

Patient information from the BMJ Group

Bowel cancer

In this section

[What is it?](#)

[What are the symptoms?](#)

[How is it diagnosed?](#)

[How common is it?](#)

[What treatments work?](#)

[What will happen?](#)

[Questions to ask](#)

Bowel cancer

Bowel cancer (colon and rectal cancer) is a serious disease, but it can be cured if it is caught early enough.

We've brought together the best research about bowel cancer 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 bowel cancer?

Your bowels help to break down the food you eat. Cancer that affects this part of your body may not cause any symptoms at first. So, finding out you have it can be a shock.

Parts of your bowel are called your colon and rectum. So you may hear bowel cancer called **colon cancer**, **rectal cancer**, or **colorectal cancer**.

The cancer begins because some cells in the inside wall of the bowel start growing and dividing in an uncontrolled way, and damage the surrounding cells. You can get treatment to try to remove or kill the cancer and stop it spreading to other parts of your body.

If you've been told you have colon or rectal cancer, you'll probably have lots of questions about your illness and what might happen to you. Learning about your disease may reassure you and help you cope. Bowel cancer is a serious condition, but there are good treatments.

Some people who have colon or rectal cancer say that, when they have got over the shock, they find their illness has helped them focus on the things that mean a lot to them, such as their family and other important relationships. ^[1]

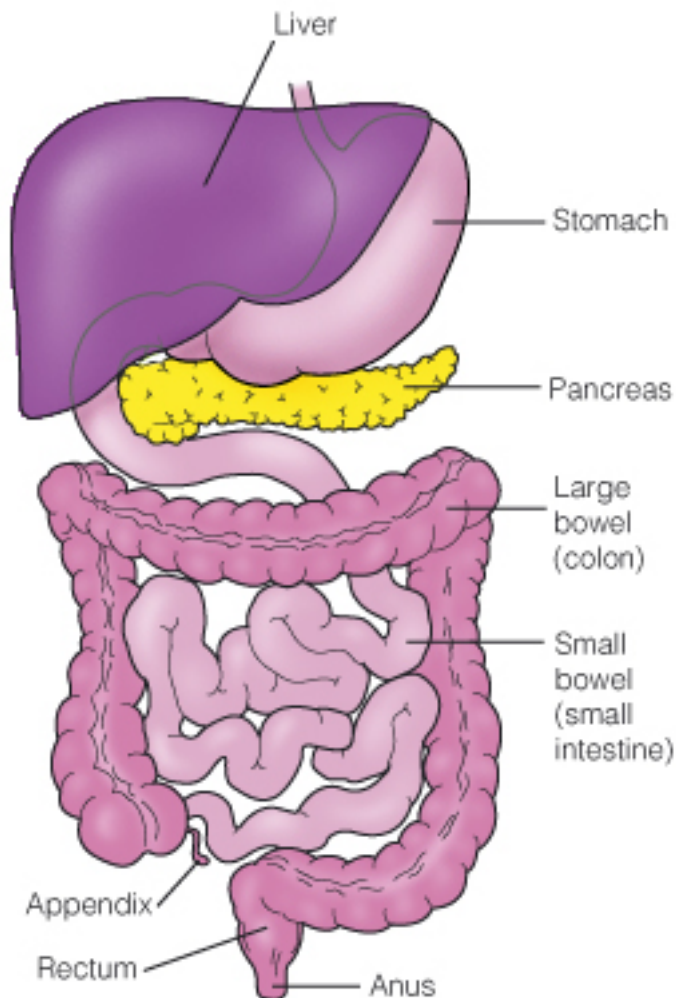
Key points for people with bowel cancer

- Anyone can get bowel cancer, but it's more common in people over 50.
- When you first get bowel cancer, you may not have any symptoms.
- Most people need surgery to get rid of the cancer.

Bowel cancer

- You may also need radiotherapy or chemotherapy.
- Older people can have screening tests to help spot the cancer early on. To read more, see our information on [Bowel cancer screening](#) .

Your bowels



Your colon, rectum and anus make up the lower part of your digestive system.

Your intestines are part of your digestive system. This is the group of organs that break down the food you eat. The part right below your stomach is called the **small intestine** or the small bowel. It's a narrow tube about 6 metres (20 feet) long.

Your small intestine leads into your **large intestine** (also called the large bowel), which is about 2 metres (7 feet) long, and much wider than the small intestine.

Your colon is the first 2 metres (6 feet) of your large bowel. Your rectum is the last 20 to 25 centimetres (8 to 10 inches) of your large bowel.

Bowel cancer usually grows in the large bowel. It is rare in the small bowel.

Bowel cancer

For more, see [More about your colon and rectum](#) .

What happens if I have bowel cancer?

Your bowels are mostly made of a layer of muscle. The inner lining is a thin layer of cells called the **mucosa**. Cells in this lining have a short life. They grow, divide in two, then die and get replaced. Your body carefully controls this activity so that cells are replaced every five days or so.

But sometimes things go wrong. Cells keep dividing when they don't need to, and old ones don't die. If this happens, you can get a cluster of extra cells called a tumour. Some tumours are made up of normal cells and they aren't dangerous. Doctors call them benign tumours. They stay put and don't cause any problems. But other tumours are made up of cancer cells. Doctors call these malignant tumours.

Cancer cells are different from healthy cells in several ways.

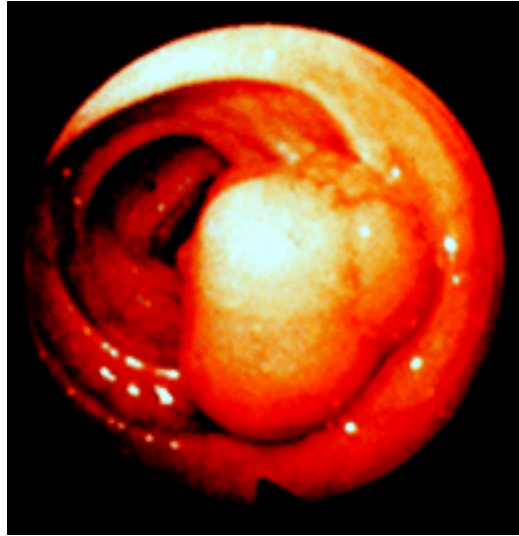
- They grow faster.
- They don't grow in an orderly way.
- They stay 'immature'.
- They don't stop growing when they touch other cells.
- They grow in the wrong place.

Cells in tumours can break away and move to other parts of your body. These breakaway cells are carried in your bloodstream or in your **lymphatic system** . When the cancer cells arrive at a different part of your body, they can start growing into another tumour. When cancer spreads like this, it's called **metastasis**. Blood from your bowel goes to your **liver** , so this is where colon and rectal cancer cells might travel.

What are polyps?

At least two-thirds of colon and rectal cancers start inside lumps of cells called **polyps**. These are small growths on the inside of the bowel walls.

Bowel cancer



Polyps grow from the lining of the colon and rectum.

A polyp is a harmless, fleshy lump (a benign tumour), but it can turn into cancer (a malignant tumour).

Some doctors think that taking these polyps out makes it much less likely that you'll get colon or rectal cancer. ^[2] ^[3]

To read more, see [Bowel cancer screening](#) .

Here's what we know about polyps.

- It can take as long as 10 years for cancer to grow in a polyp. This seems to happen more quickly in the rectum than in the colon. ^[4]
- Some polyps are more likely than others to turn into cancer. Polyps that are less than a quarter of an inch wide are very unlikely to turn into cancer. But about half the polyps that are more than an inch wide turn into cancer. ^[5] The more polyps you have, the more likely it is that you'll get cancer.
- Between 3 in 10 and 4 in 10 people in Western countries will get polyps. ^[6] But fewer than 1 in 10 of the polyps will grow into cancer. ^[7]

Stages of bowel cancer

Your doctor will need to find out how advanced your cancer is. This is called staging your cancer. The doctor will check how big your cancer is and how far it has spread. These tests help doctors choose the best treatment for you.

Your doctor will also look at a few of the cancer cells under a microscope. This is called grading your cancer. The more 'normal' the cells look, the less severe your cancer. If the cancer cells look very unlike normal cells, it can mean the tumour is growing quickly.

Bowel cancer

For more, see [What stage is your cancer?](#)

Bowel cancer: why me?

It's hard to say why some people get bowel cancer and others don't. Some kinds of cancer run in the family. Other factors play a part too, such as your age.

Doctors call things that make it more likely you will get a condition **risk factors**. Bear in mind that having a risk factor doesn't mean you will get bowel cancer.

Factors that may increase your risk

Your family history

If you have a close relative who has had bowel cancer, your chances of getting the disease are increased.

If no one in your close family has had colon or rectal cancer, your chances of getting this type of cancer are 1 in 50.^[7]

But if one of your parents, a brother, a sister or a child has had colon or rectal cancer, your risk increases to about 1 in 17. The more relatives you have with the disease, the bigger your risk becomes.^[7] If you have a close relative who was younger than 45 when diagnosed, your risk increases to roughly 1 in 10.

Some inherited conditions can lead to colon and rectal cancer. (When a condition is inherited, this means that it can be passed on from parent to child.) Two particularly important ones are familial adenomatous polyposis (FAP for short) and hereditary non-polyposis colorectal cancer (HNPCC for short). For more, see [Inherited conditions that can lead to bowel cancer](#) .

Getting older

Your chances of getting colon or rectal cancer increase as you get older, especially after you've reached age 50. More than 8 in 10 people who have colon or rectal cancer are aged 60 or over.^[8]

What you eat

Scientists have found that colon and rectal cancer is more common in developed countries like England than in undeveloped countries. They think the reason may be a high-calorie diet, especially one that's rich in meat, fat, and oil.^[9] The type of fat seems to be important. A diet rich in animal fat and red meat (but not vegetable fat) seems to increase the risk of colon and rectal cancer. However, fish oils may protect you from this cancer.^[10]

The role of **fibre** in the development of colon and rectal cancer is less clear. Scientists used to think that eating fibre protected you from this disease. They thought it helped move waste (**faeces**) through the colon and rectum more quickly. This meant that possibly harmful materials in the faeces were in contact with intestine wall for less time.

Bowel cancer

But, because of new research findings, most scientists no longer think that fibre protects against bowel cancer. Eating more fibre has not been shown to speed up the passage of faeces, for example. ^[9]

Diseases

If you have an inflammatory disease of your bowels, you're more likely to get colon or rectal cancer. These diseases include [ulcerative colitis](#) and [Crohn's disease](#). Also, the longer you have one of these diseases, the greater your risk of getting colon or rectal cancer. Research shows that up to one third of people who've had one of these diseases for more than 25 years will get colon or rectal cancer. ^[9] The reason for this is unclear.

Smoking

Smoking can increase your risk, especially if you've smoked for more than 35 years. No one knows how smoking makes you more likely to get this cancer. ^[9]

Other factors

Drinking alcohol every day can increase your risk of getting colon or rectal cancer, but no one knows why. You may also be more at risk if you're overweight, especially if you carry your extra weight around your middle. However, regular exercise and eating less may protect you against this cancer. ^[10]

Factors that may decrease your risk

Certain things can decrease your risk of getting bowel cancer.

Hormone replacement therapy

Some women take [hormone replacement therapy](#) (or HRT for short) during the [menopause](#) to help their hot flushes and other symptoms. HRT may also reduce your risk of colon and rectal cancer, although this lowered risk disappears five years after you stop the treatment. ^[10] However, HRT also increases the risk of getting some conditions, including breast cancer and heart disease.

