

# A guide to the diagnosis and treatment of acute pancreatitis

Hepatobiliary and Pancreatic Services

Information for Patients

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## Introduction

The tests that you have had so far have shown that you have developed a condition called **acute pancreatitis**. This diagnosis has been made based on your clinical history (what you have told us about your symptoms) and blood tests. You may also have had other tests that have helped us to make this diagnosis.

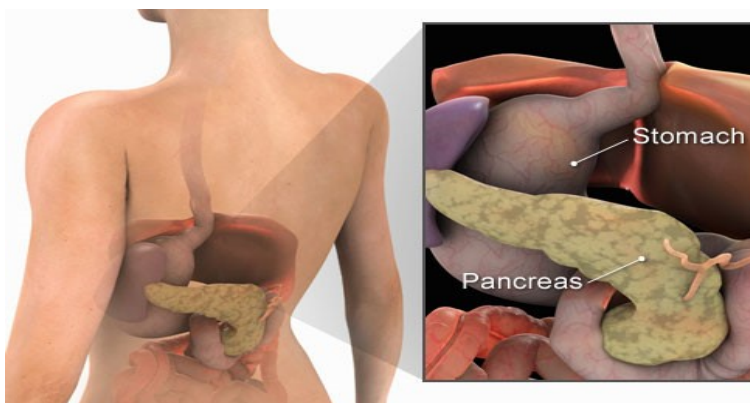
For the majority of people, acute pancreatitis is a condition which can get better after 2 to 3 days with no long-term effects. However, for some people (and it may be too early yet to tell in your case) a more severe form of the disease develops called severe acute pancreatitis (SAP). This booklet aims to tell you and your family more about this disease and what you should expect from this difficult condition.

## About the pancreas

The pancreas is a spongy, leaf-shaped gland, approximately 6 inches long by 2 inches wide, found in the back of your tummy (abdomen). It lies behind the stomach and above the small intestine.

The pancreas is divided into 3 parts: the head, the body and the tail.

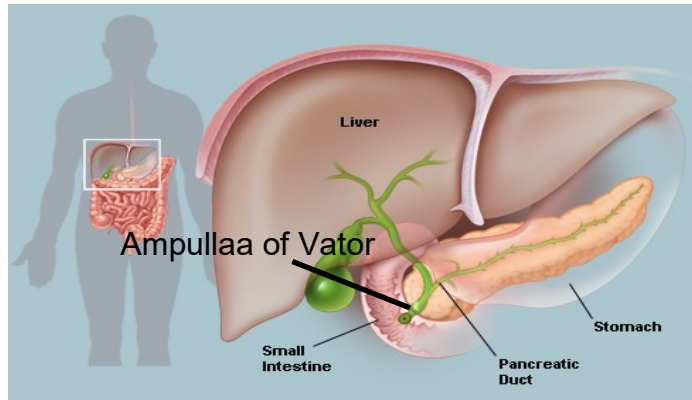
The head of the pancreas is surrounded by the first part of your small bowel (duodenum.) The body lies behind your stomach, and the tail lies next to your spleen. The pancreatic duct runs the entire length of the pancreas and it empties digestive enzymes into the small intestine from a small opening called the ampulla of Vater.



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or call 111 for non-emergency medical advice**

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2 major bile ducts come out of the liver and join to become the common bile duct. The end of the common bile duct meets the pancreatic duct at the ampulla of Vater and empties bile into the duodenum (the first part of the small intestine).



If a gallstone goes in the bile duct and stops the bile from emptying into the duodenum, you will become yellow (jaundiced) in colour and you may have itching.

## What does the pancreas do?

The pancreas is a gland that helps with digestion. It has 2 main functions:

- to produce enzymes to digest food, especially fats,
- to produce hormones insulin and glucagon to help maintain peoples blood sugar control.

Both of these functions may be affected by severe acute pancreatitis.

## What is pancreatitis?

Pancreatitis means inflammation of the pancreas. Acute pancreatitis is a sudden start of inflammation.

Symptoms of acute pancreatitis:

- pain in the abdomen, which may go through to the back.
- being sick (vomiting) or feeling sick (nausea)
- and a feeling of fullness.

You may also get a raised pulse rate, low blood pressure and an increased respiratory rate.

Inflammation in the pancreas can spread quickly and cause a body-wide response. This is known as a **systemic inflammatory response** and it is the main cause for some patients becoming very ill with acute pancreatitis. Mild pancreatitis will rapidly settle down after 2 or 3 days. However, severe acute pancreatitis is very different and will be discussed in more detail later in this booklet.

