Chronic Pancreatitis

Understanding your condition and how it is managed

This leaflet explains chronic pancreatitis: what it is, what happens inside the pancreas, the symptoms and complications it can cause, common causes, how it is diagnosed, and how it is managed, including lifestyle changes, pain relief, nutrition, and endoscopic or surgical treatment. It is general background information and does not replace advice from your own specialist team, who will tailor your care to your individual situation.

What is chronic pancreatitis?

Chronic pancreatitis is long-standing, ongoing inflammation of the pancreas that causes permanent, irreversible changes to its structure over time. Unlike acute pancreatitis, which is a sudden episode that usually resolves, chronic pancreatitis is a persistent condition, although some people also have flare-ups on top of their background symptoms, sometimes called “acute-on-chronic” episodes.

Over months or years, repeated inflammation gradually damages both parts of the pancreas: the exocrine tissue that makes digestive enzymes, and the endocrine tissue (islets) that makes insulin. This is why chronic pancreatitis can eventually affect both digestion and blood sugar control, alongside causing pain.

What happens to the pancreas?

Chronic inflammation leads to a number of structural changes within the gland, illustrated below. Not everyone develops all of these, and the pattern and severity varies between individuals.

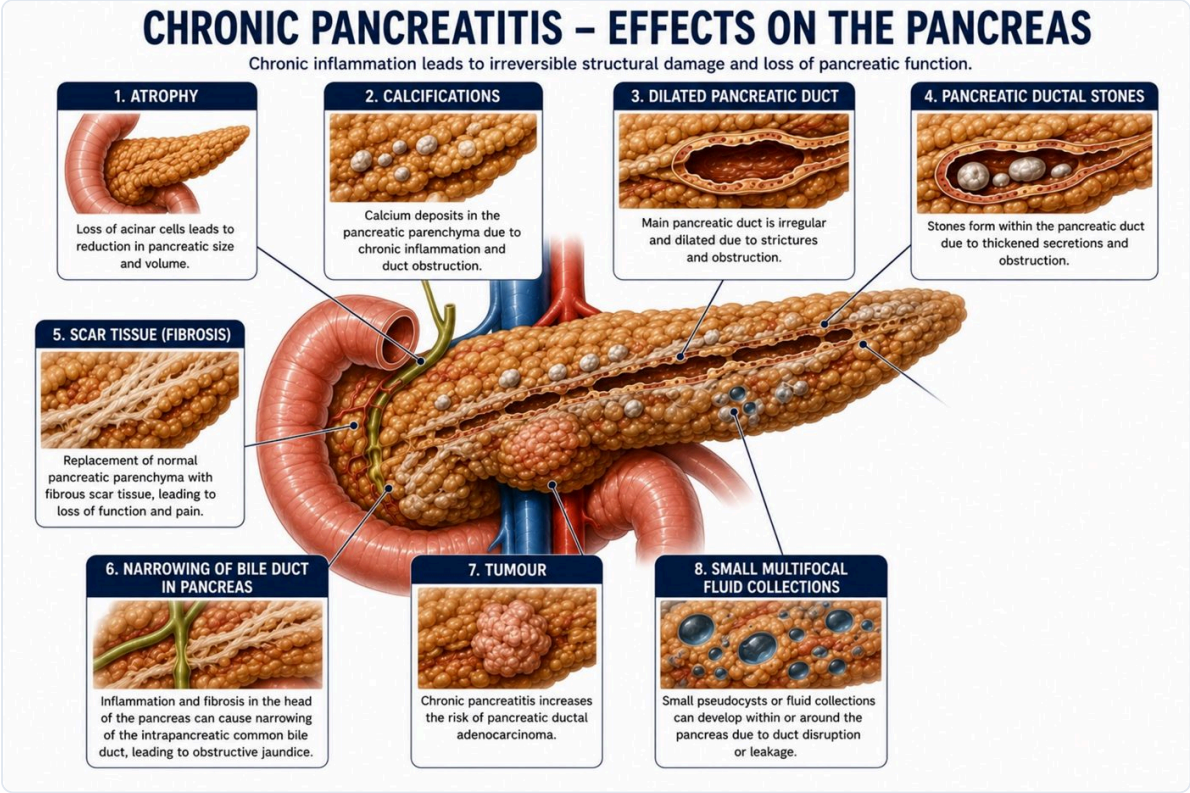

Figure 1: Structural changes that can occur in the pancreas in chronic pancreatitis.