The contraceptive pill

Taking the contraceptive pill also seems to offer some protection against colon and rectal cancer. ^[10]

Aspirin and other NSAIDs

There is some evidence that aspirin and other [nonsteroidal anti-inflammatory drugs](#) (NSAIDs) might protect you from colorectal cancer. ^[10] ^[11] However, some of these drugs have been linked with serious side effects. If you take an NSAID for a long time, it may slightly increase your risk of a heart attack or a stroke. This risk doesn't apply for aspirin.

Bowel cancer

NSAIDs and aspirin can also cause stomach **ulcers** if taken for a long time. For these reasons, doctors do not yet recommend taking aspirin or other NSAIDs to prevent colon and rectal cancer.

What stage is your cancer?

Your doctor will want to know whether your cancer has spread. This is because your treatment will be based on how far the cancer has moved around your body.

Doctors use numbers and letters to describe how far your cancer has spread. This is called 'staging'. The two most common systems for staging colon and rectal cancer are the **Dukes' classification system** and the tumour, node, metastasis, or **TNM system**. Your doctor will probably use the TNM system more than the Dukes' system. The TNM system is international.

Here's an overview of the two systems and how they relate to one another.

The Dukes' classification system

This system has been used for many years.^[12] It classifies bowel cancers according to:

- How far the tumour has spread into the wall of your colon or rectum
- Whether or not the cancer has spread to your **lymph nodes**
- Whether or not the cancer has spread to any other parts of your body (this is called **metastasis**).

Here's what the different stages mean.

Dukes' type	What it means
A	Your cancer has not spread beyond the inner wall of your colon or rectum.
B	Your cancer has spread into the muscle layer of your colon or rectum.
C	Your cancer has spread to one or more lymph nodes in the area.
D	Your cancer has spread to your liver, bone, or lung. (The cancer has metastasised.)

The tumour, node, metastasis (TNM) system

The TNM system is more detailed than the Dukes' system, although both methods look at similar things.^[13] ^[14]

In the TNM system:

- T is for tumour

Bowel cancer

- N is for (lymph) nodes
- M is for metastasis.

Each letter is also given a number.

- For T: the number tells you how big the tumour is.
- For N: the number tells you which lymph nodes have cancer cells in them.
- For M: the number tells you whether your cancer has spread outside your colon or rectum. Cancer usually spreads to the nearest lymph nodes and then to other parts of the body.

In general, lower numbers mean your cancer is less serious.

	TNM code	What it means
T (tumour)	T0	There is no evidence of a tumour.
	Tis	Your cancer hasn't spread beyond the first layer of cells in your colon or rectum wall. This is also called cancer in situ .
	T1	Your cancer has reached the innermost layers of your colon or rectum wall.
	T2	Your cancer has spread into the muscle layer of your colon or rectum wall.
	T3	Your cancer has spread beyond the muscle layer of your colon or rectum wall.
	T4	Your cancer extends from your colon or rectum wall into other tissues next to it or into another part of your bowel.
N (regional lymph nodes)	N0	Your cancer has not spread to the nearest lymph nodes.
	N1	Your cancer has spread to one, two, or three lymph nodes nearby.
	N2	Your cancer has spread to four or more lymph nodes nearby.
M (distant metastasis)	M0	Your cancer has not spread to another part of your body.
	M1	Your cancer has spread to another part of your body. (This may mean it has spread to lymph nodes in another part of your body or to another organ, such as your liver.)

Bowel cancer

If your colon cancer is staged as T1N0M0, it means that your cancer hasn't spread further than the first layer of cells in your colon. It has not spread to the lymph nodes nearest to it, and it has not spread anywhere else in your body. This is also called stage 1.

Simplifying the TNM system: stages 0, 1, 2, 3, and 4

There is another step to working out how advanced your cancer is. A group of experts called the International Union Against Cancer has a way of simplifying the TNM system. In their staging, stage 0 is the least severe cancer and stage 4 is the most severe cancer.

The table shows how the TNM codes and stages match up with the Dukes' stages. ^[5]

TNM code	Dukes' stage	TNM stage
Tis, N0, M0	---	0
T1, N0, M0	A	1
T2, N0, M0	B	1
T3, N0, M0	B	2
Any T, N1, M0	C	3
Any T, Any N, M1	D	4

What are the symptoms of bowel cancer?

You might not notice any symptoms in the early stages of bowel cancer. It usually starts by growing slowly on the inside wall of the bowel.

There are some things you might notice.

- A change in your bowel habits that lasts for six weeks or more. You might have looser bowel movements or diarrhoea, need to go more often or become constipated. ^[15]
- Blood (either bright red or dark spots) in your stools. But most people with blood in their stools don't have cancer; they have piles (haemorrhoids).
- Your bowel might feel as though it doesn't empty properly.
- You might have painful cramps, bloating and wind in your lower stomach.
- You might feel tired and look pale (you may be anaemic).
- You might feel sick.
- Your stools might be thinner than usual (because the cancer has made the bowel narrow).
- You might lose your appetite.

Bowel cancer

These symptoms are often due to things that aren't bowel cancer. But you should see your doctor if you are having them, particularly if you are over 45 or if a close family member has had bowel cancer. This is when the risk of bowel cancer rises. If you do have bowel cancer, the sooner you get treatment, the better your chances of surviving.

Younger people are more likely to notice their symptoms, but older people are more likely to see their GP quickly.^[16] Around 1 in 4 people don't go to their doctor until the cancer has blocked their bowel and they need urgent treatment.

How do doctors diagnose bowel cancer?

It's best to see your GP if you have any bowel problems that are worrying you. Your problems may not be cancer, but it's important for your GP to find out the cause.

When to see your GP

If you have any of the symptoms described here, you should visit your doctor. Don't wait to see if the symptoms go away.^[15] Symptoms that might happen if you have colon or rectal cancer are:

- A change in your bowel habits that lasts for six weeks or more (for example, looser or more frequent bowel movements, **diarrhoea** , or **constipation**)
- Blood (bright red or dark spots) in your stools
- A feeling that your bowel hasn't emptied properly
- Painful cramps, bloating and wind in your lower stomach
- Feeling tired and looking pale
- Feeling sick
- Thinner stools than usual
- Loss of appetite.

These symptoms may be due to things that aren't bowel cancer. For example, if you notice blood on the toilet paper when you have a bowel movement, it's much more likely to be caused by piles (**haemorrhoids**) than caused by cancer. This doesn't mean you should ignore it. You should still tell your GP about these symptoms. Your GP will ask questions about your symptoms to try to find out what is causing them.

If you do have bowel cancer, the sooner you get treatment, the better your chances of surviving.

Bowel cancer

Questions your GP might ask

Your GP will probably ask you questions like these.

- Have you noticed any blood in your stools, in the toilet or on the toilet paper when you have a bowel movement?
- Has this ever happened before?
- Do you have or try to have more bowel movements than you used to?
- Are your bowel movements looser than they used to be?
- Do they hurt at all?
- How long has this been going on?
- Do you ever feel sick or get indigestion?
- How's your appetite? Are you eating as much as usual?
- What sorts of things do you eat?
- How much fruit and vegetables do you eat?
- Do you get more tired than you used to?
- Do you have any other aches and pains?

Your GP will also examine you. This will probably include:

- Feeling for swelling around your stomach or in your abdomen, particularly on the right side
- Putting a gloved finger in your back passage (rectum) to feel for any lumps that could be cancerous.

Tests your GP might order

Your GP might want to do the following tests.

- A blood test to check for **anaemia**. If you are bleeding inside from a tumour or for another reason, you can become anaemic. This is when you feel tired and look pale. It happens because you don't have enough **red blood cells** in your body.
- A stool test (called a faecal occult blood test) to look for signs of blood in your faeces. Sometimes you can't see blood just by looking at your stools, so you need to provide

Bowel cancer

a bit of a stool to be looked at in a laboratory. To learn more about this test, see our information on [Bowel cancer screening](#).

When you should see a specialist

If your GP thinks that you could have cancer, he or she should refer you urgently to a hospital consultant or specialist clinic. You should get an appointment within two weeks of going to the GP. ^[22]

You are most likely to be referred if any of the following are true. ^[22]

- You have a swelling in the right side of your abdomen that your GP can feel.
- You have a lump in your rectum that your GP can feel.
- You're 60 or over and you have had bleeding from your rectum and a change in your bowel habits that have lasted for six weeks or more.
- You're 60 or over and you have had bleeding from your rectum for six weeks or more. But you don't have piles or a tear around the opening to your back passage (anus) that could be bleeding.
- You're 60 or over and you've had a change in bowel habits (looser or more frequent stools) for more than six weeks.
- You're a man and have anaemia for no obvious reason.
- You're a woman and have anaemia and you don't have periods.

If your GP doesn't think it could be cancer, you may still be referred to a specialist, but the appointment won't be so urgent, and it will probably take longer to see someone. Remember that most people who are referred to see a bowel specialist, including many of those who have an urgent referral, are found not to have cancer.

Seeing a specialist

Like your GP, the specialist will ask you about your symptoms and examine you. This examination will probably include:

- Feeling for swelling around your stomach or in your abdomen, particularly on the right side
- Putting a gloved finger in your back passage to feel for any lumps that could be cancer.

Bowel cancer

The specialist will also arrange some tests to look inside your bowel. You should have a test called an **endoscopy**.^[23] This is the most accurate way of diagnosing early cancers. It works better than another test called a barium enema, which uses **x-rays**.

The endoscopy involves putting a flexible tube with a light and a viewing lens or camera into your anus to see inside your bowel. You can have an endoscopy called a **flexible sigmoidoscopy**, which examines just the last third of your large bowel. Or you can have an endoscopy called a **colonoscopy**, which examines your entire large bowel. You might also have an endoscopy called a **proctoscopy**, which examines your rectum closely.

You'll be given information about eating, drinking, and taking medicines before these tests. The day before you have one of these tests, you'll need to take **laxatives**. These are medicines to empty your bowel.

You shouldn't eat or drink anything on the morning before your test. Just before your test, you might have a bowel wash-out (enema) to help you get rid of any stools that are still there.

All of this will help the specialist to get clearer pictures inside your colon and rectum.

Tests for bowel cancer

Some of these tests are uncomfortable and you may feel embarrassed about what happens. For example, you may get a lot of wind or be unable to control what comes out of your back passage during your tests. You can take medicines to help you relax. Remember that the doctors and nurses who look after you understand the problems you are having.

What tests you have will depend on where the specialist thinks you might have cancer, and which tests are most commonly used in your part of the UK.

The National Institute for Health and Care Excellence (NICE), which is the government body that decides which treatments should be available on the NHS, recommends that you have an **endoscopy** to diagnose bowel cancer.^[24] This could be a colonoscopy (which looks at your whole bowel) or a sigmoidoscopy (which looks at only part of it). You should be cared for by a team skilled at treating bowel cancer.

A barium enema

This is when doctors take x-rays of your bowel. A thick, white liquid that contains a chemical called barium will be passed up a tube into your back passage. The barium sticks to the lining of your bowel, and helps things to show up more clearly on the x-ray. A series of x-ray pictures will be taken as the barium liquid passes back down your bowel. Your doctor will check these carefully for any signs of abnormal growths in your bowel.

Your stools may be white for a few days after a barium enema, while the white liquid gets out of your body. This is nothing to worry about.

Bowel cancer

A barium enema was often used in the past to diagnose bowel cancer. But a different test called an endoscopy is a more accurate method. You should have either a colonoscopy or a sigmoidoscopy to find out whether you have this cancer. ^[24]

Proctoscopy

This is a kind of endoscopy. The doctor puts a small viewing tube called a proctoscope into your back passage to look inside your rectum. A light inside the proctoscope shines inside your back passage so that your doctor can check for abnormal growths. It can be uncomfortable to have this test, but it shouldn't hurt.

