

Patient information from the BMJ Group

# Colonic diverticular disease

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## Colonic diverticular disease

If you have colonic diverticular disease, it means small pouches bulging outwards from your gut wall are causing symptoms, such as painful cramps in your abdomen. But often diverticular disease can be so mild that you hardly notice you have it. There's no cure for diverticular disease. But there are treatments that can help with your symptoms.

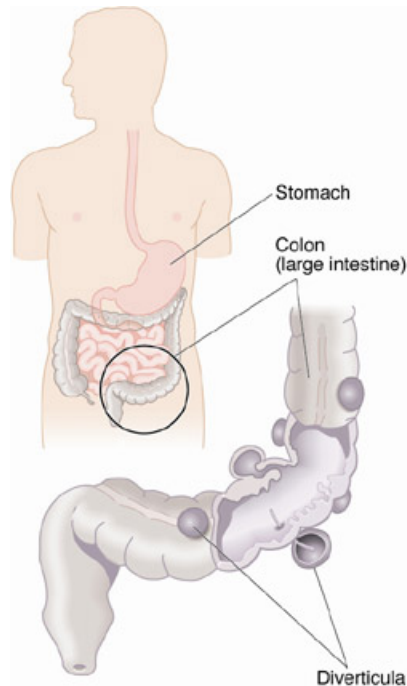
We've brought together the best research about diverticular disease and weighed up the evidence about how to treat it. You can use our information to talk to your doctor and decide which treatments are best for you.

## What is colonic diverticular disease?

Lots of people have small pouches of tissue that bulge outwards from their gut wall. Doctors call these pouches diverticula. Usually these pouches don't cause any symptoms, so many people never know they have them. But if the pouches make you ill, your doctor may say you have diverticular disease.

Diverticula are a bit like an inner tube that pokes through weak places in a tyre. <sup>[1]</sup> You can have just one of these pouches (when it would be called a diverticulum). Most people have more than one. Some people have hundreds. <sup>[2]</sup>

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Diverticula are pouches that bulge out of your bowel.

Diverticula are usually quite small. Most measure half a centimetre to 1 centimetre (about a quarter to half an inch) across. Some can be more than 2 centimetres (an inch) across.

You can get these pouches anywhere in your **gastrointestinal** tract. You might get them in your throat (in your oesophagus, the tube that connects your mouth to your stomach), in your stomach or in your small intestine (the part of your gut just after your stomach, also called your small bowel).

Most happen in your sigmoid **colon**, which is in the lower part of your large bowel, on the left side of your abdomen. The sigmoid colon joins onto your **rectum** and is where stools stay before you go to the toilet. <sup>[1]</sup> If you're Asian you are more likely to get diverticula higher up in your colon. <sup>[2]</sup>

No one knows exactly why people get diverticula, but you may be more likely to get them if you don't eat enough **fibre**. <sup>[3]</sup> Fibre is the part of fruits, vegetables, and grains that your body can't digest.

Without enough fibre you can get **constipated**. Your stools become hard and difficult to pass. If you strain to pass these stools, you put pressure on the inside surface of your colon. Doctors think this can cause diverticula. <sup>[2]</sup>

Your chances of getting diverticular disease increase as you get older. Men and women are equally likely to get it. <sup>[2]</sup>

Men are more likely than women to get it before the age of 40. <sup>[2]</sup>

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The names for conditions that can happen in diverticula can be confusing. Here are some that you may hear about.

- **Diverticulosis:** If you've got diverticula but you don't have any symptoms your doctor may say you have diverticulosis. About 7 in 10 to 8 in 10 people with diverticula have diverticulosis. Doctors may find out about the pouches during tests you're having for another reason (for example, during a screening test for bowel cancer).<sup>[1]</sup>
- **Symptomatic diverticulosis** (also called **diverticular disease**): If you get symptoms from diverticula your doctor may say you have symptomatic diverticulosis or diverticular disease.<sup>[1] [2]</sup>
- **Diverticulitis:** In about 10 in 100 to 25 in 100 people with diverticular disease, the diverticula get **inflamed** or **infected** at some time in their life. This is called diverticulitis. This usually clears up in a few days. But some people need an operation to remove the affected part of their colon.<sup>[4]</sup> If you have diverticulitis you may get serious complications, such as a ball of pus caused by an infection (called an abscess) or a blockage in your bowel that stops you passing stools.<sup>[4]</sup> If you have complications, you may also be given **antibiotics**. To learn more, see [What will happen to me?](#)