When you are first admitted to hospital, it may not be immediately obvious which form of pancreatitis (mild or severe acute) you have. We will monitor you closely and the diagnosis will be made based on a number of different tests and observations during your stay in hospital.

Diagram shows the different types of acute pancreatitis



## Acute versus chronic pancreatitis

Chronic pancreatitis is the result of 1 (or more than 1) previous attacks of acute pancreatitis and is long-term. It can occur after an attack of acute pancreatitis or can present on its own. Generally the inflammatory response in chronic pancreatitis is much less and so the amount of monitoring needed is not always as intensive as that for acute pancreatitis. Whilst chronic pancreatitis is a severe disease in its own right, it will not be discussed in detail in this booklet.

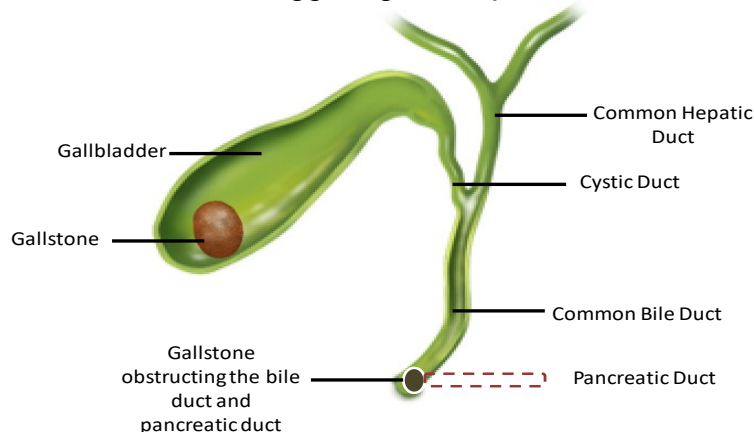
## What causes pancreatitis?

The most common cause for acute pancreatitis is gallstones. Gallstones can cause pancreatitis when a stone escapes from the gallbladder and enters the bile duct. Once in the bile duct it may block the common bile duct. This is the part of the bile duct that joins the duct which drains the pancreas. This blockage can sometimes trigger acute pancreatitis.

1. Gallstones causing pancreatitis will often cause yellowing of the skin (jaundice) as they also block the bile flow from the liver. This can be very obvious or may only be found in your blood tests.
2. Alcohol is thought to cause pancreatitis by allowing bile to come back up (reflux) into the pancreatic duct and so trigger an attack.
3. Other causes for acute pancreatitis are drugs, hereditary conditions, anatomical problems within the pancreas, small tumours within the pancreas, trauma (or surgery), conditions where the body attacks its own healthy cells (autoimmune diseases/auto immune pancreatitis), metabolic anomalies or it may happen after a procedure called an ERCP (discussed later in this booklet).

In about 20% of patients (1 in 5), the cause of their acute pancreatitis is never found.

### Gall stone triggering acute pancreatitis

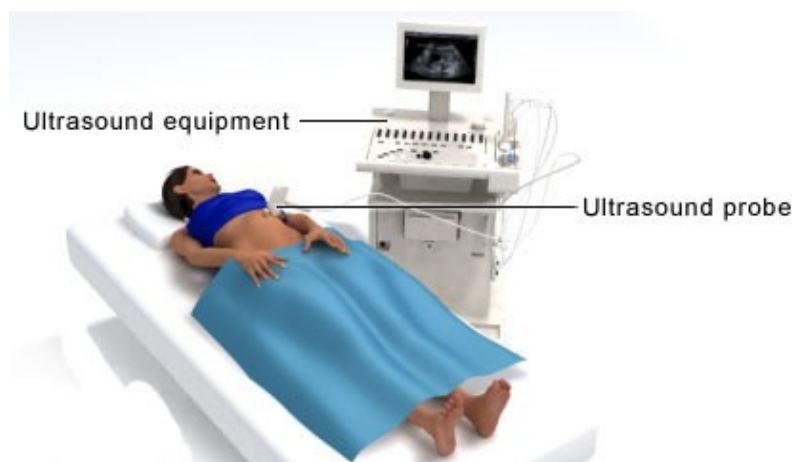


## Tests for pancreatitis

Pancreatitis is diagnosed by: taking a detailed history, thorough physical examination and blood tests. You will have some, and possibly all, of these tests (investigations):

**Blood tests:** Blood tests will be taken to check your general health and will often also confirm the diagnosis of acute pancreatitis if your blood amylase (an enzyme produced by the pancreas) is raised (elevated).