Sigmoidoscopy

This allows your doctor to look further into your bowel. This is a kind of endoscopy.

Your doctor will use a viewing tube called a sigmoidoscope, which is put into your rectum and the lower part of your colon. The doctor may use a flexible sigmoidoscope, which allows him or her to look around bends in your colon and to go further up. It's also more comfortable for you.

Like the proctoscope, the sigmoidoscope has a light that shines inside your bowel. There's a camera on the end of the sigmoidoscope, so the doctor can look at the inside of your bowel on a big screen.

Colonoscopy

This test helps your specialist see inside your whole colon and rectum. This is a kind of endoscopy.

Like the flexible sigmoidoscope, the colonoscope is a flexible tube that is put into your rectum and colon through your anus. Before you have a colonoscopy, you can have a painkiller or medicine to make you sleepy and relaxed. This will make the test more comfortable for you. In fact, you may not remember any of it when you are fully awake again.

We've prepared some extra information for people thinking of having this test. To read more, see [Colonoscopy](#).

Biopsy

During a proctoscopy, sigmoidoscopy, or colonoscopy, your doctor can take a small sample of any growths or other abnormal tissue that he or she finds in your colon or rectum. This is called a biopsy. The tissue can be examined in the laboratory to see if it is cancer.

Small, fleshy lumps in the bowel are called polyps. They are not cancer but they can become cancer. So doctors usually remove them if they see them. To find out more about checking for polyps, see [Bowel cancer screening](#).

Bowel cancer

Further tests

If your doctor finds that you do have cancer in your colon or rectum, you will probably be offered some more tests to see whether it has spread. The results will help your doctor stage your cancer and recommend which treatment will help you most.

To read about the stages of bowel cancer, see [What stage is your cancer?](#)

To help stage your cancer, you may be offered these tests.

- An **ultrasound** scan: this uses sound waves to look inside your abdomen to see if your cancer has spread to your **liver** or another part of your abdomen.
- A **CT scan** : this uses computerised x-rays to build a three-dimensional picture of the organs and tissues inside your abdomen. It can show how big the tumour is and whether it has spread outside your bowel.
- An **MRI scan** : this uses a magnetic field to get very detailed pictures of the inside your body and show whether the cancer has spread.

You may also be offered a blood test for carcinoembryonic antigen (CEA), a protein that is produced by some, but not all, bowel cancers. When you have been diagnosed with bowel cancer, measuring CEA can sometimes help show how well you respond to treatment, and can also help identify cancer if it comes back after treatment.

Screening for bowel cancer

When people first get bowel cancer, they might not have any symptoms, so they don't go to the doctor. This means that often doctors diagnose this cancer when it is more advanced and the person is having symptoms. But older people, who are more at risk of bowel cancer, can have screening tests to spot any cancer earlier.

Regular screening for bowel cancer is now recommended in most of the UK for men and women over age 60. If you're offered screening, you'll be sent a kit to use at home. You scrape a small amount of faeces onto a piece of card, which is sent away for analysis. Some people find this unpleasant, but getting screened cuts your risk of dying from bowel cancer by about 15 percent. ^[25]

In England, a test to examine the rectum and lower bowel is gradually being added to the screening programme. This one-off test, called a flexible sigmoidoscopy or bowel scope, will eventually be offered to all men and women aged 55. ^[26]

To learn more, see [Bowel cancer screening](#) .

How common is bowel cancer?

Bowel cancer is the third most common type of cancer in the UK for men and women.

Bowel cancer

In men, only lung cancer and prostate cancer are more common than colon and rectal cancer. In women, only breast cancer and lung cancer are more common. ^[8]

Around 40,700 people are diagnosed with bowel cancer each year in the UK. ^[8] Your GP will probably see one new person with the disease a year.

More than 8 in 10 cancers of the bowel happen in people aged 60 and over. ^[8] Only 1 percent of these cancers are in people under the age of 40. ^[17]

What treatments work for bowel cancer?

Cancers that grow in your bowel are treatable. You have a good chance of being cured if the cancer hasn't spread outside the wall of your colon or rectum. Your colon and rectum are parts of your bowel.

You may hear bowel cancer called **colon cancer**, **rectal cancer**, or **colorectal cancer**. It's a serious condition, but there are good treatments. You may not get any symptoms to start with, so finding out that you have cancer can be a shock.

Surgery is the main treatment. When the cancer is caught early it can often be cured by surgery.

Key points about treating bowel cancer

- Your treatment will depend on how big your cancer is, whether it has spread, what it looks like under a microscope, and how healthy you are.
- About 9 in 10 people with this cancer can have surgery. For the other 1 in 10 people, their cancer has probably spread to other parts of their body, so surgery will not help them to live any longer. ^[10]
- Many people worry that after surgery they'll need to wear a colostomy bag to collect their bowel movements. In fact, only 1 in 8 people with rectal cancer and very few people with colon cancer need a permanent colostomy. ^[20] (These numbers come from the US. Similar numbers weren't available for the UK.)
- Chemotherapy after surgery can help you live longer, but it has unpleasant side effects.
- Radiotherapy before surgery for rectal cancer can reduce the chances that your cancer will come back. But radiotherapy has unpleasant side effects.
- Seeing your doctor for follow-up check-ups after your treatment may help detect whether your cancer has come back or spread to another part of your body.

Bowel cancer

- If you have rectal cancer, an operation called total mesorectal excision may help you live longer. This surgery removes the part of your rectum that contains the cancer as well as the fatty tissue around your rectum.
- If your cancer has spread, or has come back after treatment, there are newer chemotherapy drugs you may be able to try. To find out more, see [Second-line chemotherapy drugs](#) .

Treatments for bowel cancer

Which treatments work best? We've looked at the research and given a rating for each treatment according to how well it works.

For help in deciding which treatment is best for you, see [How to use research to support your treatment decisions](#).

Treatment Group 1

Treatments for bowel cancer

Usual treatment (most people have this treatment)

- [Surgery](#) : You will probably need surgery to cut out the cancer. Your surgeon will also cut out some healthy tissue around the tumour to try to get rid of any cancer cells that are left. [More...](#)

Treatments that work

- [Chemotherapy](#) : This treatment uses drugs to kill cancer cells. Chemotherapy is often used to kill cancer cells that might be left after surgery. The drugs used for bowel cancer change all the time as new ones become available, and as new combinations of drugs are tested. But fluorouracil has been the main drug for more than 40 years. [More...](#)
- [Radiotherapy before surgery for rectal cancer](#) : Radiotherapy is used before surgery to shrink the tumour and kill any stray cancer cells. It is usually used for cancer in the rectum. [More...](#)

Treatments that are likely to work

- [Regular follow-up](#) : After you've finished your treatment your doctors will want you to come back for check-ups. This is to make sure that if the cancer does come back, it can be treated quickly. [More...](#)

Bowel cancer

Other treatments

We haven't looked at the research on these treatments in the same detail we have for most of the other treatments we cover. (To learn more, see Our method.) But we wanted to cover them as you may have questions about them.

- [Second-line chemotherapy drugs](#) : These drugs can be used if usual chemotherapy drugs don't work, or if the cancer comes back after treatment. [More...](#)
- [Total mesorectal excision for rectal cancer](#) : This operation is used only for cancer of the rectum. The surgeon cuts out the part of the bowel with the cancer in it and the fatty tissue around the bowel. [More...](#)

What will happen to me?

It's hard to say what will happen to you after you're diagnosed with bowel cancer (also called colon or rectal cancer). In general, the earlier your cancer is diagnosed, the better your outlook.

No matter how many statistics you see on this cancer, keep in mind that no one can say for sure what will happen to you. You are not a statistic, and no two people respond to treatment or to cancer in exactly the same way. Many people do better than their doctors expect they will.

We know that, in general, the outlook for your disease depends mainly on:

- The [stage of your cancer](#) (whether it has spread)
- Whether any of your [lymph nodes](#) are involved and where these nodes are
- What the tumour looks like under a microscope (the more your tumour cells look like normal cells, the better your outlook may be).

We know from research that most people with bowel cancer want to learn the facts about their disease. They want their doctor to tell them whether the cancer can be cured and whether it will come back.^[1] But this is not the case for everybody. If you'd like to see figures about how long people live, see [Survival rates for bowel cancer](#) . If you don't want to read the statistics, then skip this section.

Other things that affect what may happen to you

The research also tells us the following.^[9] ^[18] ^[19]

- If your bowel cancer is going to come back, it will probably do so within two years of [surgery](#) . If your cancer doesn't come back within five years, you are probably cured.

Bowel cancer

- In the United States, about 1 in 8 people who have rectal cancer will need to have a colostomy (similar numbers aren't available for the UK).^[20] A colostomy is when part of the colon is brought out through the belly to allow waste to be collected in a bag. Usually, it's people with cancer in their rectum rather than in their colon who might need a colostomy. For more information, see [Living with a colostomy](#) .
- Bowel cancer spreads most often to the **liver** . Surgeons today are more prepared to remove larger tumours in the liver than they used to be.
- If your cancer is caught by screening, you have a better outlook because it is likely to be less advanced.
- Cancer that completely blocks the colon has a worse outlook than cancer that does not block the colon. Only about 3 out of 10 people whose cancer completely blocks the colon or has grown through the colon wall live for five years after surgery. Twice as many people (6 out of 10) can expect to live for five years after surgery if their cancer does not block the colon or has not grown through the colon wall.
- Sometimes a tumour in the colon or rectum can stop **faeces** (stool) passing through the body, resulting in a blockage in the bowel. A complete blockage is a medical emergency and may require a small metal tube known as a stent to be placed into your colon to hold it open.^[21]

Questions to ask your doctor

If you've been diagnosed with bowel cancer (colon or rectal cancer), you may want to talk to your doctor to find out more.

Here are some questions that you might want to ask before surgery.

- Will I need surgery?
- If I need surgery, what will this involve? What will you take away?
- Is the surgeon you're recommending someone who does these kinds of operations a lot?
- Will I need to have a **colostomy** ? If so, will it be permanent?
- Will I need any treatment after surgery?
- How long will it take me to recover after surgery?
- Is my family at risk of getting this type of cancer?

Bowel cancer

- Is there anything my family should be doing to protect themselves against this type of cancer?
- Should I be following a special diet or taking vitamins to help stop the cancer coming back?
- Will my treatment cure my cancer? How will you know if I'm cured?

Here are some questions that you might want to ask after surgery.

- How far has the cancer spread? Has it reached other organs or is it just in the colon or rectum?
- What stage is the cancer?
- Do any of my lymph nodes have cancer cells in them? If so, how many nodes have cancer cells?
- Is my cancer likely to come back?

Survival rates for bowel cancer

Doctors talk about five-year survival rates for cancer. They do this because research studies usually follow people for five years after they start treatment. After five years, if you are well, you're likely to stay well. But there is still a small chance your cancer may come back after five years.

You may not want to get into this much detail, either because it is complicated or because you are scared about finding out too much about your condition. Please remember that this information is not specifically about you. No one can predict exactly what will happen to you. Also, how long people with colon and rectal cancer live is increasing all the time. ^[18]

Here are some general ideas about how long people live with different stages of colon or rectal cancer. The table shows the percentage of people diagnosed at each stage of colon and rectal cancer who live for at least five years after treatment. It's worth noting that these figures are a bit old, as they look at people who were diagnosed with colon or rectal cancer in England from 1996 to 2002. However, they are the latest numbers available. ^[27] To find out more about staging, see [What stage is your cancer?](#)

Dukes' stage	What it means	People who live for at least five years
A	Cancer has not spread beyond the inner wall of the colon or rectum.	More than 90 in 100
B	Cancer has spread into the muscle layer of the colon or rectum.	About 77 in 100

Bowel cancer

C	Cancer has spread to one or more lymph nodes in the area.	About 48 in 100
D	Cancer has spread to other organs in the body.	About 7 in 100

Treatments:

Surgery

In this section

This information is for people who have bowel cancer. It tells you about surgery, a treatment used for bowel cancer. It is based on the best and most up-to-date research.

