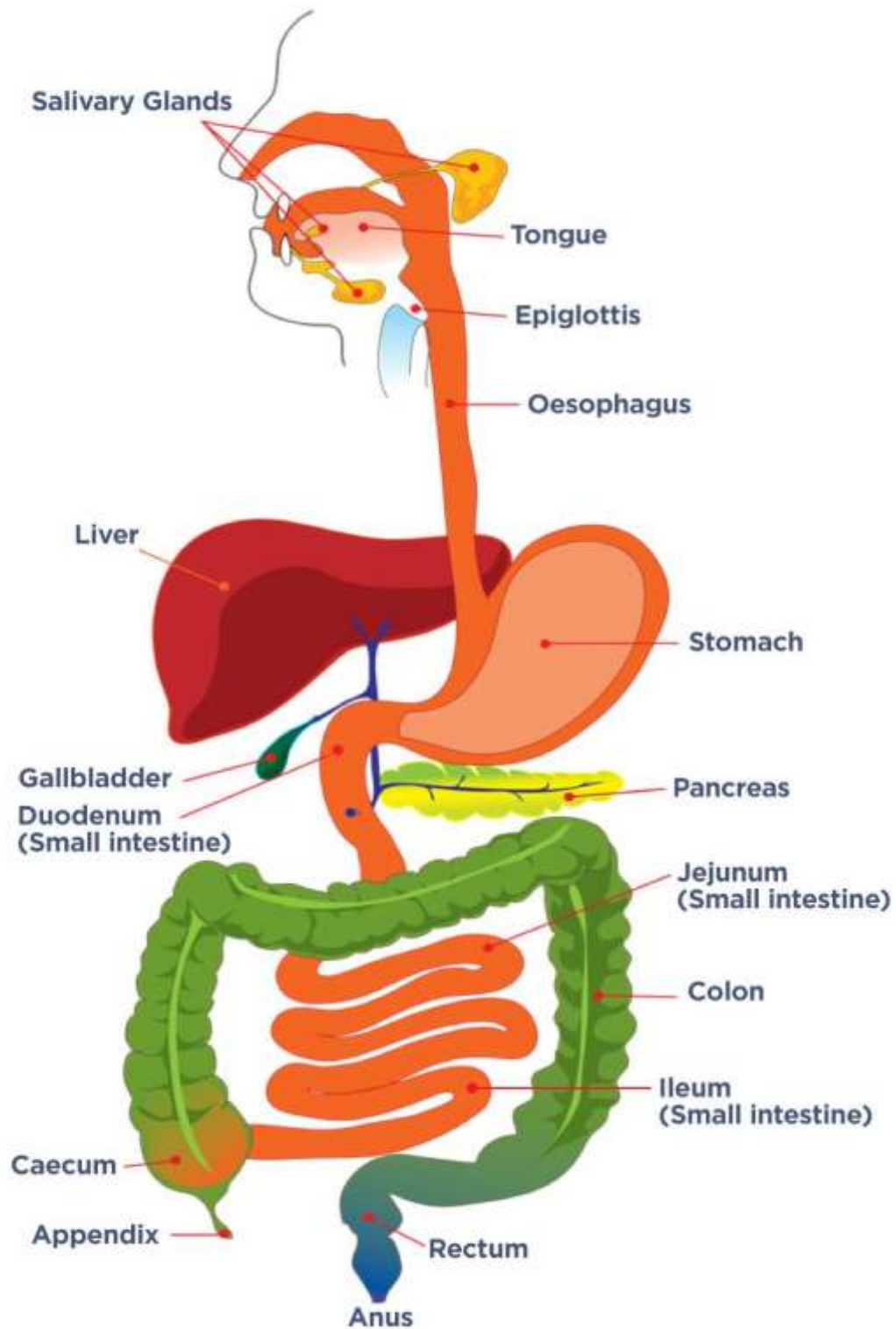


THE DIGESTIVE SYSTEM



This factsheet is about chronic pancreatitis

The pancreas is a gland that 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. The other role of the pancreas is to make hormones, including insulin, to balance sugar levels in the blood and overall energy stores in the body. This role is carried out by specialised cells embedded in the pancreas.

What is chronic pancreatitis?