- **Atrophy**: loss of the enzyme-producing (acinar) cells, so the pancreas shrinks in size.
- **Calcifications**: small deposits of calcium form within the pancreatic tissue.
- **A dilated, irregular pancreatic duct**: the main drainage duct becomes widened and irregular due to strictures (narrowings) and blockages.
- **Ductal stones**: hardened deposits can form within the duct, from thickened secretions.
- **Scar tissue (fibrosis)**: normal pancreatic tissue is gradually replaced by fibrous scar tissue, contributing to loss of function and to pain.
- **Narrowing of the bile duct**: inflammation and scarring in the head of the pancreas can compress the nearby bile duct, sometimes causing jaundice.
- **Fluid collections**: small pseudocysts or fluid collections can develop where a duct has leaked or become disrupted.

Chronic pancreatitis also increases the long-term risk of pancreatic cancer, which is one reason why ongoing monitoring and follow-up are recommended (see “Possible complications” below).

What symptoms does it cause?

The most common symptom is abdominal pain, though the pattern varies a great deal between individuals: some people have occasional severe flares, some have constant background pain with flares on top, and some have persistent, unrelenting pain. Typical features include:

- **Upper abdominal pain**: often felt in the centre or left side of the upper abdomen, frequently spreading through to the back. It is commonly worsened by eating or drinking alcohol, and can be eased by fasting or leaning forward.
- **Nausea and vomiting**: often accompanying pain flares.

- **Weight loss**: from a combination of reduced appetite (due to pain) and poor absorption of nutrients.
- **Steatorrhoea**: pale, oily, foul-smelling, difficult-to-flush stools, a sign that fat is not being digested properly.
- **Symptoms of diabetes**: such as thirst, passing more urine, or fatigue, can develop as the condition progresses and affects insulin production.

Some people with chronic pancreatitis have relatively mild or intermittent symptoms for a long time; in others, the condition and its symptoms progress more quickly. It is difficult to predict this in advance, which is why regular follow-up is valuable.

What causes chronic pancreatitis?

Several factors contribute to chronic pancreatitis, and more than one often plays a role. Importantly, your team will not simply assume your pancreatitis is caused by alcohol just because you drink; a proper assessment is made for other possible causes too.

- **Alcohol**: long-term heavy alcohol use is a well-recognised risk factor, particularly in combination with smoking.
- **Smoking**: an independent risk factor that also speeds up progression of the disease and worsens pain, regardless of alcohol intake.
- **Genetic factors**: gene changes (for example in the PRSS1, SPINK1, CFTR or CTRC genes) can cause or predispose to chronic pancreatitis, including a hereditary form that can run in families.
- **Autoimmune disease**: a specific form called autoimmune pancreatitis, sometimes linked to a wider condition called IgG4-related disease, occurs when the immune system attacks the pancreas.
- **Metabolic causes**: for example, persistently high calcium or triglyceride levels.
- **Structural or anatomical factors**: an abnormality of the pancreatic duct or a blockage can lead to chronic inflammation.

In a significant proportion of people, no clear cause is found even after thorough investigation (“idiopathic” chronic pancreatitis).

How is it diagnosed?