### What are the symptoms of colonic diverticular disease?

The most common symptoms of colonic diverticular disease are painful cramps in the lower part of your abdomen, usually on the left side. Your pain may come and go, or it may be constant. It often starts after you've had a meal and gets better when you pass wind or pass a stool.

You may also feel bloated. Or you may notice a change in your bowel habits, with your stools getting looser or, more often, harder.<sup>[4]</sup>

Your doctor will probably use a test called a **barium enema** for finding out whether you have diverticular disease. A barium enema is an **x-ray** of your colon. A thick white liquid that contains the chemical barium is passed through your back passage into your colon to make the x-ray pictures show up more clearly.<sup>[5]</sup>

But the results of this test can be wrong in about one-third of people with diverticula.<sup>[6]</sup>

Most doctors now recommend a test called **colonoscopy** for people with diverticular disease.<sup>[7]</sup> During this test, your doctor will use a thin flexible tube with a light and camera at the end (called a **colonoscope**) to look at the inside of your colon. The tube is put in through your back passage and slowly pushed into your bowel.

You will probably have a colonoscopy in hospital. It can take up to an hour.<sup>[8]</sup> You'll probably be given painkillers and medicine to make you drowsy (a **sedative**) just before the test. You should be able to go home a couple of hours after having the test. But you

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shouldn't drive for a few hours after having a sedative, so you may need someone to take you home. <sup>[8]</sup>

### Bleeding

Sometimes your diverticula can bleed. When this happens, you may see blood in your stools. But this bleeding usually stops by itself and doesn't need treatment. If you get blood in your stools, you should see your doctor. <sup>[1]</sup>

### Inflamed or infected diverticula

If one or more of your diverticula become **inflamed** or **infected**, your doctor will say you have **diverticulitis**.

If you have diverticulitis you may: <sup>[4]</sup>

- Get more severe and constant pain in your lower abdomen, usually on your left side
- Get a high temperature
- Feel sick or vomit
- Get **constipation** or **diarrhoea**.

You can get these symptoms with many other conditions. <sup>[7]</sup> Your doctor will examine you and may test your blood for signs of infection. That may be enough to confirm the diagnosis and start treatment. <sup>[2]</sup> But if your doctor isn't sure whether you have inflamed diverticula, they may refer you to hospital for more tests. <sup>[2]</sup>

If the pain in your abdomen is very bad, you may have an x-ray of your chest and abdomen. <sup>[2]</sup> But the best test for diverticulitis is a computed tomography scan (also called a **CT scan**, or CAT scan). <sup>[2]</sup> In this test, doctors use x-ray equipment linked to a computer (a CT scanner) to produce clear pictures of your colon. <sup>[9]</sup> The CT scanner is a large, square machine with a hole in the middle. You lie inside the machine, and an x-ray tube moves around your body to take pictures. <sup>[9]</sup>

Having a CT scan isn't painful. You'll probably have some dye put into your body before the test to make the lining of your colon show up more clearly on the scan. Most people are given the dye as a drink or as an injection. <sup>[2]</sup> The scan takes between five minutes and 30 minutes.

### How common is colonic diverticular disease?

Diverticula are small pouches of tissue that bulge outwards from your gut wall. They are most common in older people.

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In the UK, doctors believe that: <sup>[10]</sup>

- About 5 in 100 people in their 40s have diverticula
- About 50 in 100 people in their 80s have diverticula.

About 20 in 100 people who have diverticula get symptoms (when it's called **diverticular disease**). <sup>[11]</sup>

Diverticular disease has been called a 'disease of Western civilisation', because it is most common in the United States, Europe, and Australia. It's almost unknown in parts of Africa and Asia. <sup>[12]</sup> <sup>[3]</sup> This backs up the idea that diverticula have something to do with the Western diet, which tends to be low in fibre. Western vegetarians who eat a lot of fibre are less likely to have diverticula than Western non-vegetarians. <sup>[13]</sup>

### What treatments work for colonic diverticular disease?

There are quite a few treatments for diverticular disease and diverticulitis (when there's inflammation in your colon). But there hasn't been much research to show whether these treatments work.