If you have cancer in your bowel, you will probably need some kind of surgery. In fact, 9 out of 10 people will need an operation. ^[10]

Parts of your bowel are called your **colon** and **rectum**. So you may hear bowel cancer called **colon cancer**, **rectal cancer**, or **colorectal cancer**.

Your surgeon will remove your cancer and probably join the two healthy pieces of your bowel together, either by sewing or stapling them. If you have part of your colon removed, your body will work pretty much as it did before. Your colon is about 2 metres (6 feet) long, so you can lose quite a large chunk of it without noticing much difference.

However, your rectum is much smaller than your colon. It's only about 20 centimetres (8 inches) to 25 centimetres (10 inches) long. So surgery to remove cancer in your rectum can have a greater impact on your life.

People with rectal cancer are more likely than people with colon cancer to need a **colostomy**. If you have a colostomy, waste from your bowel is collected in a bag outside your abdomen.

But not everyone with rectal cancer needs a colostomy. Surgeons are developing new techniques, which means that today about 1 in 8 people with rectal cancer need a permanent colostomy. (These numbers come from the US. Similar numbers aren't available for the UK.)

About 1 in 4 people will need a colostomy bag right after surgery. But this is just a temporary measure. As soon as your colon and rectum have healed, your surgeon will get rid of the colostomy by joining your bowel back together. So your bowel should work as it did before. (For more, see [Why would I need a colostomy?](#) and [Living with a colostomy](#) for more information.)

Types of surgery

What type of surgery you have depends on how big your cancer is and how far it has spread.

Bowel cancer

If you have a polyp that has cancer in it

If you have a polyp, you may need only minor surgery. A **polypectomy** removes polyps, but none of the colon itself. A polyp is a fleshy growth that bulges out from the normal surface of your bowel. Most colon and rectal cancers start out as polyps.

A polypectomy is carried out during a **colonoscopy**. This is a procedure used to check your colon and rectum for any problems. A tube called a colonoscope is put into your body through your **anus**. A camera at the end of it shows your colon and rectum on a screen. If your doctor finds a small polyp, he or she simply grabs the polyp with a wire snare at the end of the colonoscope. An electric current then passes through the wire to cut the polyp away from the colon wall. You don't need to have a **general anaesthetic** (a drug that makes you sleep) during a colonoscopy.

Your doctor then looks at the polyp under a microscope. If there are any cancer cells near the edge of the polyp, your doctor may tell you it's best to have surgery to take out a small part of your colon. This is to make sure you have no cancer cells left in your colon wall. But if the cancer cells are found only inside the polyp, there's little chance they could have spread, so you'll need no further treatment. However, your doctor will probably advise you to have a colonoscopy on a regular basis to check for any new polyps.

Very small polyps in your rectum also can be treated without having to remove any of the surrounding tissue. But surgeons often recommend removing this tissue to make sure they get all of the cancer cells. This is because the rectum is surrounded by a lot of fatty tissue, and cancer cells can spread into this area and then to other organs. This means you're less likely to have a minor operation with rectal cancer than you are with colon cancer. You will be able to have a minor operation only if your rectal cancer is small (less than 3 centimetres, or a little more than an inch), and not growing rapidly. ^[28]

A surgeon can remove a rectal polyp either through your anus or by cutting through the rectum from the outside. The polyp can then be burned or shaved away. Before this procedure, you might have a drug to make you sleep, or you might have a **local nerve block** in your spine so that you can't feel anything. This type of surgery is almost always followed by **radiotherapy** to catch any cancer cells that might have strayed into the pelvic area (the area of your body between your hips).

If cancer cells have spread into the wall of your colon or rectum

If cancer cells have moved beyond a polyp and into the wall of your colon or rectum, you'll need a bigger operation. Most people with colon or rectal cancer need an operation to remove their cancer and join up the two healthy ends of their bowel. You will be given a general anaesthetic (a drug that makes you sleep) for this operation.

If you have this type of operation, your surgeon will also remove the **lymph nodes** that drain fluid from the part of your colon or rectum that has the cancer in it. To give you the best chance of a cure, your surgeon will try to take away all the tissue that may have cancer cells in it. He or she will also probably examine your **liver** to see whether the cancer has spread there.

Bowel cancer

This type of surgery has many different names. But the actual name is not important. What you need to know is what part of your colon or rectum is being removed.

If you have all or part of your colon removed, it's called a **colectomy**. An operation to remove all or part of your colon and all of your rectum is called a **proctocolectomy**. Your surgeon may also call an operation to remove a cancer **surgical resection**, **hemicolectomy**, **transverse colectomy**, **sigmoid colectomy**, or **subtotal colectomy**, depending on what part of the colon is removed.

Another type of rectal surgery is called [total mesorectal excision](#) . It involves removing the tumour as well as the fatty tissue surrounding your rectum.

It's important to ask your surgeon what's going to happen during your operation. For example, if you need a colostomy, you should discuss where on your abdomen you would like your colon to open out.

There are three main stages to an operation to remove a colon or rectal cancer.

- The first is the investigation stage. During this stage, your surgeon will examine your bowel, and find the exact location of the tumour. He or she will also look at the organs nearby to see whether the cancer has spread.
- After this comes the second stage of the procedure, when the surgeon removes the tumour.
- The final stage of the operation is when the surgeon reconnects the two healthy sections of your bowel (called an **anastomosis**) or creates a colostomy.

It's difficult to say how long your operation will take. Ask your surgeon about this.

Different ways you can have surgery

There are different ways your surgeon can do your operation.

- **Traditional surgery** for cancer of the colon or rectum involves taking out the tumour through a large cut in your tummy (abdomen).
- **Keyhole surgery** (laparoscopic surgery) uses an instrument a bit like a small telescope that lets your surgeon see inside your body through a small cut.^[29] Other instruments are put into your body through several more small cuts. The surgeon also makes one slightly larger cut to take out the part of your colon or rectum that has cancer.
- **Laparoscopically assisted surgery** uses smaller cuts for some of the operation and a larger cut for the rest. But the larger cut will still be smaller than the cut used in traditional surgery.

Bowel cancer

Research shows that these types of surgery work equally well. There are no differences in how long you're likely to live, or how likely your cancer is to come back afterwards. ^[30]
^[31] ^[32] ^[33] ^[34]

Some surgeons were worried that cancer might be more likely to come back if you had the small cuts used in keyhole surgery rather than the one big cut for traditional surgery. But research shows this doesn't seem to happen. ^[30]

Keyhole surgery slightly increases the risk of your bowel being injured, or of having complications during the operation. Ask your surgeon about the chances of this happening in your hospital. ^[35]

NICE guidance on keyhole surgery

The National Institute for Health and Care Excellence (NICE) is the government body that decides which treatments should be available on the NHS. Here is what NICE says about using keyhole surgery to do operations for bowel cancer. ^[29]

- Keyhole surgery can be a good alternative to traditional surgery for some people.
- Keyhole surgery can be better than traditional surgery because the cuts are smaller, so you're likely to recover more quickly. People who have keyhole surgery need to stay in hospital for about three days fewer than people who have traditional surgery. ^[29] In some studies, people who had keyhole surgery were slightly less likely to die during the operation or in the 30 days afterwards. ^[29] However, the difference wasn't big enough to be certain it didn't happen by chance.
- Keyhole surgery is more difficult to do than traditional surgery. Keyhole surgery also takes about 40 minutes longer than traditional surgery.
- In studies, about 1 in 5 people who started having keyhole surgery ended up also needing to have traditional surgery through a large cut during their operation. ^[29] These people didn't do as well as people who just had keyhole surgery. For example, they lost more blood and needed to stay in hospital longer after their operation. They also didn't do as well as people who only had traditional surgery.

Surgeons need special training to do keyhole surgery. ^[29] It might not be available in all hospitals. And keyhole surgery isn't suitable for everyone. Talk to your surgeon about whether having your operation using keyhole surgery is right for you.

After your operation

After your operation, you'll need to stay in hospital for a few days until your digestive system starts to work again. If you have a colostomy, you'll also need to learn how to look after it. (For more, see [Living with a colostomy](#) .)

Bowel cancer

It's not possible to say how long you will stay in hospital. How quickly you recover depends a lot on how fit you were before the operation. But you can usually start to eat and drink one or two days after surgery, and you should regain your strength quickly after that.

Right after your operation you may be in some pain, and you'll be given drugs to relieve this. Some doctors will give you control over your pain relief for at least the first 24 hours after surgery. This is called **patient-controlled analgesia (PCA)**. A tube is put into a vein, usually in your arm, and linked to a machine that releases a dose of a painkiller whenever you press a button. This gives you the freedom to give yourself extra pain relief when you need it.

When you go home, you may be given some pills to help control any pain you might still have. If you have pain at any time after your operation, you should ask a nurse for painkillers. You should never have to be in pain or wait a long time for pain relief.

It's a good idea to get up and about as soon as you can after surgery. This helps reduce your chances of getting a blood clot in your legs. But make sure you're ready to get up, and ask someone to help you, because you may be shaky at first. After a few days, your wound should be healing well and you should be able to remove any bandages or dressings.

Questions to ask after surgery

It can take months to get back to normal after major surgery. It is normal to feel tearful and sad afterwards. If you still feel sad some months after surgery, you should discuss this with your doctor.

Before you leave hospital, make sure you ask any questions you have about what you should and should not be doing. Here are some suggestions.

- How long will I need to take tablets for pain relief?
- What should I do if I run out of tablets?
- How do I know if my wound is infected?
- What should I do if my wound is infected?
- Can I take a bath or shower?
- What should I be eating?
- How often do I have to change my dressings?
- When can I start exercising again?
- When can I drive again?

Bowel cancer

- Who can I call if I'm worried about something?
- Will I need any follow-up treatment? If so, what?
- What should I do if I am worried between follow-up visits?
- When can I have sex again?

Chemotherapy

In this section

[Does it work?](#)

[What is it?](#)

[How can it help?](#)

[How does it work?](#)

[Can it be harmful?](#)

[How good is the research on chemotherapy?](#)

This information is for people who have bowel cancer. It tells you about chemotherapy, a treatment used for bowel cancer. It is based on the best and most up-to-date research.

Does it work?

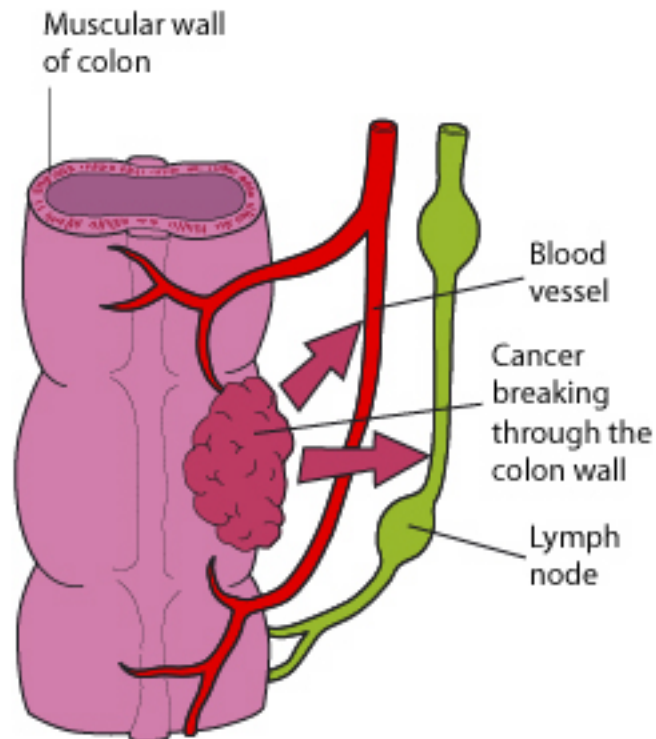
Yes. If you have chemotherapy after surgery for bowel cancer, you're likely to live longer. Chemotherapy improves your chances of being alive five years after your diagnosis. But this treatment does have side effects.