Diagnosis is based on a combination of your symptoms, examination, and tests. Imaging is central to confirming the diagnosis and looking for the structural changes described above:

- **CT scan, MRI/MRCP** (a special MRI that images the pancreatic and bile ducts in detail), and **endoscopic ultrasound (EUS)** are the main imaging tests used, and are similarly effective at detecting chronic pancreatitis.
- **Blood tests**, including amylase or lipase, are often normal in established chronic pancreatitis, unlike in acute pancreatitis, so normal results do not rule it out.
- **A stool test (faecal elastase)** or other tests can assess whether your pancreas is producing enough digestive enzymes.
- **Genetic testing** may be offered in certain situations, such as a family history or early-onset disease.

A biopsy of the pancreas is not usually needed to make the diagnosis.

Possible complications

Exocrine insufficiency (digestive enzyme deficiency)

As enzyme-producing tissue is lost, your pancreas may no longer make enough enzymes to digest food properly, particularly fat. This causes weight loss and steatorrhoea, and is treated with pancreatic enzyme replacement therapy (PERT). See our separate "Nutrition in Pancreatitis" leaflet for detail on how this works and how to take it.

Diabetes

Damage to the insulin-producing islet cells can lead to diabetes (sometimes called type 3c or "pancreatogenic" diabetes), with a lifetime risk of up to around 80% in chronic pancreatitis. Because of this, your HbA1c (blood sugar control) is usually checked at least every six months, even if you feel well, so that diabetes can be identified and managed early.

Bone health

Reduced absorption of calcium and vitamin D, alongside chronic inflammation, increases the risk of osteoporosis and osteopenia (thinning of the bones). A bone density scan is generally recommended every two years to monitor this.

Bile duct narrowing and jaundice

Scarring in the head of the pancreas can narrow the nearby bile duct, which can cause jaundice (yellowing of the skin or eyes), itching, or dark urine, and may need a stent or surgery to relieve.

Pseudocysts and fluid collections

These fluid-filled collections can develop around the pancreas. Many cause no problems and are simply monitored, but if they become large, infected, or cause symptoms, they can be drained, usually with an endoscopic (camera-guided) procedure.

Pancreatic cancer risk

Chronic pancreatitis is associated with an increased long-term risk of pancreatic cancer, and this risk is substantially higher in hereditary pancreatitis, where lifetime risk can reach around 40%. If you have hereditary pancreatitis, your team may recommend annual monitoring; for other causes of chronic pancreatitis, you should discuss with your team whether any specific monitoring applies to you, and always report new or changing symptoms (such as unexplained weight loss, worsening pain, or jaundice) promptly.

How is chronic pancreatitis managed?

There is no single treatment that reverses the structural damage already done to the pancreas, so management focuses on relieving symptoms, treating complications, slowing further damage, and supporting your nutrition and quality of life. Care usually involves a team that may include surgeons, gastroenterologists, dietitians, pain specialists, diabetes specialists, and psychological support.

Lifestyle changes

- **Stop alcohol completely**: even if alcohol was not the original cause, continuing to drink can worsen pain and accelerate damage.

- **Stop smoking**: smoking independently speeds up progression of chronic pancreatitis and worsens pain; stopping is one of the most effective things you can do. Ask your team about stop-smoking support.

Pain management

Pain is often the most difficult symptom to manage and treatment is usually stepped up gradually: starting with simple painkillers, and progressing where needed to medicines also used for nerve-related (neuropathic) pain, such as pregabalin, gabapentin or certain antidepressants (SNRIs). For some people, a nerve block (coeliac plexus block) or referral to a specialist pain management team is helpful, and psychological support (such as cognitive behavioural therapy) can be a valuable part of managing persistent pain alongside medical treatment.

Nutrition and enzyme replacement

A dietitian can help you maintain a healthy weight and manage symptoms through diet. If you have exocrine insufficiency, pancreatic enzyme replacement therapy (PERT) taken with meals and snacks is central to treatment, and vitamin levels (particularly the fat-soluble vitamins A, D, E and K) are monitored and corrected if low. See our "Nutrition in Pancreatitis" leaflet for more detail.