### Key points about treating colonic diverticular disease and diverticulitis

- Having antibiotic treatment can help the symptoms of diverticulitis.
- Taking antibiotics with fibre supplements may help more than taking fibre supplements on their own.
- We can't say for certain whether any of the other treatments work because there hasn't been enough research on them.

## Treatment Group 1

### Treatments for colonic diverticular disease and diverticulitis

#### Treatments that are likely to work

- [Antibiotics](#)

#### Treatments that need further study

- [Bran and ispaghula husk](#)
- [Eating more fibre](#)
- [Lactulose](#)

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- [Methylcellulose](#)
- [Bowel surgery](#)

### What will happen to me?

If your diverticula become inflamed or infected (called diverticulitis) you may be treated at home with antibiotics. But if you don't get better, you may need treatment in hospital.

If you have diverticula that don't give you any problems, you probably won't be offered any treatment. This is because you're unlikely to get ill. <sup>[2]</sup>

### If you have symptoms

Once you've got diverticula, they don't go away. But many doctors think that you can stay well and stop more diverticula forming by eating more **fibre**. <sup>[14]</sup>

Fibre is the part of fruits, vegetables, and grains that your body doesn't digest. When you don't eat enough fibre, you can get **constipated**, with hard stools that are difficult to pass. Doctors think that when you strain to pass these hard stools, the pressure in your **colon** causes diverticula. <sup>[1]</sup> High-fibre foods make your stools softer and easier to pass through your colon. This reduces pressure inside your colon.

Doctors think that fibre from fruit and vegetables may be better at preventing diverticula than fibre from cereals. <sup>[15]</sup> Some doctors advise people who have diverticula but no symptoms to eat more fruit and vegetables high in fibre. <sup>[16]</sup> These include:

- Apples and pears
- Carrots, spinach, squash, and broccoli
- Potatoes
- Baked beans and kidney beans.

It's best to increase the amount of fibre you eat gradually over a few weeks. Some people who eat more fibre feel worse before they start to feel better. This is because eating more fibre can make you feel bloated and uncomfortable at first. <sup>[1]</sup> Your doctor may suggest you take a fibre supplement or a bulking agent (a **laxative**) such as [bran or ispaghula husk](#), or [methylcellulose](#), especially if you find it difficult to eat a high-fibre diet.

Some doctors think that exercise, such as jogging and running, may also stop you getting diverticular disease. But there's no evidence from research for this. <sup>[17]</sup>

You can take painkillers to help with abdominal pain. Paracetamol is probably best. You shouldn't take codeine, because it can cause constipation. And **nonsteroidal**

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anti-inflammatory drugs (NSAIDs), such as aspirin and ibuprofen, may increase the chances of bleeding in your diverticula. <sup>[18]</sup>

### If you have inflamed or infected diverticula

If one or more of your diverticula become inflamed or infected (when it's called **diverticulitis**) and you don't feel too ill, your doctor will probably look after you while you're at home. You may be treated with antibiotics to fight the infection. And you'll be put on a liquid diet to rest your colon. <sup>[4]</sup>

You may need to be looked after in hospital if: <sup>[4]</sup>

- Your pain is very bad
- You have a severe infection
- You can't keep fluids down
- You are over 85
- You have another illness
- You haven't got any better after being treated at home.

