Diagnosed?

During acute attacks, high levels of amylase (a digestive enzyme formed in the pancreas) are found in the blood. Changes may also occur in blood levels of calcium, magnesium, sodium, potassium, and bicarbonate. Patients may have high amounts of sugar and lipids (fats) in their blood too. These changes help the doctor diagnose pancreatitis. After the pancreas recovers, blood levels of these substances usually return to normal.

## What Is the Treatment for Acute Pancreatitis?

The treatment a patient receives depends on how bad the attack is. Unless complications occur, acute pancreatitis usually gets better on its own, so treatment is supportive in most cases. Usually the patient goes into the hospital. The doctor prescribes fluids by vein to restore blood volume. The kidneys and lungs may be treated to prevent failure of those organs. Other problems, such as cysts in the pancreas, may need treatment too.

Sometimes a patient cannot control vomiting and needs to have a tube through the nose to the stomach to remove fluid and air. In mild cases, the patient may not have food for 3 or 4 days but is given fluids and pain relievers by vein. An acute attack usually lasts only a few days, unless the ducts are blocked by gallstones. In severe cases, the patient may be fed through the veins for 3 to 6 weeks while the pancreas slowly heals.

Antibiotics may be given if signs of infection arise. Surgery may be needed if complications such as infection, cysts, or bleeding occur. Attacks caused by gallstones may require removal of the gallbladder or surgery of the bile duct.

Surgery is sometimes needed for the doctor to be able to exclude other abdominal problems that can simulate pancreatitis or to treat acute pancreatitis. When there is severe injury with death of tissue, an operation may be done to remove the dead tissue.

After all signs of acute pancreatitis are gone, the doctor will determine the cause and try to prevent future attacks. In some patients the cause of the attack is clear, but in others further tests need to be done.

## What If the Patient Has Gallstones?

Ultrasound is used to detect gallstones and sometimes can provide the doctor with an idea of how severe the pancreatitis is. When gallstones are found, surgery is usually needed to remove them. When they are removed depends on how severe the pancreatitis is. If it is mild, the gallstones often can be removed within a week or so. In more severe cases, the patient may wait a month or more, until he improves, before the stones are removed. The CAT (computer axial tomography) scan may also be used to find out what is happening in and around the pancreas and how severe the problem is. This is important information that the doctor needs to determine when to remove the gallstones.

After the gallstones are removed and inflammation subsides, the pancreas usually returns to normal. Before patients leave the hospital, they are advised not to drink alcohol and not to eat large meals.

## What Is Chronic Pancreatitis?

Chronic pancreatitis usually follows many years of alcohol abuse. It may develop after only one acute attack, especially if there is damage to the ducts of the pancreas. In the early stages, the doctor cannot always tell whether the patient has acute or chronic disease. The symptoms may be the same. Damage to the pancreas from drinking alcohol may cause no symptoms for many years, and then the patient suddenly has an attack of pancreatitis. In more than 90 percent of adult patients, chronic pancreatitis appears to be caused by alcoholism. This is more common in men than women and often develops between 30 and 40 years of age. In other cases, pancreatitis may be inherited. Scientists do not know why the inherited form occurs. Patients with chronic pancreatitis tend to have three kinds of problems: pain, malabsorption of food leading to weight loss, or diabetes.

Some patients do not have any pain but most do. Pain may be constant in the back and abdomen, and for some patients, the pain attacks are disabling. In some cases, the abdominal pain goes away as the condition advances. Doctors think this happens because pancreatic enzymes are no longer being made by the pancreas.

Patients with this disease often lose weight, even when their appetite and eating habits are normal. This occurs because the body does not secrete enough pancreatic enzymes to break down food, so nutrients are not absorbed normally. Poor digestion leads to loss of fat, protein, and sugar into the stool. Diabetes may also develop at this stage if the insulin-producing cells of the pancreas (islet cells) have been damaged.

## How Is Chronic Pancreatitis Diagnosed?

Diagnosis may be difficult but is aided by a number of new techniques. Pancreatic function tests help the physician decide if the pancreas still can make enough digestive enzymes. The doctor can see abnormalities in the pancreas using several techniques (ultrasonic imaging, endoscopic retrograde cholangiopancreatography (ERCP), and the CAT scan). In more advanced stages of the disease, when diabetes and malabsorption (a problem due to lack of enzymes) occur, the doctor can use a number of blood, urine, and stool tests to help in the diagnosis of chronic pancreatitis and to monitor the progression of the disorder.

## How Is Chronic Pancreatitis Treated?

The doctor treats chronic pancreatitis by relieving pain and managing the nutritional and metabolic problems. The patient can reduce the amount of fat and protein lost in stools by cutting back on dietary fat and taking pills containing pancreatic enzymes. This will result in better nutrition and weight gain. Sometimes insulin or other drugs must be given to control the patient's blood sugar.

In some cases, surgery is needed to relieve pain by draining an enlarged pancreatic duct. Sometimes, part or most of the pancreas is removed in an attempt to relieve chronic pain.

Patients must stop drinking, adhere to their prescribed diets, and take the proper medications in order to have fewer and milder attacks.

## Additional Reading

Banks PA, Frey CF, Greenberger NJ. The spectrum of chronic pancreatitis. *Patient Care*. 1989; 23(9): 163-96. This review article for physicians is written in technical language. Available in medical libraries.

*Facts and Fallacies About Digestive Diseases*. 1991. This fact sheet discusses commonly held beliefs about digestive diseases, including pancreatitis and gallbladder disease. Available from the National Digestive Diseases Information Clearinghouse, Box NDDIC, 2 Information Way, Bethesda, MD 20892-3570. (301) 654-3810.

Clayman CB, ed. *The American Medical Association Encyclopedia of Medicine*. New York: Random House. 1989. Authoritative reference guide for patients with sections on irritable bowel syndrome and other disorders of the digestive system. Widely available in libraries and bookstores.

Frey CF, et al. Progress in acute pancreatitis. *Patient Care*, 1989; 23(5): 38-53. This review article for physicians is written in technical language. Available in medical libraries.

## National Digestive Diseases Information Clearinghouse

2 INFORMATION WAY  
BETHESDA, MD 20892-3570  
(301) 654-3810

The National Digestive Diseases Information Clearinghouse (NDDIC) is a service of the National Institute of Diabetes and Digestive and Kidney Diseases, part of the National Institutes of Health, under the U.S. Public Health Service. The clearinghouse, authorized by Congress in 1980, provides information about digestive diseases and health to people with digestive diseases and their families, health care professionals, and the public. The NDDIC answers inquiries; develops, reviews, and distributes publications; and works closely with professional and patient organizations and government agencies to coordinate resources about digestive diseases.

Publications produced by the clearinghouse are reviewed carefully for scientific accuracy, content, and readability. Materials produced by other sources are also reviewed for scientific accuracy and are used, along with clearinghouse publications, to answer requests.

This publication is not subject to copyright restrictions. The clearinghouse encourages users of this fact sheet to duplicate and distribute as many copies as desired.



U.S. DEPARTMENT OF HEALTH  
AND HUMAN SERVICES  
Public Health Service  
National Institutes of Health

NIH Publication No. 95-1596  
July 1992