**Ultrasound:** Nearly all patients with acute pancreatitis will need an ultrasound scan of their abdomen to see if they have gallstones. If a scan looking for gallstones has been done very recently (for example in the 3 months before being admitted), it may not need to be repeated.



**CT scan:** This is more complex and time-consuming than an ultrasound but can give excellent pictures of the pancreas and other organs in your abdomen.

A machine shaped like a huge doughnut is used to take special X-rays. You will lie on a table inside the hole in the “doughnut”. The X-rays are taken as very thin slices through the area of the abdomen. Not everybody with pancreatitis needs a CT scan. It is done either to confirm the diagnosis or to assess the amount of damage to the pancreas caused by pancreatitis.

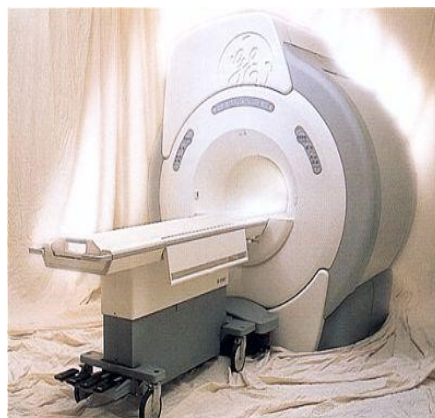
This damage is called **necrosis** or tissue that has died, and its presence and the amount of necrosis will be used to decide whether you will need further treatment. Some patients with very severe pancreatitis may need several CT scans during their hospital admission.



**MRI scan (magnetic resonance imaging):** An MRI scan is similar to a CT scan, but uses a very strong magnetic field to image the pancreas instead of X-rays.

During the test you will be asked to lie very still on a couch inside a metal cylinder, which is open at both ends. The machines are large and make a noise, which can make some people feel isolated during the procedure. The whole test may take up to 1 hour. It is completely painless, but lying inside the cylinder may make you feel confined (claustrophobic).

The MRI scan is used to examine the bile ducts and ensure that there are no stones in them. If stones are seen on your MRI scan, you may need another procedure to remove them. This procedure is known as an ERCP.



## Is pancreatitis dangerous?

Pancreatitis is a very serious condition, especially if you have severe acute pancreatitis. Whilst it is important to appreciate that the risk of death covers a wide range of individuals; the overall death rate from pancreatitis can be as high as 10% (1 in 10). For patients with severe acute pancreatitis, this risk can rise to 50% (1 in 2).



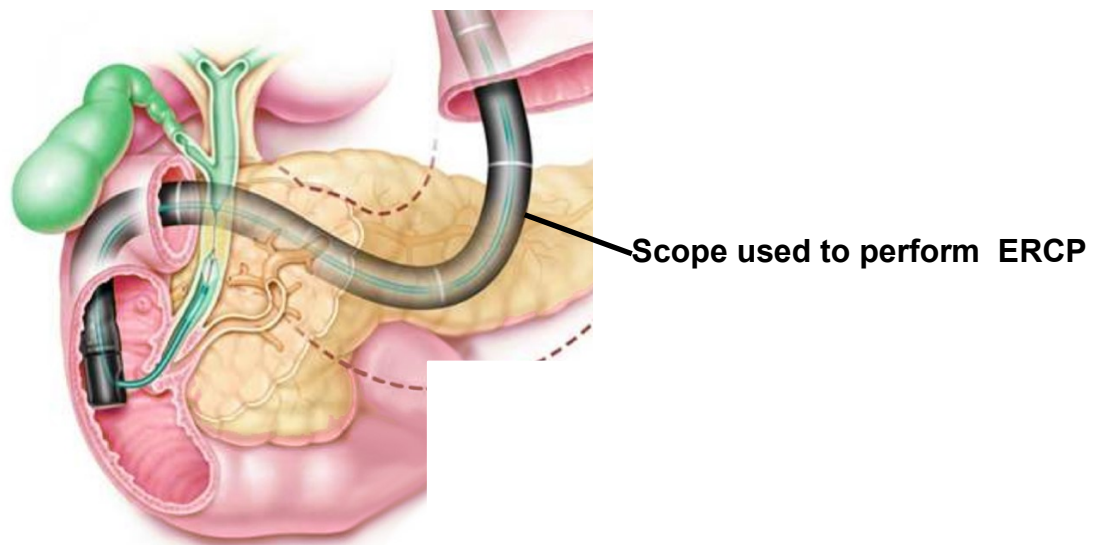
## What is the treatment for pancreatitis?