In hospital, you'll probably be given fluids and antibiotics by injection into one of your veins. Most people treated in hospital for diverticulitis get better with this kind of care. But between 15 in 100 and 30 in 100 people need an [operation](#) to remove the affected part of their colon. This is sometimes because the antibiotics haven't worked or because of complications. <sup>[19]</sup>

About two-thirds of people who have had diverticulitis keep getting some pain in their abdomen after they have recovered. <sup>[20]</sup> Up to 40 in 100 people have another attack of diverticulitis within the next five years. <sup>[21]</sup>

### Complications of diverticulitis

These are the main complications you can get with diverticulitis. <sup>[1]</sup>

#### Abscess

This is a ball of infection and pus that may cause swelling and also damage your colon. If the abscess is small, it may clear up with antibiotic treatment. But if the abscess doesn't go away, you may need an operation to drain away the infected fluid. Your doctor will insert a needle through your skin and drain the fluid through a small tube called a catheter. Occasionally, you may need a bigger operation to clean the abscess and, if necessary, to remove the diseased part of your colon.

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## Fistula

This is an abnormal connection of tissue between your colon and other nearby organs, such as your bladder, your small intestine (gut), or your skin. The most common type of fistula connects your bladder and your colon. Men are more likely to have this type of fistula than women. It can cause bad bladder infections. But your fistula can be cured by an operation to remove the fistula and the affected part of your colon.

## Obstruction

If your diverticula have got infected, you may have scarring that can block your colon and stop your stools moving normally. You'll probably need an operation to unblock your bowel. If it's only partly blocked, the operation can be planned in advance. But if your bowel is totally blocked, you'll need an emergency operation.

## Peritonitis

This is a very serious but rare illness that happens if the infection spreads outside your colon and into the space outside your gut. You'll probably have an emergency operation to clean the space and remove the damaged part of your colon. Without an operation, people who get peritonitis can die.

## If you have repeat attacks of diverticulitis

About one-third of people who have had an attack of diverticulitis and don't get complications, get a second attack.<sup>[22]</sup> A second attack is usually more serious than the first and is harder to treat. After a second attack, your chance of a third attack is more than 1 in 2.<sup>[4]</sup>

Because of this increased risk, some doctors recommend that people who have had two attacks should have an operation to remove the diseased part of their colon.<sup>[22]</sup> The younger you are, the more likely you are to be offered an operation because diverticulitis tends to be more serious in younger people. The chance of repeat attacks and complications is higher in younger people.<sup>[22]</sup>

To learn more, see [Surgery to remove part of your colon](#) .

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## Treatments:

### Antibiotics

In this section

If your diverticula (the pouches of tissue that poke out of your gut wall) become **inflamed** or **infected** , it means you have **diverticulitis**.

If your symptoms are very bad you'll probably be treated in hospital. You'll probably be given antibiotics through a drip (an **intravenous infusion** or IV) straight into your bloodstream.



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You'll probably be given antibiotics to treat this condition. We know antibiotics work for complicated diverticulitis. (Diverticulitis is said to be complicated if there is a hole in the colon, bleeding, a large abscess or other problem that may need surgery.) However, there hasn't been much research on this treatment. This is because it wouldn't be ethical to do a study and not give some people antibiotics when we know they work. We don't know if antibiotics work for uncomplicated diverticulitis. (Diverticulitis is said to be uncomplicated if there are no serious problems in the colon, such as bleeding or a large abscess.) Studies have found different results.

One summary of the research (called a [systematic review](#))<sup>[26]</sup> found one good-quality study that compared taking antibiotics with not taking antibiotics for uncomplicated diverticulitis. The study didn't find any benefit in taking antibiotics.

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### Bran and ispaghula husk

In this section

Bran and ispaghula husk are types of [laxatives](#). They are also fibre supplements. They increase the size of your stools so that they are easier to pass. But you need to make sure you drink plenty of fluids when you take laxatives.

You can buy unprocessed wheat bran and various products containing ispaghula husk from a pharmacy or a health food shop. Some brand names are:

- Fibrelief
- Fybogel
- Isogel
- Regularan.

One small study found that neither eating bran nor taking ispaghula husk helped with symptoms of diverticular disease.<sup>[27]</sup>

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### Eating more fibre

In this section

Some doctors advise people with diverticular disease to eat more foods that are high in fibre to prevent [complications](#). But we can't say for certain whether this works because there hasn't been much research.

Foods that are high in fibre include:

- Apples and pears

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- Carrots, spinach, squash, and broccoli
  - Potatoes
  - Baked beans and kidney beans
  - Wholegrain cereals.
- 

### Lactulose

In this section

Lactulose is a laxative that's used to treat **constipation**. We can't say whether lactulose helps people with diverticular disease because there hasn't been enough research.