Chronic pancreatitis is a long-standing inflammation of the pancreas (in medical terminology chronic means “long-lasting”). The normal pancreas is soft with a smooth surface; in chronic pancreatitis it becomes harder and knobbly, eventually looking like gristle. When the damaged pancreas is examined under the microscope, cells from the immune system are seen (these are hard to find in the normal pancreas) and the normal pancreas cells are progressively lost. Scar tissue (fibrosis) forms in these inflamed areas, making the pancreas harder and less regular. In the late stages of the disease calcium is deposited in the scarred areas. The ducts (tubes which transport digestive juices to the intestine) also become irregular with narrowings and ballooned segments. Plugs of protein may collect in the ducts and eventually large stones may form. Cysts (fluid-filled cavities) are also found.

Chronic pancreatitis is rare: in the UK between 6,000 and 12,000 new cases are diagnosed per year, though this is probably an underestimate.

What are the causes of chronic pancreatitis?

There is no single cause of chronic pancreatitis. In most sufferers there is probably a combination of inherited (genetic) and environmental factors. Although smoking and heavy drinking are important risk factors for chronic pancreatitis, it is rare even in heavy smokers and drinkers. Once chronic pancreatitis is established however, it is important to give up tobacco and alcohol.

The most common genetic factor is the cystic fibrosis gene. Cystic fibrosis is the commonest cause of chronic pancreatitis in children. People with chronic pancreatitis are more likely to have a single abnormal copy of the cystic fibrosis gene than non-sufferers, but the risk of carrying a single copy is still very small.

Hereditary pancreatitis is an extremely rare genetic disease which runs in families. Autoimmune pancreatitis is also likely to have a genetic background. For the rest, it is likely that subtle variations in a number of different genes combine to make some people more susceptible to chronic pancreatitis.

The role of gallstones in chronic pancreatitis is controversial. The standard view is that gallstones are not a risk factor, but some authorities disagree.

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Tobacco smoking and drinking alcohol are by far the most important environmental factors. In the UK (but not the USA) more men than women have chronic pancreatitis; this is thought to be because men are more likely to be heavy drinkers and smokers than women.

What are the symptoms of chronic pancreatitis?

The major symptoms of chronic pancreatitis are pain, diarrhoea and weight loss. Some patients have only one or two of these symptoms. Symptoms of diabetes ([link to NICE](#)) may occur late in the disease. Some experts believe that many people with chronic pancreatitis have mild or no symptoms, especially in the early stages of the disease.

The pain of chronic pancreatitis is characteristically severe, felt in the upper abdomen (centrally just below the ribs) and may go through to the back. Some people get relief from crouching forwards. The pain may be constant or intermittent; some people also get attacks of acute pancreatitis ([link](#)).

The cause of pain in chronic pancreatitis is debated. Increased pressure in obstructed ducts may be a factor; there is evidence of over-growth and increased sensitivity of nerves in the pancreas itself; the brain may also become sensitised to pain signals from the pancreas forming a pain-loop. The chronic pancreatitis suffered by people with cystic fibrosis is however generally pain-free.

There may also be more generalised abdominal discomfort, nausea and bloating. Diarrhoea in chronic pancreatitis is caused by poor digestion of food. The classical description is large volumes of pale, floating stools with a particularly foul smell. An oily film may be present, they are hard to flush away and stain the toilet bowl. Many people learn that fatty foods worsen this symptom, but avoiding fat contributes to weight loss. Weight loss occurs partly through poor absorption of food and partly through loss of appetite or food-avoidance.

Many people with chronic pancreatitis feel unwell in themselves, lethargic and fatigued. Some also suffer side-effects from pain-killing drugs. As with any chronic condition, sufferers may suffer psychological symptoms such as depression and relationship problems.

How is chronic pancreatitis diagnosed?

Chronic pancreatitis is hard to diagnose because it is rare (the average English GP practice would see less than one new case per year) and its symptoms overlap with those of more common conditions, such as Irritable Bowel Syndrome (IBS). Investigation aims to show abnormalities in the structure and/or function of the pancreas. It is usually supervised by a specialist gastroenterologist or specialist (HPB, or hepatobiliary and pancreas) surgeon.

Investigations involve scans, such as CT and MRI scans which give the best pictures of the pancreas, but ultrasound scans may also be used. If extra information is needed, an endoscope may be used to put dye into the ducts (ERCP, or Endoscopic Retrograde Cholangio Pancreatogram) or to get internal ultrasound pictures (EUS, or Endoscopic Ultrasound).

The simplest test of the function of the pancreas (how good it is at producing digestive juices) is the faecal elastase (performed on a small sample of stool) but this is not always reliable. MRI can assess the volume of

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digestive juice produced by the pancreas after an injection of a hormone called secretin. The best current method is the mixed triglyceride breath test, but this is not available everywhere.

How is chronic pancreatitis treated?

