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## What causes Crohn's disease?

Crohn's disease is a condition that is caused by inflammation of the gut. It is a type of [inflammatory bowel disease](#) (IBD). Crohn's is a lifelong condition, and can significantly affect the day-to-day lives of people with it. However, there are good treatments that can help to control or reduce symptoms.

Crohn's disease affects the digestive system. It usually affects the small intestine and large intestines, but can affect anywhere from the mouth to the bottom. People can also develop problems of other organs. It is caused by inflammation in the gut, and so it's known as one of the [inflammatory bowel diseases](#).

It's not known exactly why this happens, but it's thought that an overactive immune response to gut bacteria is involved, and several genetic links have been identified. Many other things in the environment are likely to play a role, like smoking, infections, and some medications.

If you think you may have Crohn's disease find out what to do here. This will tell you if you need to see a doctor and how it is treated.

In this series of articles centred around Crohn's disease you can read about [symptoms of Crohn's disease](#), causes of Crohn's disease, and [treatments for Crohn's disease](#)- all written by one of our expert GPs.

The rest of this feature will take an in-depth look at the symptoms of Crohn's disease as, at Patient, we know our readers sometimes want to have a deep dive into certain topics.

# What causes Crohn's disease?

The symptoms of Crohn's disease are caused by inflammation in the gut. Inflammation is the body's response to infection or injury. In all of us, it's helpful for healing injuries and fighting off infections, but when it occurs in the wrong place, for the wrong reason, or is overactive, it can cause harm.

People with Crohn's have excessive inflammation affecting their gut. This causes damage to the digestive system. This can lead to pain, diarrhoea, bleeding, and also scarring of the intestines.

It's not exactly clear why people get Crohn's disease. It's likely to be very complex, and probably involves lots of different things, which may differ from person to person. Some things that are likely to be involved include:

## **Genetics**

Crohn's disease tends to run in families. Roughly 8% to 15% of people with Crohn's disease have a first-degree relative – a child, sibling, or parent – with inflammatory bowel disease. Many different genes have been linked with Crohn's disease. It's likely that some people are at risk of getting Crohn's disease due to their genetics, but that something else needs to happen for it actually to occur.

## **Immune system problems**

In Crohn's disease, the immune system seems to be overactive in the gut, producing excessive inflammation. One possibility is that the immune system is mistakenly triggered by normal gut bacteria.

It's sometimes said that Crohn's is an autoimmune condition. In autoimmune conditions, the immune system mistakenly attacks healthy parts of the body.

Many think that this isn't quite true in Crohn's. Instead, it's thought that the immune system in Crohn's has reacted to something in the gut – like bacteria, toxins, drugs, or other infections – in an inappropriate way. This immune response damages the body's own tissues – but unlike an autoimmune condition, the immune system in Crohn's is actually trying to attack something else, and the harm to the body's tissues is a side-effect.

Most treatments for Crohn's disease work by reducing the activity of the immune system.

### **Bacteria, viruses and fungi in the gut**

It's normal to have some types of bacteria, viruses and fungi living in the gut, without causing infection – called the gut microbiome. This is really important for the functioning of the gut, and there has been lots of research recently looking at how imbalances in the microbiome could lead to illnesses.

It's possible that, in Crohn's, the balance of good bacteria, fungi, and viruses is disrupted, and that this causes inflammation. For example, there might be an overgrowth of harmful bacteria that activate an immune response, or they might produce toxins. Good bacteria can control and reduce inflammation, so if these disappear, inflammation might be worse. Some people think that this might explain the link between Crohn's and certain risk factors – this balance might be disrupted by antibiotics, diet, and gut infections such as [gastroenteritis](#).

### **Smoking**

People who smoke have a higher risk of developing Crohn's disease. Smoking also makes Crohn's disease worse in people who have the condition. Smoking has lots of effects on the gut, including affecting the gut microbiome.

## **What can trigger a Crohn's disease flare-up?**

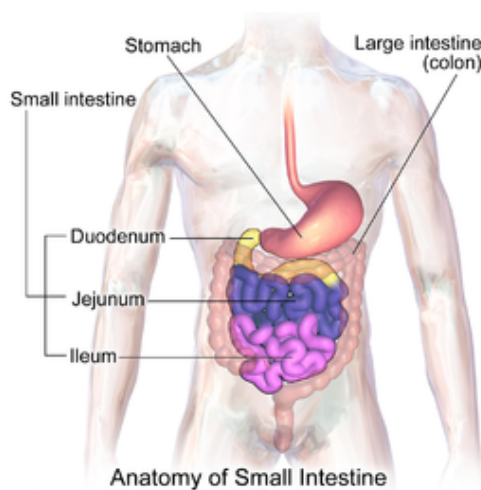
People with Crohn's disease usually have periods where their symptoms are well controlled, with intermittent flare-ups. Triggers for flare-ups include:

- Not taking medicines that were prescribed to control the Crohn's disease.
- Smoking – people who smoke are more likely to have flares of Crohn's disease. [Stopping smoking](#) reduces how often flare-ups happen.