Endoscopic treatment

If pain is related to a blocked or narrowed pancreatic duct, or duct stones, an endoscopic procedure (ERCP) can sometimes clear stones, dilate a stricture, or place a stent to improve drainage. Extracorporeal shockwave lithotripsy (ESWL) (using sound waves to fragment stones from outside the body) may also be used, often alongside endoscopy, particularly if surgery is not suitable.

Surgical treatment

For people with significant pain related to a blocked, dilated pancreatic duct, surgery is generally the recommended first-line treatment, and tends to give more durable pain relief than endoscopic treatment alone in this situation. The choice of operation depends on the pattern of disease:

- **Drainage procedures**: such as a lateral pancreaticojejunostomy (Puestow procedure), which widens and drains the pancreatic duct into a loop of bowel, relieving pressure within the duct.
- **Combined drainage and resection**: such as the Frey procedure, which removes part of the diseased pancreatic head as well as draining the duct, often used when the head of the pancreas is particularly affected.
- **Resection procedures**: such as a pancreaticoduodenectomy (Whipple's procedure) or distal pancreatectomy, removing the most severely affected part of the pancreas.
- **Total pancreatectomy with islet autotransplantation**: removal of the whole pancreas for severe, refractory pain, with the insulin-producing cells extracted and reinfused into the liver to try to preserve some of your body's own insulin production.

Your surgical team will discuss which, if any, of these options is suitable for you, along with the expected benefits and risks specific to your situation.

Living with chronic pancreatitis

Chronic pancreatitis is a lifelong condition, and the structural damage already present cannot be reversed. However, with the right combination of lifestyle change, symptom control, nutritional support and, where

appropriate, endoscopic or surgical treatment, many people are able to manage their symptoms well and maintain a good quality of life. Pain can, for some people, ease over time as the pancreas becomes less active (sometimes called "burning out"), although this is not something that can be relied upon or predicted, and complications such as diabetes or enzyme deficiency can still develop or progress.

Because chronic pancreatitis affects digestion, blood sugar, bone health, pain, and sometimes mental wellbeing, ongoing follow-up with your specialist team (including regular blood tests, bone scans, and open conversations about pain and mood) is an important part of staying well. Please do raise any new or changing symptoms, and don't hesitate to ask for psychological support if the condition is affecting your mood or daily life; this is a common and understandable part of living with a chronic illness, not a sign of weakness.

When to seek urgent medical help

- A severe flare of pain that is different from your usual pattern
- Persistent vomiting or an inability to keep fluids down
- Yellowing of the skin or eyes, dark urine, or pale stools
- Fevers, shivering, or feeling generally very unwell
- Symptoms of very high or very low blood sugar (if you have diabetes)
- Unexplained or rapid weight loss

Key points to remember

- Chronic pancreatitis is long-term, irreversible inflammation and scarring of the pancreas, affecting both digestion and blood sugar control over time.
- Pain is the most common symptom, but its pattern varies widely between individuals.
- Stopping alcohol and smoking completely are the most effective steps you can take to reduce further damage and pain.
- Regular monitoring (blood sugar every 6 months, bone density every 2 years, and attention to nutrition) helps catch complications early.
- Treatment is stepwise: lifestyle change and pain control first, with endoscopic or surgical treatment considered for duct blockage or stones causing pain.
- Enzyme replacement therapy (PERT) treats digestive enzyme deficiency; ask your team or see our nutrition leaflet for guidance on taking it correctly.
- You are not alone in managing this condition: a multidisciplinary team, including dietitians, pain specialists and psychological support, is there to help.

This leaflet is for general information only and does not replace individual advice from your doctor or specialist team, who will tailor your care to the cause and pattern of your chronic pancreatitis and any other health conditions you have. If you are worried about any symptoms, please contact your care team.

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