There is no specific cure for pancreatitis and the management of the condition involves giving fluids into the veins (intravenous), careful monitoring and occasionally the use of antibiotics.

Patients with severe acute pancreatitis sometimes need intensive nursing on the intensive care unit. This is because patients can develop problems with maintaining blood pressure, breathing problems, kidney problems or specific problems with other organs. These issues occur because of the body-wide impact that severe acute pancreatitis can have.

Sometimes, treatment is required to treat specific problems linked to pancreatitis or to prevent future attacks.

- **Endoscopic Retrograde cholangio-pancreatography (ERCP):** This is an endoscopic procedure performed under light sedation. It is mainly done to treat stones in the bile duct or narrowing of the bile duct caused by pancreatitis. The HPB unit in Leicester does over 1000 ERCPs every year. Normally, the procedure is very safe but problems can occur, including triggering another attack of pancreatitis. ERCP is often done before gall bladder surgery to clear any stones in the bile duct. It might be used on its own for patients who are not fit enough for surgery to prevent further attacks of pancreatitis (if gallstones were the cause).



- **Cholecystectomy:** The best way of preventing future attacks of pancreatitis caused by gall stones is to have surgery to remove the gall bladder. This can often be done as a keyhole procedure but sometimes a big cut is required. Most patients will have this operation either on their first admission to hospital or as soon as possible afterwards. For most patients, it is sensible to have gall bladder surgery as soon as possible. For some patients with more severe forms of pancreatitis it may be better for them to delay their surgery until they have fully recovered from their attack. There is good evidence that early surgery may be harmful in patients with severe acute pancreatitis.
- **Drainage of pancreatic collections:** In the later stages of their disease, it is not uncommon for patients to develop fluid collections around their pancreas. These fluid collections can cause problems with eating. They can also cause pain or can become

infected. It is sometimes necessary to drain them. This can be done by passing a special tube through the skin into the fluid collection or they can be drained into the stomach internally. A special endoscope called an EUS can be used for this. The procedure is similar to an ERCP: a telescope will be passed through the stomach and a special tube called a “stent” will be pushed through the stomach wall into the fluid collection.

## Surgery for acute pancreatitis:

As a general rule, surgery is not recommended for acute pancreatitis. Sometimes bypass operations are needed to allow patients to eat and drink normally. These operations involve “re-plumbing” the stomach to allow food to enter the gut normally. This can be done as a keyhole or open procedure which will need a larger cut (incision) to do the surgery. Other operations are occasionally needed to treat problems that the pancreatitis has caused elsewhere, such as bleeding or a hole (perforation) in the gut.

Surgery is sometimes needed to remove dead, infected pancreatic tissue. This operation can be done as a keyhole or open procedure. It is a major procedure with a very high death rate and complication rate (approaching 50%). Your clinical team will decide if this is needed based on CT scan pictures and your overall condition. It is very rare to have this surgery within the first 4 weeks of an attack of acute pancreatitis. Your clinical team will discuss this with you in detail if it is needed. If this surgery (called a necrosectomy) is needed, it is very common to need more than one procedure as it is not always possible to remove all infected tissue in one go.

## What are the complications of pancreatitis?

Pancreatitis is a very complex disease and can have many short and long-term effects as a result of the illness. The following list not exhaustive.

- **Organ failure:** As discussed previously, acute pancreatitis can cause problems not just in the pancreas but also in other organs of the body, such as the lungs, kidneys and heart. Organ failure may mean that the clinical team decides that intensive care is **needed** for further management.
- **Pseudocysts:** These are collections of fluid around the pancreas. Normally, these fluid collections resolve without treatment. However, if they are persistent or cause symptoms (such as difficulty eating, jaundice or bleeding) they may need to be drained.
- **Portal vein thrombosis:** The portal vein is an important blood vessel which runs behind the pancreas. A clot can form in this vein because of the inflammation around the pancreas. This is treated in the same way as clots in leg veins are treated; with 6 months of a blood thinning agent, such as warfarin.
- **Bleeding:** This is a rare but a very serious problem and usually occurs because of erosion which leads to the thinning of the walls of blood vessels around the pancreas. This will need emergency radiological intervention or potential surgery
- **Gastric outlet obstruction:** The outlet to the stomach can be blocked by inflammation or

by fluid collections around the pancreas. This can be treated by a short period of intravenous feeding or by surgery to bypass the blockage.