You can buy lactulose from a pharmacy. The brand name is Regulose. It comes as a liquid either in bottles or sachets.

In one study, 2 in 20 people stopped taking lactulose because of side effects. One person had pain in their abdomen and the other person felt sick.<sup>[28]</sup> Lactulose can also cause wind and stomach cramps.<sup>[29]</sup>

One small, good-quality study found that taking lactulose worked about as well as [eating lots of fibre](#). After 12 weeks, nearly half the people who took lactulose and those who ate lots of fibre felt much better.<sup>[28]</sup>

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### Methylcellulose

In this section

The laxative methylcellulose comes as tablets. You can buy it from a pharmacy without a prescription. The brand name is Celevac.

Methylcellulose can cause wind and abdominal pain.<sup>[30]</sup> We can't say whether taking methylcellulose helps your symptoms of diverticular disease because there hasn't been enough research. One small study found that taking methylcellulose for three months made no difference to people's symptoms.<sup>[31]</sup>

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### Bowel surgery

In this section

If you have some symptoms of diverticular disease, but [haven't had any serious problems](#) (such as an abscess), then we're not sure whether surgery to remove part of your **colon** will help you. This is because there hasn't been much research on this. Also, there are risks with this type of surgery, and you need to weigh these against the possible benefits.

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If you get a serious infection called peritonitis after diverticulitis, you will probably have surgery. Peritonitis is a rare illness that happens when the infection spreads outside your colon and into the space outside your gut. You'll probably have an operation to clean the space and remove the damaged part of your colon. We know surgery works and can save your life. But there hasn't been much research. This is because it wouldn't be ethical to do a study and not operate on some people with peritonitis when we know surgery works.

To learn about what happens during your operation, see [Surgery to remove part of your colon](#) .

Two studies in people with peritonitis have looked at the two ways the operation can be done:<sup>[32]</sup> <sup>[33]</sup>

- Removing the diseased part of your colon and reattaching the ends in one operation
- Removing the diseased part of your colon in one operation and then putting the ends back together in another operation some time later.

Studies show mixed results. So we need more research to say whether having one or two operations is safer.

One study looking at people with diverticulitis compared surgery through a large cut (open surgery) with keyhole surgery (laproscopic surgery).<sup>[25]</sup> Keyhole surgery caused fewer side effects (complications). People also had less pain and a shorter stay in hospital after keyhole surgery. However, the operation itself took longer. Keyhole surgery is complicated, so some patients ended up being switched to open surgery during the operation.

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### Further informations:

#### **Surgery to remove part of your colon**

If you've having surgery for diverticulitis, your surgeon will cut out the damaged part of your colon and join the healthy parts back together. This is called **colonic resection**.<sup>[1]</sup>

You may need an emergency operation because of bad infection or blockage in your colon. This operation is sometimes done in two parts. This is because it may not be safe to rejoin your colon straight away. Instead, you'll have the operation to join your colon back together a few months after the diseased part has been removed.

In the time between the two operations, the end of your colon will be connected to a temporary hole in your abdomen called a stoma . Your stools will go into a bag attached

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to the stoma. This is called having a colostomy .<sup>[1]</sup> Only about 1 in 6 people still get problems with diverticula after this type of operation.<sup>[23]</sup>

If you're having a planned operation (a non-emergency operation) for diverticular disease, you may have laparoscopic surgery (also called **keyhole surgery**). This is when your surgeon makes very small cuts in your abdomen and uses a narrow tube with a camera to see your colon. To remove the diverticula, your surgeon will pass small operating tools through other small cuts in your abdomen. People who have this kind of surgery usually have less pain and recover more quickly than people who have surgery through a large cut in their abdomen.<sup>[24]</sup> One study found that people who had keyhole surgery were also less likely to have serious problems, such as bleeding, after their surgery.<sup>[25]</sup> However, we need more research to say which type of surgery is safer.

### Glossary:

#### **gastrointestinal**

Relating to the parts of the body that take food from the mouth to the anus including the oesophagus, stomach, and small and large intestines.