What is it?

Chemotherapy uses drugs to kill cancer cells. These drugs can be used to treat cancer before or after other treatments, or instead of other treatments.

For bowel cancer, chemotherapy with a combination of drugs is usually used after surgery to remove the cancer. The drugs help prevent the cancer coming back by destroying cancer cells that might still be in your body. Chemotherapy treats the whole body, and will affect both normal cells and cancer cells. (Treating the whole body is called **systemic treatment**.)

Bowel cancer



Chemotherapy is often used if cancer cells have reached nearby lymph nodes.

Chemotherapy is widely used for [stage 3](#) bowel cancer (this is also called Dukes' stage C cancer). In stage 3 cancer, the cancer cells have spread into the muscle layer of your colon or rectum and have also reached one or more nearby [lymph nodes](#).

Chemotherapy is also used to treat [stage 2](#) (Dukes' stage B) cancer that has a high risk of returning or spreading. In this stage, the cancer has spread into the muscle layer but has not reached your lymph nodes.

You may also be offered chemotherapy if you have [stage 4](#) bowel cancer (Dukes' stage D). In stage 4 cancer, the cancer cells have spread to other parts of the body. The aim of chemotherapy at this stage is to help control symptoms.

What drugs are used?

The main chemotherapy drugs used to treat bowel cancer are:

- fluorouracil, which is also called 5-FU
- leucovorin, which is also called folinic acid
- oxaliplatin
- capecitabine
- tegafur with uracil.

Bowel cancer

These drugs are often used together to kill as many cancer cells as possible. The doses and how you are given the drugs will depend on your doctor or the hospital where you're being treated.

You may be given 5-FU:

- As a daily injection for five days every four weeks for six months
- As an injection every week or every two to three weeks
- Through a pump that gives the drug continuously
- As tablets.

Most chemotherapy for bowel cancer is given as an injection into a vein. Chemotherapy can also be given directly into the vein that supplies blood to your **liver** (this is called your portal vein). You may have this kind of chemotherapy if cancer cells might have spread to your liver but not to other parts of your body.

If you need injections into your portal vein, your surgeon will put a tube into this vein during surgery to remove your cancer. You'll probably start the injections five days to seven days after surgery.

There are also some newer chemotherapy drugs, which are used for cancer that has spread, or come back after treatment. To read about these, see [Second-line chemotherapy drugs](#) .

How can it help?

If you have chemotherapy after surgery for colon or rectal cancer, you're slightly more likely to be alive five years after your cancer was found than if you don't have this treatment. ^[36] ^[37] ^[38] ^[39]

Studies show that people who have chemotherapy for their colon or rectal cancer:

- Are less likely to get their cancer back again than people who do not have chemotherapy ^[37] ^[39] ^[40]
- Improve their chances of living for five years. In one review of the research, 71 percent of people were alive five years after surgery and chemotherapy, compared with 64 percent of people who just had surgery. ^[37] The research also shows that adding chemotherapy to surgery works well for later stages of cancer (Dukes' stage C or stage III). But it may not help for earlier cancer (Dukes' stage B or stage II). ^[36] ^[37] ^[40] ^[41] ^[42]

Bowel cancer

A high dose of the drug leucovorin (folinic acid) does not seem to work any better than a low dose of this drug when given together with fluorouracil. ^[38] Side effects are likely to be worse with higher doses.

People whose cancer might have spread to their liver are more likely to be alive after six years if they have injections of fluorouracil into their portal vein. About 6 out of 10 people given this treatment were alive six years later, compared with slightly more than 5 out of 10 people who did not have this treatment. ^[43]

How does it work?

A surgeon can remove your tumour, but it's often very hard to be sure that all the cancer cells have been taken away. This is because cancer cells are tiny and you can only see them under a microscope.

Cells from a tumour can get into your blood and your lymphatic fluid and travel to other parts of your body. The cancer cells may lie there for some time before growing, or they may die. Chemotherapy drugs help to kill these stray cancer cells.

Anti-cancer drugs do their job by attacking how cells work. Some drugs stop the DNA in cells working properly. DNA is the genetic code that tells the cell how to grow and divide into new cells. Other anti-cancer drugs stop the proteins in cells working properly. Proteins are important in the structure and function of cells.

Anti-cancer drugs kill cells that divide rapidly. Cancer cells divide faster than normal cells do, so these drugs kill more cancer cells than normal cells.

Here's how anti-cancer drugs work against colon and rectal cancer.

- Fluorouracil interferes with DNA and a related chemical called RNA, so it stops cells working, growing, and dividing.
- Leucovorin makes fluorouracil more poisonous to cancer cells.
- Oxaliplatin, capecitabine, and tegafur with uracil interfere with DNA, slowing the growth of the cancer cells.

Sometimes cancer cells can become resistant to the effects of chemotherapy drugs (this means that the drugs no longer kill the cells). This is similar to what happens when antibiotics no longer kill bacteria. To fight drug resistance, you may be given more than one chemotherapy drug at a time.

Can it be harmful?

You get side effects from anti-cancer drugs. That's because they kill some normal cells as well as the cancer cells.

Normal cells that are often affected include:

Bowel cancer

- Cells lining the digestive tract (this is the tube that takes food through your body as it is being digested)
- Red blood cells (these cells carry oxygen and food around the body)
- White blood cells (these cells fight infection)
- Platelets (these are small pieces of cells that help your blood clot)
- Hair cells
- Cells in the ovaries (the ovaries are the pair of organs in women that produce eggs and female hormones)
- Skin cells.

For every 10 people treated with chemotherapy, 3 will have a side effect that needs medical help. You should ask your doctor about the side effects you might have. You'll need to decide whether you can put up with these. ^[38]

Chemotherapy for colon and rectal cancer can cause the following. ^[38]

- Feeling sick. This may not happen at all. But if you do feel sick, there are drugs that can help you.
- Diarrhoea. This side effect is common. It happens to 8 out of 10 people. It's severe for about 3 in 10 people.
- Mucositis. This is swelling in the mouth. It is a common problem and can be painful, but it usually isn't severe. You can also get mouth ulcers . Also, the lining of your mouth and the upper part of your oesophagus (the tube that leads from your mouth to your stomach) may peel away, so you make a lot of saliva. This can be quite uncomfortable. Severe cases are rare but can be life-threatening. ^[44]
- Problems with your blood cells. Chemotherapy can reduce the amount of platelets in your blood. Platelets help your blood to clot when you cut yourself. With fewer platelets, you may bleed and bruise more easily. You may also have fewer white blood cells in your blood. This can make you more likely to get infections. About one third of people who have chemotherapy have this problem, and it is serious in about 1 out of every 20 people. These problems usually appear seven days to 14 days after treatment. Older people (over age 70) are more likely than younger people to have too few white blood cells. ^[37]
- Exhaustion. Many people say they can't continue working while they have anti-cancer drugs because they feel so tired. This usually passes after the treatment is finished.

Bowel cancer

- Sore, red hands and feet. If you are given 5-FU through a pump, your hands and the soles of your feet may get red and sore. They may peel. If it gets bad, tell your doctor.

How good is the research on chemotherapy?

There is good evidence that chemotherapy after surgery works if you have bowel cancer (also called colon or rectal cancer). There have been lots of good studies, and different groups of researchers have collected the results of this research together in studies called **systematic reviews**. ^{[36] [37] [38] [40] [41] [42] [39]}

The studies and reviews have found that chemotherapy can help people with colon or rectal cancer to live longer. Chemotherapy also reduces the chances of the cancer coming back.

Regular follow-up

In this section

[Does it work?](#)

[What is it?](#)

[How can it help?](#)

[How does it work?](#)

[Can it be harmful?](#)

[How good is the research on regular follow-up?](#)

This information is for people who have bowel cancer. It tells you about having regular follow-up, to make sure your cancer is spotted early if it comes back. It is based on the best and most up-to-date research.

Does it work?

Having regular follow-ups with your doctor after treatment for bowel cancer (also called colon or rectal cancer) may help you live longer. If cancer comes back, it can be picked up sooner. Getting treatment early can improve your chance of living for at least five years. ^{[45] [46]}

But we don't know for sure how often you should see your doctor or what tests you should have. More research is needed on this.

What we do know is that you are likely to feel better and worry less about your cancer coming back if you have regular check-ups. ^[47] These check-ups also give you the chance to talk to your doctor about any concerns you have.

What is it?

A follow-up visit is when you see your doctor after you've finished your treatment. Your doctor checks to see whether your cancer has come back or whether it has spread to another part of your body.

Bowel cancer

How often you have a follow-up visit will depend on the doctor treating you. There are no hard and fast rules about how often this should happen.

In studies, regular follow-ups involved being seen by a doctor every three to six months for the first two years, and then less frequently for the next few years. People had a physical examination at each visit, and tests, such as blood tests, chest x-rays, scans of their abdomen, and tests for blood in their stool.

They also had more sophisticated tests to look for cancer around every six months or 12 months.^[45] These included tests such as CT scans and colonoscopies. In a colonoscopy, a doctor puts a tube into your anus to see the inside of your colon.

These regular checks and tests were called 'intensive follow-up' in studies because doctors kept a close eye on their patients and did lots of tests. People who had less intensive follow-ups saw their doctor once a year and had far fewer tests. Some people in studies didn't have any regular follow-up once they'd finished their treatment.

Regular check-ups also give you the chance to ask your doctor about any symptoms that may be bothering you. Or you might want to ask if there are things you can do to lower the chance of the cancer coming back. Write down your questions if you're worried that you might forget what you want to ask. But, remember, if you do have any symptoms that you're worried about, see your doctor straight away. Don't wait for your check-up, especially if it's a long way off.

How can it help?

There is some evidence that regular follow-ups after surgery for bowel cancer help people to live longer.^[46] ^[48] This is because cancers, when they come back, are found earlier in people who have regular follow-ups and tests. Treating these cancers early improves your chance of living for at least five years.

Reviews of studies have found that intensive follow-up after surgery for bowel cancer is probably better than less intensive follow-up.^[46] ^[48]

Intensive follow-up involved being seen by a doctor every three to six months for the first two years after surgery for colon or rectal cancer, and then less often for the next few years. Doctors did tests at these visits like blood tests, CT scans, and tests for blood in the patient's stool.

- Cancers were found about seven months earlier in those having intensive follow-up than in those having less intensive follow-up.^[46]
- People who had intensive follow-up were more likely to be alive after five years than those who did not. The research found that 27 in 100 people who had intensive follow-up died within five years compared with 34 in 100 people who had less intensive follow-up after their treatment.^[46]

Bowel cancer

- People whose follow-up programme included a colonoscopy and a blood test for carcinoembryonic antigen (CEA) were likely to live longer than people who didn't have this type of follow-up, although there could be other reasons for the difference between the two groups. ^[48] CEA is a protein in your blood that can increase when you have cancer. In colonoscopy, doctors use a flexible probe to look inside the colon for signs of cancer coming back .

Research also shows that people like to have follow-up visits with their doctor. And most would not give them up, even if these visits didn't help to find cancer earlier. In one study, 8 out of every 10 people said they were either 'reassured' or 'very reassured' by these visits. ^[47]

How does it work?

