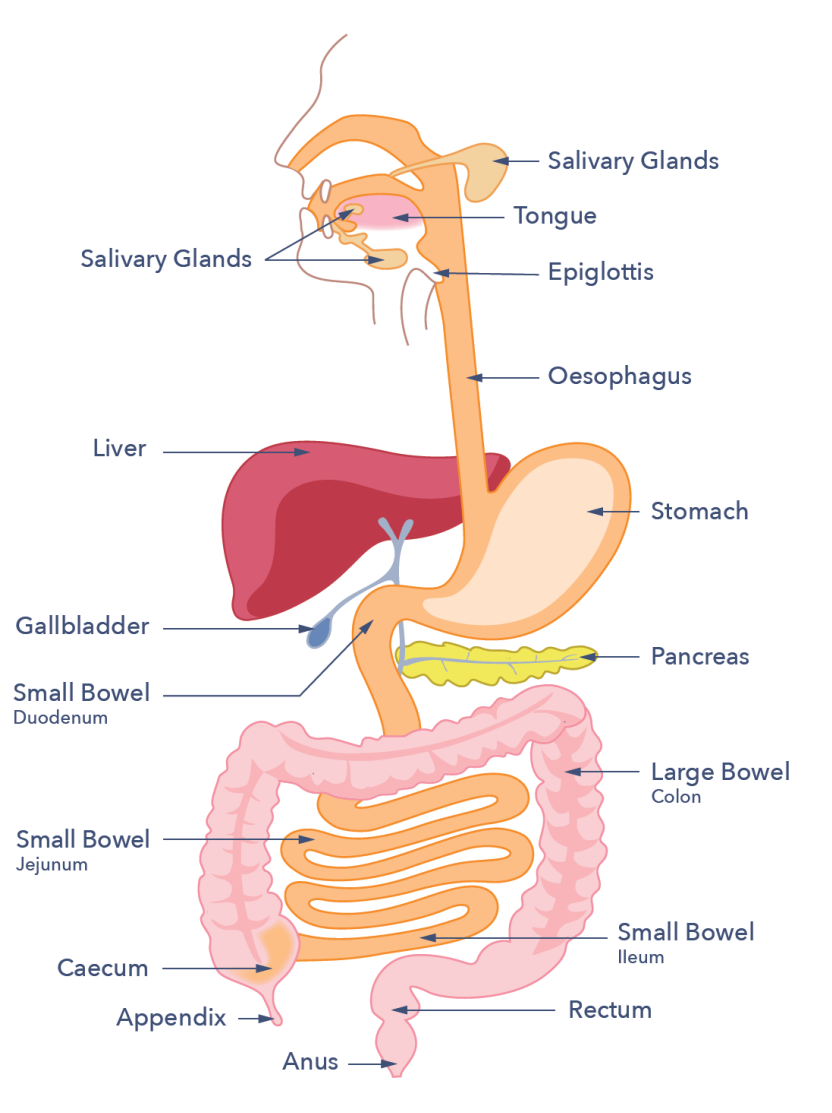




## FUNDING RESEARCH TO FIGHT DISEASES OF THE GUT, LIVER & PANCREAS

### THE DIGESTIVE SYSTEM



## THIS FACTSHEET IS ABOUT ACUTE PANCREATITIS

### OVERVIEW

The pancreas gland is an essential part of the digestive and hormone systems. It lies in the upper half of the abdomen behind the stomach and in front of the spine. It is salmon pink in colour, about nine inches long and about as thick as your wrist at its widest part.

The pancreas is essential for digesting the food we eat. It does this in two main ways: the main bulk of the pancreas makes digestive juices that balance the acid made in the stomach, and contain enzymes to digest protein, starch and fat in our food. Pancreatic juice flows into the upper intestine (duodenum) and mixes with the food and bile to digest food. Other specialised cells embedded in the pancreas make hormones, including insulin, to balance sugar levels in the blood and overall energy stores in the body.