There are no curative treatments for chronic pancreatitis. The aim is to control symptoms and improve quality of life. It is vital to give up both smoking and alcohol even if they are not the primary causes of your pancreatitis. Both make the disease worse. Specialist support is available.

Poor digestion is treated with digestive enzymes given in tablet form and taken with every meal and snack. An acid-reducing PPI drug may also help because stomach acid damages the enzymes in the tablet. Dietary restrictions can be harmful. The aim is to enjoy and digest normal meals without symptoms, and to regain weight. Every patient should see a specialist dietitian, who is a vital part of the chronic pancreatitis team. Other 'nutritionalists' should be avoided. They have variable training and may give poor or dangerous advice.

Pain is treated using a 'pain ladder'. The minimum effective treatment is used at any time to give pain-relief while minimising side-effects. If 'simple' pain-killers such as paracetamol or ibuprofen are ineffective, stronger drugs from the opiate family may be needed. They are excellent at controlling short-term pain but are addictive, cause constipation and may actually cause pain with long-term use. Pain-modifying drugs which change the way in which the nerves and brain interpret pain-signals may give better long-term control. NICE has advised that more research is needed in this area.

Non-surgical procedures are a part of pain treatment for some people. People with stones in the pancreas may get relief if they are removed using an endoscopic procedure (ERCP). It is sometimes also possible to break up stones using shock wave lithotripsy (ESWL). Some people with severe pain which is not controlled by pain-killing medicines benefit from injections to block the nerves coming from the pancreas, but this is only done after careful consideration.

Surgery is only offered in special pancreas centres after careful investigation and discussion. Operations to drain dilated ducts and remove inflamed tissue may relieve pain in some people. Occasionally the whole pancreas is removed (total pancreatectomy). This however causes severe diabetes. If the Islets of Langerhans (which make insulin) are transplanted back (TPAIT), the diabetes may be less severe. This operation is reserved for people who still have insulin production. At present there is a proposal to fund this operation at 4 centres in England, but it is not yet freely available.

Help with the stress of having a painful chronic illness can be provided by your GP practice and pancreatitis specialist team.

What are the main complications of chronic pancreatitis?

The main complication of chronic pancreatitis is diabetes. This is usually a form called Type 3c diabetes, which occurs because of damage to the Islets of Langerhans. The Islets produce many different hormones which contribute to the control of sugar levels, so Type 3c diabetes may be difficult to control. The usual treatment is insulin injections, but NICE has indicated a need for research in this area.

Swelling and scarring of the pancreas occasionally leads to obstruction of the pancreas itself, the bile duct or the duodenum (the part of the small bowel which drains the stomach). Obstruction of the pancreatic or bile

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duct is usually treated by putting stents, (small internal drainage tubes) through the obstruction using an endoscope (ERCP), but surgical operations are also used. NICE has advised that more research is needed in this area. Duodenal obstruction is rare and usually needs an operation to bypass the blockage.

Some people with chronic pancreatitis also have episodes of acute pancreatitis.

If you have chronic pancreatitis, you have an increased risk of developing pancreatic cancer. This risk is particularly high if you have hereditary pancreatitis. Your pancreas team will monitor your condition and advise you if they judge that you should be investigated for cancer. People with hereditary pancreatitis may be asked to take part in a trial looking at ways of detecting cancer early.

Chronic pancreatitis can complicate other illnesses with genetic components, such as some hyperlipidaemias (high blood fats), high blood calcium, kidney disease and Inflammatory Bowel Disease ([link](#)).

What support is available to you?

You will be cared for by your GP practice together with a specialist pancreas team at your local hospital. Your local pancreas team may refer you to a specialist pancreas centre if you need special investigations or an operation.

The [NHS website](#) has a section on managing persistent pain.

New NICE Guidelines on pancreatitis

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

What additional research is needed?

There is a need for research into every aspect of chronic pancreatitis, from the laboratory to clinical practice. The last 20 years have seen major advances in our understanding of the mechanisms of damage to the pancreas in laboratory models, but these are incomplete and have not yet produced improvements for patients. NICE has recommended research into pain management, the treatment of bile-duct obstruction, and insulin therapy in Type 3c diabetes.

Research into the cyclical process of inflammation and fibrosis is needed - if this could be controlled it might be possible to prevent the progressive destruction of the pancreas. It is also important to find out why some people who drink alcohol are affected but others who seemingly drink similar amounts have no similar problems.

The new NICE guidelines on pancreatitis have a section with [recommendations for research](#).

For more information about research in this area please contact Guts UK Charity on

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