Seeing your doctor for follow-up check-ups may help detect whether your cancer has come back or whether it has spread to another part of your body. If your cancer has come back or if it has spread, the sooner your doctor finds this, the better. That way, you can start treatment for the cancer earlier, increasing the chance that you will live longer.

The studies found that people who had more intensive follow-up were more likely to have another surgical operation for recurrences of cancer. ^[46]

Can it be harmful?

There's no evidence that follow-up visits can be harmful. But you will have tests during follow-up visits and these could have side effects.

How good is the research on regular follow-up?

Two reviews of studies found good evidence that people lived longer if they had intensive follow-up rather than less intensive follow-up after finishing their treatment for bowel cancer. ^[46] ^[48] A more recent study found that people who had regular follow-up were more likely to have surgery to remove cancer that had returned than people who didn't have intensive follow-up. But there weren't enough people in the study to be certain that having regular-follow up helped people live longer compared with those who don't have regular follow-up. ^[49]

Seeing a doctor more often can also help to reassure people about their health. ^[47]

Radiotherapy before surgery for rectal cancer

In this section

[Does it work?](#)

[What is it?](#)

[How can it help?](#)

[How does it work?](#)

[Can it be harmful?](#)

[How good is the research on radiotherapy before surgery for rectal cancer?](#)

Bowel cancer

This information is for people who have rectal cancer. It tells you about radiotherapy before surgery, a treatment used for rectal cancer. It is based on the best and most up-to-date research.

Does it work?

If you have rectal cancer, radiotherapy before surgery may lower the likelihood that your cancer will come back in the same place. It may also help you live longer. ^[50] ^[51] ^[52] ^[53]

Rectal cancer means the cancer is in a part of your bowel called your **rectum**. To read more, see [More about your colon and rectum](#) .

You're likely to feel ill because of side effects from radiotherapy, and you may not be able to do things that you would normally do. Having radiotherapy for a short time (a short course) has few side effects, but having it for a longer time (a longer course) can have more serious side effects.

What is it?

Radiotherapy is the use of radiation, usually **x-rays** , to treat cancer.

You can have radiotherapy before or after surgery. If you have it before, it is used to shrink the cancer. This may make it easier to remove the whole tumour during surgery and it may make it less likely that your cancer will come back after your operation. If you have radiotherapy after surgery, it is used to kill any cancer cells left behind or to shrink any tumour that might be left. The information here is about radiotherapy before surgery.

Radiotherapy is not usually used to treat tumours in the colon, but it is used to treat tumours in the rectum that are [stage 2 or 3](#) (Dukes' stage B or C). These tumours have spread through the wall of the rectum, although the cancer cells may not have reached the **lymph nodes** .

With these types of tumours, there is a high risk that the cancer will come back after surgery or spread to organs nearby. ^[54] ^[55] ^[56] ^[57] This risk can be as high as 70 percent in some people. ^[54] And if cancer spreads to organs nearby (such as the bladder, the prostate, or the vagina), it can be very painful. Doctors use radiotherapy (both before and after surgery) to improve the outlook for people when colorectal cancer has spread.

Radiotherapy has been used to treat cancer for more than 100 years. Most radiotherapy uses high-energy x-rays that are produced by a machine called a **linear accelerator**. This machine gives the x-rays extra energy. The x-rays have about 500 to 1,000 times more energy than the ordinary x-rays used to get a picture of your body. This added energy means that the x-rays can go deeper into tissues and destroy cancer cells. But you won't feel these x-rays when you have radiotherapy. The treatment takes a few minutes and you need to keep still.

The problem is that radiotherapy kills some normal cells as well as cancer cells. But it kills only cells that are dividing and growing. By treating people with several bursts of

Bowel cancer

radiotherapy, there's more chance of killing more cancer cells than normal cells. This is because cancer cells divide and grow faster than normal cells, so they are more likely to be killed by repeated doses of radiation.

How long you have radiotherapy can vary. You may be given it five days a week for five to seven weeks before surgery for rectal cancer. But some hospitals give only five days of radiotherapy before surgery. We don't know yet if shorter or longer treatment is best. Researchers are currently trying to find out.

You won't feel anything during your treatment, but you may be uncomfortable because you have to stay in one position.

If you want to know more about how radiotherapy interrupts the life cycle of cells, see [How does radiotherapy work?](#)

How can it help?

Radiotherapy before your operation may lower the likelihood that your cancer will come back. It may also help you to live longer than if you had just surgery alone. But we don't know this for sure. Different studies have had different results. Research doesn't give us clear answers as to whether the risks of radiotherapy outweigh the benefits.

Here's what the research says about the results if you have rectal cancer and you have radiotherapy before surgery.

- Your chance of being alive after two years increases from 75 percent to 77 percent. ^[53]
- Your chance of being alive after five years increases from 60 percent to 64 percent. ^[53]
- There's less chance your cancer will come back in the same place. ^[58] In some studies, about 1 in 10 people who had radiotherapy before surgery had cancer in their colon or rectum again within five years, compared with 2.5 in 10 people who had surgery only. ^[59] ^[60] But this varies a lot between studies. ^[53]
- You may be less likely to get cancer again than if you were to wait to have radiotherapy until after your operation. ^[61]

However, these figures vary depending on the stage of your rectal cancer. Your doctor may suggest that you have radiotherapy before surgery if you have a large tumour. You don't usually need radiotherapy before surgery to remove a small tumour.

Research also shows that your cancer may be less likely to come back if you have both radiotherapy and [chemotherapy](#) before surgery, rather than just radiotherapy. However,

Bowel cancer

having both treatments causes more side effects and may not increase your chance of being alive five years later. ^[62]

Also, some studies have found no difference between having surgery alone and having radiotherapy before surgery on whether your cancer will come back, or you will live longer than five years. ^{[59] [60] [63]}

But all the studies found side effects from radiotherapy, such as wound infections, diarrhoea, bowel blockages, and pain after surgery.

How does it work?

When you have radiotherapy before surgery, the goal is to shrink the size of the tumour so that it's easier for the surgeon to remove all of the growth. If a tumour is too big to operate on, radiotherapy is also used to kill some of the cells so the tumour becomes small enough for surgery. Doctors use radiotherapy to try to kill cancer cells while avoiding normal tissue. ^[64]

Can it be harmful?

Yes. Having a long course of radiotherapy before surgery for rectal cancer can make you feel unwell and disrupt your life. ^{[63] [65]} But compared with older techniques, modern therapy causes less damage to the healthy tissue around the cancer. Risks are continually being reduced as better ways of giving radiotherapy are developed.

The side effects of radiotherapy can be divided into two types: those that happen soon after treatment (acute side effects) and those that happen a while after treatment (long-term side effects).

Early side effects

Here are some of the problems people get after radiotherapy.

- Diarrhoea. ^[53]
- Tiredness. ^{[66] [67]}
- Sickness. ^{[66] [67]}
- Pain in the lower abdomen. This happens to about 6 in 100 people, and it lasts up to six months for 1 in 100 people. Doctors think the pain is caused by nerve damage. ^[65]
- Wound infection. In one study, 2 in 10 people who had radiotherapy got an infection in their wound after surgery, compared with 1 in 10 people who did not have this treatment. ^[65]

Bowel cancer

- Blood loss. If you have radiotherapy before surgery, you may lose more blood during your operation than if you have surgery alone. If your general health is good, this is not a serious problem. ^[66]

You will probably have some diarrhoea and sickness after treatment, and you may feel exhausted. You should start to feel better in a few weeks.

Side effects that happen a while after treatment

Here are some of the problems that can happen later on.

- Blood clots in your legs or lungs. Blood clots can develop in your legs. These clots can also travel through your bloodstream to your lungs. About 1 in 13 people who have radiotherapy get blood clots. But it is not clear how often this causes symptoms. Usually these clots don't cause problems. ^[65]
- Bowel blockage. One study found that about 1 in 7 people had bowel blockages after treatment. This means they couldn't pass a bowel movement. If this happens, you may need emergency surgery to clear the blockage. ^[65]
- Bowel problems. If you have radiotherapy before surgery, you may have more bowel movements than you did before the treatment. (This is less of a problem if you have surgery without radiotherapy.) You may find you need to go to the toilet in a hurry. In one study, about 3 in 10 people who had this treatment said that these bowel problems affected their social lives. This compares with 1 in 10 people who had surgery but no radiotherapy. ^[67]
- Sexual problems. Men may find it difficult to have erections if radiotherapy damages certain nerves. They may also have problems with ejaculating (producing semen from the penis at the moment of orgasm). If similar nerves are damaged in women, they may get dryness in their vagina.

How good is the research on radiotherapy before surgery for rectal cancer?

We found lots of studies and reviews of the research on radiotherapy before surgery for rectal cancer. The studies found that it reduces the chance of your cancer coming back, and may slightly reduce the risk of dying from rectal cancer. ^{[50] [51] [52] [53] [59] [61] [65]}

Total mesorectal excision for rectal cancer

In this section

[Does it work?](#)

[What is it?](#)

[How can it help?](#)

[How does it work?](#)

[Can it be harmful?](#)

Bowel cancer

[How good is the research on total mesorectal excision for rectal cancer?](#)

This information is for people who have rectal cancer. It tells you about total mesorectal excision, an operation that removes the tumour, and the fatty tissue around your rectum.

Does it work?

We haven't looked at the research on total mesorectal excision in the same detail we have for most of the treatments we cover. (To learn more, see Our method.) But we wanted to cover it as you may be interested or have questions about it.

If you have rectal cancer, having a total mesorectal excision may reduce the chances that your cancer will come back in the same area. This seems to be true for cancers in the lower two-thirds of the rectum. But we don't know for sure how much it reduces the risk of your cancer coming back, because more studies need to be done.

Rectal cancer means the cancer is in a part of your bowel called your rectum. To read more, see [More about your colon and rectum](#) .

A total mesorectal excision can make you more likely to have problems controlling your bowels. Also, your bowel may leak at the spot where your surgeon rejoined your large bowel after removing part of your rectum. This can cause an infection called peritonitis. It is treated with [antibiotics](#) and you might also need another operation to sew your bowel back together again.

What is it?

In operations for rectal cancer, surgeons remove the cancer and some of the healthy rectum above and below it. They try to remove as many cancer cells as possible so that the cancer does not come back.

Since 1982, surgeons have been doing an operation to remove rectal cancer called a total mesorectal excision. ^[68]

In a total mesorectal excision, the surgeon cuts away the piece of rectum with the cancer, some tissue above and below it, and the layer of fatty tissue around the rectum. This layer of tissue is called the **mesorectum**. It's made up of fat, blood vessels, and [lymph](#) tubes, and it is closely stuck to the rectum.

This operation aims to catch cancer cells that may have spread outside the wall of the rectum. This reduces the chances that the cancer will come back. Older types of surgery do not take away the fatty layer.

After the piece of rectum and the mesorectal tissue are removed, the two ends of the bowel that are left are joined back together.

It's usually done through one large cut. But some doctors do it using several smaller cuts and a camera to guide them (called **laparoscopic**, or **keyhole surgery**). There's not much good research about this. But so far it seems that both operations work equally well. You may recover a little faster from a keyhole operation. ^[69]

How can it help?

Most people who have surgery to remove their rectal cancer have a total mesorectal excision. If you have this surgery, you may be less likely to die in the following five years than someone who has the older type of surgery (where the fatty tissue around the rectum is not removed).^{[57] [70] [71] [72]}

In one study, cancer came back within one year in 9 out of 100 patients who had the older surgery. However, only 4 in 100 of those who had a total mesorectal excision had their cancer back within one year.^[57]

How does it work?