### WHAT IS ACUTE PANCREATITIS?

Acute pancreatitis is a sudden inflammation of the pancreas gland that begins in the cells in the pancreas that produce digestive enzymes. If those digestive enzymes become active too early within the pancreas itself, the pancreas can become damaged. The pancreas becomes red, angry and swollen and, in severe cases, the pancreas and the fatty tissue surrounding it can be damaged beyond recovery. Those parts of the pancreas die and this is called necrotising pancreatitis.

One in four people who have an attack of acute pancreatitis can develop problems with other organs, for example the lungs and kidneys, and can need treatment in a high dependency or intensive care unit. Exactly why this happens in some people and not others is not completely understood but it is thought that overactivation of the immune system plays an important part. The damage that results from pancreatitis is unpredictable and can be minimal but in some people, complications in the pancreas and surrounding tissues can grumble on for many months. Fortunately, most people who have an attack of acute pancreatitis recover completely, although those people who need high dependency or intensive care may have longer lasting problems.

### CAUSES

#### CAUSES OF ACUTE PANCREATITIS

Gallstones and drinking too much alcohol are the two most common causes and together account for around eight of 10 attacks of acute pancreatitis. Gallstones cause problems when small stones pass out of the gallbladder into the bile duct and temporarily block the pancreas. Alcohol is a toxin to the pancreas and some people are more susceptible to damage from alcohol than others. Damage occurs both with binge drinking and regular excess drinking. In one in 10 people who have an attack of acute pancreatitis, no clear cause is identified. The remaining one in 10 attacks of pancreatitis can be attributed to rare causes, including:

- Following trauma eg a road traffic or bike accident
- As a side effect of some medicines eg azathioprine and steroids

- Genetic problems that lead to excessive fat levels in the bloodstream (known as hypertriglyceridemia). Learn about Familial Chylomicronaemia Syndrome, a group of genetic conditions that lead to high levels of triglycerides in the body.
- As part of an autoimmune disease (when the body's immune system attacks itself)
- If the pancreas gets blocked from a pancreas cancer
- Following an ERCP (a type of endoscopy test on the pancreas). About one in 100 ERCPs have this complication
- Some uncommon viral infections

## **SYMPTOMS**

### **WHAT ARE THE USUAL SYMPTOMS OF ACUTE PANCREATITIS?**

People get a sudden onset of abdominal pain, usually starting in the upper abdomen. This can be very severe and is often accompanied by vomiting. It is usually so severe that a hospital admission is necessary. Usually patients stay five to 10 days in hospital. If complications develop, these can be very debilitating and people can be in hospital for several months.

### **HOW IS ACUTE PANCREATITIS DIAGNOSED?**

The Diagnosis is based on a combination of a typical story of severe abdominal pain developing over minutes to hours, which can also be felt going through to the back, often accompanied by nausea and vomiting, and a positive blood test for one of the enzymes produced by the pancreas, called amylase or lipase. Sometimes, the diagnosis of acute pancreatitis is not clear at the beginning and is sometimes only diagnosed after a CT scan has been done. Everyone with acute pancreatitis should have an ultrasound scan to check for gallstones in the gallbladder as a possible cause, but this doesn't need to be done as an emergency and can be done in the first few days. Sometimes a CT scan may be necessary to rule out other possible causes of pain if the diagnosis is not clear and is often done to assess the extent of the damage to the pancreas.

## **TREATMENT**

### **WHAT TREATMENTS ARE AVAILABLE FOR ACUTE PANCREATITIS?**

At the moment, there is no specific medicine that can stop the inflammation in acute pancreatitis. Supportive treatments such as fluids through a drip and mask oxygen are required and usually a bladder catheter is necessary to monitor urine output. Sometimes a slender tube is passed via the nostril into the stomach to allow extra feeding to be given. The abdominal pain can be severe and needs treatment with strong painkillers including morphine-type drugs. Although antibiotics can sometimes be necessary, they are not routinely used because pancreatitis is not an infection.

Often people get better quickly and are able to eat and drink within a few days but sometimes tube-feeding is required for longer periods. Fortunately, most people have only mild inflammation and soon settle but some develop complications. Rarely, if there is a

gallstone jammed in the bile duct and blocking the pancreas duct, or obvious infection in the bile duct (called cholangitis), a telescope examination called an ERCP can be required.