- Using non-steroidal anti-inflammatory drugs (NSAIDs), such as [ibuprofen](#) or [naproxen](#) – is probably linked to Crohn's flares, although there is some uncertainty. People with Crohn's should avoid high-dose NSAIDs and long-term or very frequent NSAID use, as a precaution.
- Gut infections might cause Crohn's flares – [Clostridioides difficile](#) infection, which can occur after antibiotic use, has been linked to flares. However, it's still debated whether these infections actually cause Crohn's to flare up, or if the infection itself is simply producing symptoms that are similar to a flare.
- Stress – many people with Crohn's report that episodes of stress trigger flares, which is also seen in research studies.

## Are there different types of Crohn's disease?

Crohn's disease is a type of [inflammatory bowel disease](#). [Ulcerative colitis](#) is the other main type of inflammatory bowel disease – this is different to Crohn's disease.



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Crohn's disease can affect any part of the digestive tract, and this varies depending on person. One way to look at types of Crohn's disease is to consider which part of the gut is affected. Some people have just one of these, others have several. These include:

- **Ileitis and terminal ileitis.** The ileum is the last part of the small intestine, which joins up to the caecum – the first part of the large intestines or colon. Terminal ileitis is inflammation of the last part of the ileum – terminal here just means end, as in 'end of the ileum' – it does not mean fatal.
- **Crohn's colitis – or granulomatous colitis.** The colon is the large intestine, which connects to the ileum (small intestine) at one end, and the anus at the the other end. Colitis means inflammation of the colon. Crohn's colitis is a different condition to [ulcerative colitis](#), the other main type of inflammatory bowel disease – though sometimes it can be difficult to tell them apart.
- **Ileocolitis.** This is when Crohn's disease affects both the colon and the ileum. This is a common form of Crohn's disease.
- **Jejunioileitis.** The jejunum is higher up in the small intestine. Crohn's disease affecting the jejunum and ileum is called jejunioileitis. This is relatively uncommon, and more often seen in children than in adults.
- **Gastroduodenal Crohn's disease.** This affects the oesophagus (food pipe), stomach, and the first part of the small intestine (the duodenum).
- **Perianal Crohn's disease.** This is when Crohn's disease affects the anus and the areas around it, including the skin. Around one in four people with Crohn's disease have this.
- **Oral Crohn's disease.** Crohn's disease can also affect the mouth. [Mouth ulcers](#) are common in people with Crohn's flare-ups, but Crohn's disease directly affecting the mouth is quite rare.

## Risk factors for Crohn's disease

We still don't understand exactly why Crohn's disease happens, but it's likely that it requires a combination of things. Risk factors for Crohn's include:

- **Age.** Crohn's disease most commonly develops in adolescence and early adulthood, although it can start at any age.
- **Family history.** Having a family member, especially a close relative, with inflammatory bowel disease increases the risk of Crohn's. It's likely that genes that make people vulnerable to getting Crohn's run in families.

- Smoking. Smoking roughly doubles the risk of developing Crohn's disease. This is the only risk factor that we can do something about, by stopping, or cutting down, which also has [lots of other benefits](#).
- Ancestry. Crohn's is more common in people of Northern European and Ashkenazi Jewish descent.
- [Gastroenteritis](#). There is an increased risk of developing Crohn's disease after an episode of gastroenteritis, although this risk is low.
- Medicines. Some seem to increase the risk of Crohn's slightly, such as antibiotics, non-steroidal anti-inflammatory drugs (NSAIDs), and some types of [contraceptive pills](#).
- Low levels of physical activity.
- Low levels of [vitamin D](#).
- Living in an urban area compared to a rural area has shown an increased risk. It is possible that living rurally is protective against Crohn's disease – studies are ongoing.
- Diet. There are some possible links between diet and Crohn's – for example, it's been reported that a high-fibre diet might reduce the risk of Crohn's, and diets high in sugar and animal fats might increase the risk.
- Having the appendix removed (appendicectomy) for [appendicitis](#) seems to increase the risk of Crohn's disease, although more recent research suggests this might not be the case.

## How common is Crohn's disease?

The exact figures are difficult to establish, but one estimate is that around one in every 360 people in the UK have Crohn's disease – this would mean around 180,000 people living with the condition.

Rates of Crohn's are increasing in the UK, the USA, and other countries. It's not clear why.

# How to prevent Crohn's disease

We don't know exactly why Crohn's disease happens in some people and not in others – so we don't have a reliable way of preventing Crohn's disease.

Smoking is a risk factor for Crohn's disease – so stopping smoking, or avoiding smoking, is likely to reduce the risk of developing Crohn's disease, and has lots of other benefits.

Some researchers think that living a healthy lifestyle – exercising regularly, maintaining a healthy weight – including weight loss if overweight or obese, eating a diet high in fruit, vegetables and fibre, and low in fat – could prevent some cases of Crohn's disease. However, this hasn't yet been proven.

## Further reading

- [Ananthakrishnan AN, et al; Lifestyle, behaviour, and environmental modification for the management of patients with inflammatory bowel diseases: an International Organization for Study of Inflammatory Bowel Diseases consensus. Lancet Gastroenterol Hepatol. 2022 Jul;7\(7\):666–678. doi: 10.1016/S2468-1253\(22\)00021-8. Epub 2022 Apr 27.](#)
- [Lopes EW, et al; Lifestyle factors for the prevention of inflammatory bowel disease. Gut. 2022 Dec 6;gutjnl-2022-328174. doi: 10.1136/gutjnl-2022-328174.](#)

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