- **Bile duct stricture:** The scarring caused by acute pancreatitis may be so severe that the bile duct becomes narrowed and you may become jaundiced. This might require treatment with ERCP or with surgery.
- **Gut ischaemia:** The changes around the pancreas may be so severe that it can affect the blood supply to other organs in your abdomen. This can require surgery to correct.
- **Pancreatic fistula and ascites:** If the pancreas is damaged the ducts which drain the pancreas may also become damaged. This can lead to fluid building up inside your abdomen or if a drain has been inserted, forming a track to the wall of the tummy (called a fistula).
- **Chronic pancreatitis:** Longer term effects from acute pancreatitis can result in permanent scarring within the pancreas leading to long term pain. This may mean that referral to pain control specialists is needed.
- **Malabsorption:** The damage to the pancreas may be so severe that it cannot provide your body with sufficient enzymes needed to digest your food. This can result in weight loss, bloating and foul-smelling poo (stools). This can be corrected by taking capsules containing replacement enzymes, such as Creon™.
- **Diabetes:** A sufficiently severe attack of pancreatitis can damage the pancreas to the extent that it results in diabetes. This may need to be treated with diet, tablets or even insulin.

## Nutrition in acute pancreatitis

Eating and drinking enough both during and after pancreatitis is essential. Whilst the body can tolerate up to 7 to 10 days without food, your clinical team will advise you about your diet and food intake.

Nutrition can be provided in the following ways:

- **Oral diet:** The best and safest way of ensuring enough nutrition is to eat and drink normally. You may need to be kept 'nil by mouth' for certain procedures or investigations, but if you are able to eat you will be encouraged to do so. Sometimes nourishing drinks are also required to supplement your intake.
- **NG (naso-gastric) feeding:** Sometimes, it may be necessary to pass a small, flexible tube through the nose into the stomach or beyond. A continuous drip of nourishing feed can be delivered down this tube. This may be needed if you are unable to eat enough normally.
- **TPN or Intravenous feeding:** In severe pancreatitis in particular, the gut may not always work as normal. In this case, it may be impossible to provide enough calories into the gut and intravenous feeding may be required.



## Going home after acute pancreatitis

Once you have recovered enough from your pancreatitis, it may be possible to discharge you home. However, it is very common to have on-going problems at home.

- **Fatigue:** You should expect to feel tired. You may need a nap during the day, but try to stay out of bed as much as possible so you will sleep at night. It usually takes 6 to 12 weeks until your energy levels return to normal.
- **Loss of appetite:** It is common to have a loss of appetite. Try eating smaller meals containing each of the 4 food groups (fruits/vegetables, meat/chicken/fish, breads/grains and dairy products). If you begin to be sick (vomit) large amounts of undigested food, you will need to seek advice.
- **Alcohol:** Alcohol is an important trigger of acute pancreatitis and if alcohol was the cause of your attack you should avoid it completely for good. This may need help from your GP or the Alcohol Liaison Team, which the clinical team can refer you to. If gallstones were the cause of your pancreatitis, it would still be sensible to avoid alcohol for a period.
- **Pain:** At home, you may still have pain, and you may need to take painkillers. Please remember that some painkillers cause constipation so take extra fluids and fibre in your diet. Also remember to take the pain relief as directed by your doctor. If your pain is getting worse or is linked with other symptoms such as being sick (vomiting), jaundice, temperature or shivering you will need to get medical advice.
- **Further follow-up:** Many patients with severe acute pancreatitis will need to be seen again in clinic by a pancreatic specialist. There may also be a need for further scans as an out-patient to track the changes within the pancreas and ensure they are improving. Your clinical team will tell you if this is necessary.
- **Readmission:** Pancreatitis is a complex and unpredictable disease. You will not be discharged until the clinical team feel the time is right. If your pancreatitis gets worse or changes whilst you are at home you may need to be readmitted. Please contact your GP or the Nurse Specialist, if you feel that you are struggling with:
  - eating.
  - amount you are drinking (fluid intake).
  - being sick (vomiting).
  - excessive pain.
  - jaundice.
  - weight loss.

## Contact details

If you have any questions please call the switchboard on 0300 303 1573 and ask for the Hepatobiliary and Pancreatic Service

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