#### **colon**

Your colon is the first 2 metres (6 feet) of your large intestine. During digestion, food travels from your stomach to your small intestine and then to your large intestine. What's not digested then leaves your body as a stool.

#### **rectum**

The rectum is the last 15 to 20 centimetres (six to eight inches) of the large intestine, ending with the anus (where you empty your bowels from).

#### **fibre**

Fibre is all the parts of food that the body can't absorb. This is why foods that are high in fibre make you have more bowel movements. When your body can't absorb something, it leaves your body in your stools. Foods high in fibre include wholemeal bread and cereals, root vegetables and fruits.

#### **constipated**

When you're constipated, you have difficulty passing stools (faeces). Your bowel movements may be dry and hard. You may have fewer bowel movements than usual, and it may be a strain when you try to go.

#### **inflammation**

Inflammation is when your skin or some other part of your body becomes red, swollen, hot, and sore. Inflammation happens because your body is trying to protect you from germs, from something that's in your body and could harm you (like a splinter) or from things that cause allergies (these things are called allergens). Inflammation is one of the ways in which your body heals an infection or an injury.

#### **infection**

You get an infection when bacteria, a fungus, or a virus get into a part of your body where it shouldn't be. For example, an infection in your nose and airways causes the common cold. An infection in your skin can cause rashes such as athlete's foot. The organisms that cause infections are so tiny that you can't see them without a microscope.

#### **antibiotics**

These medicines are used to help your immune system fight infection. There are a number of different types of antibiotics that work in different ways to get rid of bacteria, parasites, and other infectious agents. Antibiotics do not work against viruses.

#### **X-ray**

X-rays are pictures taken of the inside of your body. They are made by passing small amounts of radiation through your body and then onto film.

#### **colonoscopy**

A colonoscopy is a way for your doctor see the inside of your colon and rectum. A tube called a colonoscope is put into your bowel through your anus. A camera at the end of the tube shows your colon and rectum on a screen. If your doctor finds any small polyps or cancers, he or she may be able to remove them using a wire attached to the end of the colonoscope. However, large polyps and cancers may need surgery.

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## **sedation**

A feeling of relaxation and calm, or the act of creating a feeling of calm by administering a drug.

## **diarrhoea**

Diarrhoea is when you have loose, watery stools and you need to go to the toilet far more often than usual. Doctors say you have diarrhoea if you need to go to the toilet more than three times a day.

## **CT scan**

A CT scan is a type of X-ray. It takes several detailed pictures of the inside of your body from different angles. CT stands for computed tomography. It is also called a CAT scan (computed axial tomography).

## **laxative**

Laxatives are medicines that empty your bowels by making you go to the toilet more often than usual.

## **NSAIDs**

NSAID stands for nonsteroidal anti-inflammatory drug. NSAIDs help with pain, inflammation and fever. They are called 'nonsteroidal' because they don't contain any steroids. Aspirin and ibuprofen are both NSAIDs.

## **veins**

Veins are blood vessels that carry blood back to your heart after your blood has delivered oxygen and food to the tissues.

## **stoma**

A stoma is an opening created by a surgeon through part of a person's body. If you've had part of your bowel or rectum removed, you may have a stoma put temporarily or permanently in the skin of your abdomen so that you can get rid of waste material (faeces) from your intestines.

## **colostomy**

A colostomy provides a way for food waste to safely leave your body if your rectum has been removed or if your colon and rectum aren't working properly. Your surgeon creates a new opening for your colon (usually on your abdomen) so that your faeces can be collected in a bag called a colostomy bag.

## **intravenous infusion**

When a medicine or a fluid, such as blood, is fed directly into a vein, it's called an intravenous infusion (or IV). To give you an intravenous infusion, a nurse, technician or a doctor places a narrow plastic tube into a vein (usually in your arm) using a needle. The needle is then removed and the fluid is infused (or dripped) through the tube into the vein.

## **systematic reviews**

A systematic review is a thorough look through published research on a particular topic. Only studies that have been carried out to a high standard are included. A systematic review may or may not include a meta-analysis, which is when the results from individual studies are put together.

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