The goal of total mesorectal excision is to catch cancer cells that may have spread outside of the wall of the rectum. It also removes the **lymph nodes** in the fatty layer. This reduces the chances that the cancer will come back or spread elsewhere in your body.

Can it be harmful?

Like all operations, having part of your rectum removed can cause problems. For example, you may bleed heavily or get an infection or a blood clot during or after your operation.

We didn't find any good research on how often problems happen with a total mesorectal excision. But we did find the following information.

Frequent bowel movements

If you have a total mesorectal excision, you'll probably have to go to the toilet more often than if you have other types of surgery. For example, if you had to go to the toilet about two times a day before your operation, you can expect to go about four or five times a day afterwards.

Infection from leaking faeces (peritonitis)

Faeces can seep out at the place where the two pieces of bowel were joined back together. The chances of this happening are about 10 percent to 15 percent for total mesorectal excision, compared with 8 percent to 10 percent for other types of rectal surgery.^[70] If you get this problem, it will happen while you're still in hospital recovering from your operation.

This leakage is very dangerous because faeces are toxic to the body. If the faeces leak out, a condition called peritonitis can develop. With peritonitis, the inside lining of the abdomen (called the peritoneum) becomes **inflamed** and infected. This can lead to fever, breathing problems and many other symptoms. In severe cases, it can lead to death from **septic shock**. Septic shock is dangerously low blood pressure caused by an infection in your bloodstream.

One way of avoiding leakage is to have a temporary **colostomy** to collect faeces in a bag outside your abdomen. Once your rectum heals from surgery, the colostomy is

Bowel cancer

reversed and you can use the toilet as you did before. Surgeons often do the operation this way and join the bowel up later in another operation.

In one study, 38 out of 219 patients who had total mesorectal excision got leaks. Twenty-four of these cases were serious. Seven of the patients got peritonitis and three died. ^[70]

How good is the research on total mesorectal excision for rectal cancer?

We found some studies that showed that total mesorectal excision is better for rectal cancer than surgery that does not remove the fatty tissue around the rectum. But these studies were not very good quality. ^{[57] [70] [71] [72]} We need more and better research to know this for sure.

Second-line chemotherapy drugs

In this section

This information is for people who have bowel cancer. It tells you about second-line chemotherapy drugs, which are used if the first treatment you try doesn't work, or if your cancer comes back. This information is based on the best and most up-to-date research.

[Surgery](#), [chemotherapy](#), and [radiotherapy](#) are the standard treatments for bowel cancer. But you may need drugs other than standard chemotherapy if your cancer has spread through the bowel wall, or if it comes back after treatment.

We haven't looked at these drugs in the same detail we have for other treatments. To learn more, see [Our method](#). But we've included some information because you may have questions about them.

The two drugs used most often for chemotherapy in colorectal cancer are **5-fluorouracil** (5-FU) and **leucovorin** (also called folinic acid). But there are several newer drugs that can be tried if these don't work, or if the cancer comes back. New drugs are being developed all the time. Examples of newer drugs include:

- bevacizumab (brand name Avastin)
- capecitabine (Xeloda)
- irinotecan (Campto)
- oxaliplatin (Eloxatin)
- tegafur with uracil (Uftoral)
- panitumumab (Vectibix)

Bowel cancer

- cetuximab (Erbix).

These drugs can't cure cancer. Your doctor may suggest them to help you live longer, or to help control your symptoms. It's important to talk to your doctor about why you need them. You may need to decide whether the benefits are worth the risk of unpleasant side effects.

One study looked at how much combinations of the new drugs could increase the lives of people with advanced colorectal cancer (cancer that had spread through the bowel wall).^[73]

The drugs were taken in addition to the standard chemotherapy drugs. The researchers calculated that, for a person with advanced colorectal cancer who was expected to live a year:^[73]

- Irinotecan plus bevacizumab would add another 8 months of life
- Oxaliplatin plus bevacizumab, or irinotecan plus oxaliplatin, would add another 4 to 5 months of life
- Irinotecan alone or oxaliplatin alone would add another 1 to 2 months of life.

We don't know whether panitumumab can help you live longer if you have bowel cancer that has spread. One study found that it can slow down how quickly the cancer comes back by about five weeks.^[74]

Here, we list the drugs that you might be offered, with some information about them. Most of these drugs are given in combination with other chemotherapy drugs.

Some of these drugs are not routinely available on the NHS. That's because the National Institute for Health and Care Excellence (NICE), the government body that decides which treatments should be available on the NHS, says they don't work well enough for the money they cost.

Bevacizumab (Avastin)

Bevacizumab stops new blood vessels from forming in a tumour. This may shrink the tumour, or stop it from growing. It may help people with advanced bowel cancer live about five months longer.^[75] It's given as a drip into your vein.

NICE says bevacizumab should not be used on the NHS.^[76]

There are some possible side effects.

- A hole in your bowel (a perforation). This is very serious, and needs emergency surgery. In studies, between 1 in 100 and 2 in 100 people got a hole in their bowel.^[77] ^[78]

Bowel cancer

- Serious bleeding in your lungs. This can be dangerous. In studies, about 2 in 100 people taking bevacizumab got serious bleeding in their lungs. ^[77]
- A blood clot inside a vein. ^[79] In studies, around 6 in 100 people taking bevacizumab got a blood clot that needed treatment, compared with 4 in 100 people who weren't taking bevacizumab.
- High blood pressure, headaches, nosebleeds, and dry skin. These are more common but not usually serious. ^[77]

Side effects from bevacizumab can be fatal. It is not clear whether the risk of being harmed by bevacizumab outweighs the possible benefits. ^[80] One study suggests that adding bevacizumab to standard chemotherapy treatment won't help people to live longer. ^[81]

Capecitabine (Xeloda)

Capecitabine comes as tablets. You take them twice a day for two weeks, followed by seven days of no medicine. ^[82] You'll probably have a few cycles of this treatment.

NICE says that capecitabine should be one of the first treatments considered for people with bowel cancer that has spread. ^[83]

Side effects from capecitabine include red and sore hands and feet (called hand-foot syndrome) and jaundice (if you have jaundice, you get yellow colouring on your skin or in the whites of your eyes). ^[82]

Irinotecan (Campto)

Irinotecan works by breaking up the DNA in your cells. DNA is the genetic code that tells your cells how to grow and divide into new cells.

NICE says it can be used with standard chemotherapy drugs or alone.

Side effects include:

- **Diarrhoea**, which can be bad (if it happens the day after your chemotherapy, you will need to see your doctor urgently)
- Watery eyes
- Hair loss
- A drop in the number of white blood cells (these cells fight infections)
- Feeling sick

Bowel cancer

- Sweating
- Feeling tired.

Oxaliplatin (Eloxatin)

Oxaliplatin works by breaking up the DNA in cells.

NICE says that oxaliplatin may be used with 5-FU and leucovorin to treat bowel cancer that has spread. ^[21]

Oxaliplatin can help shrink secondary cancers in the liver. This may help doctors to operate on your liver to remove the secondary cancers.

Treatment with oxaliplatin can increase your chance of being alive five years after being diagnosed with secondary cancer in the liver from 3 percent to between 28 percent and 34 percent. ^[21]

There are some side effects.

- Damage to nerves, causing numbness and tingling in your fingers and toes. This side effect can last after your treatment but it may get better.
- Lower levels of white blood cells. White blood cells fight infection, so you may be at risk of infections.
- Feeling sick and tired.

Tegafur (Uftoral)

Tegafur comes combined with uracil in a capsule. You'll probably take one capsule a day for 28 days. You'll also take three tablets of folinic acid three times a day. You'll then have a rest period of seven days before the next cycle of treatment.

NICE says that tegafur plus uracil should be one of the first treatments considered for people with bowel cancer that has spread. ^[83]

Two studies compared tegafur with 5-FU. One showed that tegafur worked slightly better than 5-FU and one showed that 5-FU worked slightly better than tegafur. ^[83]

But tegafur seemed to cause fewer side effects, and people preferred it because they could take it at home rather than go to hospital for treatment. People who took tegafur were less likely to get diarrhoea, nausea and vomiting, and problems with their blood cells than people who took 5-FU. But they were slightly more likely to get problems with their liver. ^[83]

Bowel cancer

Panitumumab (Vectibix)

Panitumumab is given as a drip into a vein (this is called an IV, or intravenous infusion). It's used if other types of chemotherapy haven't worked. It's not suitable for all types of bowel cancer. It's used for a type called **EGFR-expressing cancer**. This type of cancer reacts to a chemical in your body called epidermal growth factor (EGF).

We don't know whether panitumumab can help you live longer if you have bowel cancer that has spread. One study found that it can slow down how quickly the cancer comes back by about five weeks. ^[74]

NICE says panitumumab should not be used on the NHS. ^[76]

Panitumumab has side effects, which can sometimes be serious. As many as 9 in 10 people get a rash. ^[84] In rare cases, this rash can be severe and get badly infected. Some people have even died because of this problem.

Some people taking panitumumab have had severe lung problems, although these seem to be rare. They affect fewer than 1 in 100 people. ^[74] Make sure you tell your doctor about any lung problems you've had if you're considering taking panitumumab.

About 1 in 100 people get an allergic reaction to the drug. ^[74] You may need to stop taking panitumumab if you get an allergic reaction.

The Medicines and Healthcare Products Regulatory Agency (MHRA) has warned doctors that treatment with panitumumab can increase the risk of keratitis and ulcerative keratitis, which is an inflammation of the cornea, the transparent membrane that covers the coloured part of the eye (the iris) and the pupil of the eye. But these cases are very rare. ^[85]

Less serious side effects include tiredness, vomiting, diarrhoea, and a cough. ^[84]

Cetuximab (Erbix)

Cetuximab is given as a drip into a vein (this is called an IV, or intravenous infusion). It's used if other types of chemotherapy haven't worked. It's not suitable for all types of bowel cancer. It's used for a type called **EGFR-expressing cancer**. This type of cancer reacts to a chemical in your body called epidermal growth factor (EGF).

One study found cetuximab can help you live longer if you have bowel cancer that has spread. ^[86]

NICE says that cetuximab should not be used on the NHS. ^[76]

Side effects of treatment with cetuximab can include: ^[87]

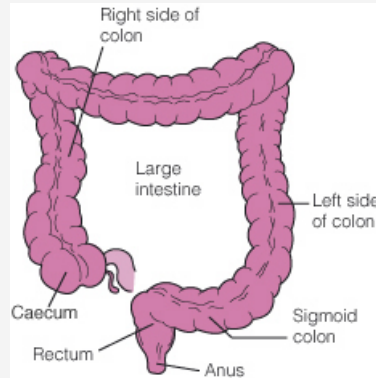
- Dyspnoea
- Dizziness

Bowel cancer

- Chills
- Fever
- Rash
- Itchy rash
- Asthma
- Hypotension
- Hypertension
- Nausea
- Vomiting
- Diarrhoea
- Headache
- Aseptic meningitis
- Low magnesium content of the blood
- Conjunctivitis
- Inflammation of the eyelids
- Inflammation of the cornea, the transparent membrane that covers the coloured part of the eye (the iris) and the pupil of the eye
- Skin reactions including acne
- Itching
- Dry skin
- Peeling skin
- Excessive growth of hair.

Further informations:

More about your colon and rectum



Your colon and rectum are part of your large bowel.

Your colon and rectum are part of your **large bowel**, which is a tube covered with muscles. You have no control over these muscles. They automatically tighten and relax to push food from your stomach through to your rectum. The food waste leaves your body through an opening called the anus.

Your colon is the first 2 metres (6 feet) of your large bowel, and your rectum is the last 20 to 25 centimetres (8 to 10 inches) of your large bowel. The waste from food you eat passes through your colon into your rectum.