Once people are over the worst phases of the attack, it is very important to search for and treat any underlying cause. For example, if gallstones are present these should be removed by surgery – usually by laparoscopic cholecystectomy (keyhole removal of the gallbladder). This is best done before a patient with acute pancreatitis (due to gallstones) goes home or certainly within two to three weeks if the person is well enough to have the general anaesthetic and operation.

If the cause of acute pancreatitis is alcohol, then it is really important that alcohol should be stopped completely. Stopping drinking alcohol may require specialised help as this can be difficult to do alone.

#### **WHAT COMPLICATIONS CAN OCCUR?**

**In the early stages of the disease (the first days up to one week), the main complications are general whole-body inflammation and organ failure. Low blood pressure may need specialist care in high dependency or intensive care with drip fluids and medicines to increase blood pressure. Breathing problems can require oxygen by mask or, in severe cases, by a life support machine in an intensive care unit. Fluid can collect around the pancreas and sometimes pockets of fluid called cysts can form. Most of these settle on their own but sometimes need to be drained.**

**If parts of the pancreas or surrounding tissues are dead, these can get infected and turn into pus that also may need to be drained. This is usually done after discussion with specialist teams in hospitals that have pancreatitis experts. Pancreas drains are mostly placed under CT guidance.**

**Unfortunately acute pancreatitis can be so severe that some patients die. Overall, one in 20 people who experience an attack of acute pancreatitis will die from that attack. Nearly all deaths from acute pancreatitis occur in those people who needed to go to high-dependency or intensive care.**

#### **SUPPORT**

##### **WHAT TO ASK YOUR DOCTOR?**

If you have acute pancreatitis you will be under the care of a specialist team who will treat and monitor you over the long term. The NHS website has information on the management of acute pancreatitis.

##### **NEW NICE GUIDELINES ON PANCREATITIS.**

The new National Institute for Health and Care Excellence ([NICE Guidelines on pancreatitis](#)) aim to improve the quality of care, information provision and support for people with acute pancreatitis. The guidelines have a section on [information to the public](#), explaining the care that patients should expect.

#### INFORMATION ON CHRONIC PANCREATITIS.

Find out about [chronic pancreatitis](#) and read [tips and suggestions](#) on how to manage that condition from chronic pancreatitis patients.

## RESEARCH

#### RECENT AND ONGOING RESEARCH STUDIES.

Guts UK has supported research on pancreatitis for years through its [Amelie Waring Fellowship](#). The latest fellowship has been awarded to Dr James O’Kelly at the University of Edinburgh for a study on ‘[Single cell definition of the mechanistic role of kynurenine monooxygenase at the innate immune interface in acute pancreatitis](#)’.

The University of Edinburgh is carrying out other promising research on acute pancreatitis, such as the early work to personalise the treatment of the disease described in this paper titled ‘[Multiomic definition of generalizable endotypes in human acute pancreatitis](#)’.

#### WHAT FURTHER RESEARCH STUDIES ARE NEEDED?

Further research into all aspects of acute pancreatitis is desperately needed. Many research scientists, usually working with clinical specialists in acute pancreatitis are working hard to understand how pancreatitis can cause such severe whole-body inflammation, and are trying many different new approaches to develop new medicines. Although there are promising early-stage leads, no medicines have yet reached everyday use in the clinic which can switch off the inflammation.

Specifically research is needed into the following questions:

- Exactly how does inflammation develop in the pancreas cells and can that be halted by new medicines?
- How does inflammation in the pancreas affect other organ systems to need intensive care – are there new medicines that can protect people against that, and prevent death?
- What can be done to speed up and improve recovery after an attack?
- What is the best way of treating any long-term complications that occur, as well as preventing these complications
- What factors make some individuals more susceptible to a severe attack than others? Can we identify those people as quickly as possible so that the right treatment can be offered?
- The new NICE guidelines on pancreatitis have a section with [recommendations for research](#).

**[For further information, visit gutscharity.org.uk](https://gutscharity.org.uk)**