The walls of your colon and rectum are made up of layers of tissues. The inner layer is called the **mucosa**. This is the layer next to where food waste passes. It is from cells in the mucosa that cancer usually starts.



A layer of muscle moves food waste through your colon and rectum, and out of your body.

The outer layer of your colon and rectum is made up of muscle. This helps to move food waste (known as **faeces**) through your colon, down to your rectum and out of your body.

Bowel cancer

Sitting next to the blood vessels near your colon are groups of **lymph nodes**. These are small collections of cells that are part of your lymphatic system. This is a network of tubes and lymph nodes that helps your body fight off disease.

Your rectum and anus are surrounded by a ring of muscles called your **sphincter muscles**. Sphincter muscles enable you to empty your bowels. The more of these muscles that you still have after surgery for colon or rectal cancer, the better the chances that your bowels will work normally.

As soon as food waste enters your rectum, you get an urge to go to the toilet.

Inherited conditions that can lead to bowel cancer

Your chances of getting bowel cancer (also called colon or rectal cancer) go up quite a bit if you have certain conditions. Some of these conditions are inherited, which means they can be passed on from parent to child. But these disorders are rare.

We've looked at the two most important conditions.

Familial adenomatous polyposis (FAP)

Only about 1 in 100 people with colon or rectal cancer have FAP. People who have this condition usually get polyps (small, fleshy growths) in their colon or rectum by the time they are 25 years old. If these polyps aren't treated, they can become cancer by the time the person is 40.^[9] If one of your parents has FAP, you have a 50 percent chance of getting it and you should be regularly tested for polyps until you are 35.

Hereditary non-polyposis colorectal cancer (HNPCC)

This is slightly more common than FAP. Out of every 100 colon and rectal cancers, between 3 and 8 are caused by this condition. Polyps usually appear before the age of 50. Women with HNPCC also have an increased risk of cancer of the ovaries (called [ovarian cancer](#)) and cancer of the lining of the womb (called endometrial cancer).

If you have HNPCC in your family, tell your doctor. Some doctors will recommend you have a screening test for polyps twice a year. If you're a woman, you should also have regular checks for ovarian cancer and endometrial cancer.^[9]

Why would I need a colostomy?

If your bowels aren't working properly, a colostomy provides a way for food waste to safely leave your body. Your surgeon creates a new opening for your colon (usually on your belly) so that your faeces can be collected in a bag called a **colostomy bag**.

Bowel cancer

Some people with colon or rectal cancer need a colostomy because the muscles that control their bowel movements have been removed during surgery. These muscles are called **sphincter muscles** and they are in your rectum and anus. Sphincter muscles help to keep faeces in your rectum until you reach a toilet. If these muscles are removed, you can't control your bowels.

You will need to have your whole rectum and anus removed only if your tumour is in the lower part of your rectum. It is then that you will need a permanent colostomy. Most people will not need a colostomy if their cancer is in their colon (rather than in their rectum).

You should talk to your surgeon about the likelihood that you will need a colostomy and how this might affect your life.

Living with a colostomy

Learning to live with a colostomy can be daunting. But you're not alone. There are thousands of people in the UK who have had surgery so that bodily waste (either faeces or urine) can pass through a new opening.

If you have colon or rectal cancer, you may need a colostomy because the muscles that control your bowel movements have been removed. Your surgeon will create a new opening for your colon (usually on your abdomen) so that your faeces can be collected in a bag called a colostomy bag.

Having a colostomy should not stop you doing anything you used to do. But you will have to change your routine and get used to changing the bag that collects your bowel movements.

You'll get plenty of help adjusting to having a colostomy. While in hospital, you'll probably be seen by a nurse who deals just with caring for people who have had this operation. He or she will advise you about what to expect after your operation, show you how to look after the opening in your abdomen and teach you about all the special equipment you'll need. And when you get home, a nurse will check on your progress to make sure you feel confident about what you need to do.

You may be able to decide with your surgeon where on your abdomen to have your bowel open out. The opening should be in a spot that you can see and reach easily. Your doctor or nurse will offer advice on the best place for it. After that, you'll need to get used to the bag and how to empty and change it. Bags are much lighter and smaller than they used to be. They shouldn't show through your clothes. The bag will lie flat against your body, and you can choose between disposable and reusable varieties. Most are also fitted with a charcoal filter so they don't smell.

Bowel cancer

The worst thing for many people with a colostomy is the sight of the **stoma**. This is the spot where your colon opens onto your abdomen. It will look wet and glossy, rather like the inside of your mouth. It is delicate, and can bleed and give off white stringy mucus.

Another thing you'll notice is that your stools are not semisolid like they used to be, but runny. This is because when your bowel movements pass through your colon, the tissues there remove most of the water and channel it back into your body. When your bowel movements no longer pass through your colon, your body doesn't absorb this liquid, so your stools are much more watery.

Because of this, you need to beware of leakage around the stoma. This can irritate your skin and lead to infection. You can avoid leaks by making sure your bag fits closely. Check your bag size regularly as your stoma may shrink, especially in the first few weeks after your operation.

Here are some tips on managing your colostomy from day to day.

- Always wash your hands before emptying or changing your bag.
- Clean the skin around your stoma whenever you change your bag. Use only water and a little soap, unless your doctor or nurse advises otherwise.
- Empty the pouch when it's one third full, and before you go to bed.
- Keep all your supplies within easy reach when you go to the toilet.
- When you remove your bag, cover the stoma with a piece of tissue to stop any leakage.
- Contact your doctor or nurse if your stoma bleeds heavily, turns black, becomes swollen, or smells strongly.
- If you have problems with wind and rumbling noises, try to avoid foods that give you wind, such as broccoli, cheese, beans, and beer.
- Get plenty of exercise as this can help reduce wind.
- If you're having problems with your bag smelling, try eating foods that have a natural deodorant, such as apple sauce, cranberry juice, and yoghurt.
- Join your local colostomy group. You can get useful tips and advice from other people who have a colostomy. And these people can be a valuable source of moral support too.

How does radiotherapy work?

To understand how radiotherapy works, it is helpful to know about the phases that all cells in the body go through to grow and divide to make new cells.

- In the resting phase, the cell hasn't started to divide.
- Then, the cell is prompted to reproduce, perhaps because other cells have been damaged or are worn out and need replacing.
- The cell makes a copy of its genetic code (its DNA) so that there will be one copy available for each new cell when the original cell divides in two.
- The cell forms other important proteins that it needs to function.
- The cell splits into two new cells. This last phase takes only half an hour to an hour.

Radiation works best at killing cells that are dividing, particularly if they are dividing rapidly. It isn't so good at killing cells that are resting or that divide slowly.

To kill as many cancer cells as possible, doses of radiation may be given five days a week for five weeks to seven weeks. The doses are given in this way because not all of the cancer cells will be dividing at the same time. So to destroy as many cancer cells as possible, you need to be treated for several days at a time. Because normal cells rest longer than cancer cells do before dividing, they are less likely to be destroyed by radiation.

The dose of radiation that you need will be carefully calculated by your doctor.

Glossary:

lymphatic system

The lymphatic system is your body's way of clearing unwanted materials from your blood and tissues. It includes a network of lymph nodes that filter these materials to detect if there is an infection that needs to be dealt with by your immune system.

liver

Your liver is on the right side of your body, just below your ribcage. Your liver does several things in your body, including processing and storing nutrients from food, and breaking down chemicals, such as alcohol.

faeces

Faeces are also called stools or bowel movements. They contain what is left over from the food you have eaten and other things that your body wants to get rid of.

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.

ulcerative colitis

Ulcerative colitis is a disease that affects the wall of your large intestine. Ulcerative colitis causes you to have diarrhoea and get blood in your stools. Ulcerative colitis is an autoimmune disease. This means that you get it when your body attacks part of itself.

Crohn's disease

Bowel cancer

Crohn's disease causes inflammation in your bowel. It usually affects your small intestine, but can happen anywhere in your digestive tract. It causes diarrhoea and bloody stools.

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.

ulcer

An ulcer is an open sore. Ulcers can happen in many parts of your body, such as in your stomach, and the skin of your legs, mouth, or genitals.

lymph nodes

Lymph nodes (also called lymph glands) are small, bean-shaped lumps that you can't usually see or feel easily. You have them in various parts of your body, such as your neck, armpits, and groin. Lymph nodes filter lymph and remove unwanted things from your body, such as bacteria and cancer cells.

haemorrhoids

Haemorrhoids are swollen veins in the anus. Sometimes you can see or feel them and sometimes they are inside the anus. Haemorrhoids can hurt and bleed. They usually happen when you strain a lot to pass a stool.

anaemia

Anaemia is when you have too few red blood cells. Anaemia can make you get tired and breathless easily. It can also make you look pale. Anaemia can be caused by a number of different things, including problems with your diet, blood loss and some diseases.

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.

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.

red blood cells

Red blood cells are the part of your blood that makes it red. Their main job is to carry oxygen from your heart and lungs to the tissues of your body. Once these cells unload oxygen, they pick up carbon dioxide. They take carbon dioxide back to your lungs so it can be breathed out of your body.

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.

laxative

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

ultrasound

Ultrasound is a tool doctors use to create images of the inside of your body. An ultrasound machine sends out high-frequency sound waves, which are directed at an area of your body. The waves reflect off parts of your body to create a picture. Ultrasound is often used to see a developing baby inside a woman's womb.

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).

MRI scan

A magnetic resonance imaging (MRI) machine uses a magnetic field to create detailed pictures of the inside of your body.

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.

anus

The anus, which is at the end of the rectum, is where stools leave your body when you go to the toilet. Part of the anus is a muscle that helps you hold in the stool until you are on the toilet.

general anaesthetic

You may have a type of medicine called a general anaesthetic when you have surgery. It is given to make you unconscious so you don't feel pain when you have surgery.

radiotherapy

Bowel cancer

This is also called radiation therapy. It is a treatment that uses high-energy X-rays to kill cancer cells. It's most often used for tumours that are hard to treat with surgery alone. You won't feel any pain during this treatment, but you may get some side effects afterwards.

lymph fluid

Lymph is a clear or whitish liquid that flows throughout your body through the lymphatic vessels and lymph nodes (also called lymph glands). Lymph contains proteins and fats, some red blood cells and many white blood cells (especially lymphocytes). Lymphocytes help your body fight infection.

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.

bacteria

Bacteria are tiny organisms. There are lots of different types. Some are harmful and can cause disease. But some bacteria live in your body without causing any harm.

hormones

Hormones are chemicals that are made in certain parts of the body. They travel through the bloodstream and have an effect on other parts of the body. For example, the female sex hormone oestrogen is made in a woman's ovaries. Oestrogen has many different effects on a woman's body. It makes the breasts grow at puberty and helps control periods. It is also needed to get pregnant.

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.

lymph

Lymph is a clear or whitish liquid that flows throughout your body through the lymphatic vessels and lymph nodes (also called lymph glands). Lymph contains proteins and fats, some red blood cells and many white blood cells (especially lymphocytes). Lymphocytes help your body fight infection.

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.

septic shock

Septic shock is a serious condition caused by a large number of bacteria getting into your blood. It's also called septicaemia, sepsis or blood poisoning. Usually, when bacteria get into your blood, your immune system kills them. But if your immune system isn't working well, it can get overwhelmed. Then, the bacteria multiply and start to release poisonous chemicals (called toxins) into your blood. These chemicals cause your blood pressure to drop massively. When this happens, organs such as your brain, heart, kidneys and liver may not be able to work properly because they aren't getting enough blood. Septic shock needs to be treated urgently, usually with antibiotics, to stop these vital organs failing and to prevent death.

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.

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