

briefsheets: Bowel cancer

Bowel cancer is the third most common cancer in the UK*. Each year nearly 35,000 cases are diagnosed in the UK and the disease claims over 16,000 lives**.

About bowel cancer

- Bowel cancer, also called colorectal cancer, accounts for one in eight new cancer cases in the UK.
- It is the second most common cause of cancer death, claiming around 45 lives each day in the UK.
- Most bowel cancers start with a polyp, a small 'mushroom-shaped' growth in the lining of the bowel. Polyps are usually harmless, but some can become cancerous.
- If detected at an early stage, around nine out of ten cases of bowel cancer can be successfully treated.
- But half of all bowel cancer patients are diagnosed after their cancer has spread, making treatment much more difficult.

What is bowel cancer?

The cells lining the inside of the bowel are constantly dying and being replaced. A cancer starts to develop when genes in some of these cells become damaged and this process of renewal goes wrong. These abnormal cells can form a growth, or polyp, which may later develop into cancer. If the cancer is not treated, cells can break away and spread to other parts of the body, often to the liver. Some people inherit a damaged gene from a parent that places them at increased risk of developing bowel cancer. But in the vast majority of cases, the gene damage is acquired during a person's lifetime.

Progress and future perspectives

- Despite an increase in incidence, the number of people dying from bowel cancer over the last ten years has fallen and will continue to fall, as the disease is diagnosed earlier and treatments improve.
- The recent introduction of an NHS bowel cancer screening programme should save many more lives in the future.
- The results of large-scale studies, such as EPIC, will give us clearer ideas about how best to prevent bowel cancer.

What affects your risk?

Age

The risk of bowel cancer increases with age. More than nine out of ten cases are in people over 50.

A previous polyp or bowel cancer

If you have had a polyp removed from your bowel (especially an adenomatous polyp), or if you have had bowel cancer before, you are at increased risk of developing the disease.

Chronic bowel inflammation

People with a condition called ulcerative colitis, or who have Crohn's disease, have a slightly increased risk of bowel cancer.

Diet

A diet that is high in red or processed meat, and low in fibre, fruit, vegetables and folate can increase the risk of bowel cancer.

Exercise

Regular moderate exercise reduces the risk of bowel cancer. The more a person exercises, the lower their risk.

Obesity

Being overweight or obese increases the risk of bowel cancer.

Smoking and alcohol

Drinking alcohol may increase the risk of bowel cancer, especially in people with low levels of folate in their diet. Smoking may also increase risk, particularly in heavy drinkers.

Family history

A few people are born with a much higher risk of bowel cancer because they have inherited a faulty gene from one of their parents. These people will often have a strong family history of bowel cancer.

A number of genetic conditions are linked to bowel cancer, including familial adenomatous polyposis (FAP) and hereditary non-polyposis colon cancer (HNPCC). But overall, fewer than 1 in 20 cases of bowel cancer are due to a fault in one of these 'high-risk' genes.

How is bowel cancer treated?

Most bowel cancer patients are treated by surgery but the majority of patients will also have chemotherapy. Some may also have radiotherapy. 5-Fluorouracil is the main drug used in chemotherapy for the disease, but irinotecan and oxaliplatin are also used. Some patients are offered new combinations of these drugs or experimental treatments as part of a clinical trial.

The Bobby Moore Fund for Cancer Research UK

Cancer Research UK is a major funder of research into all aspects of bowel cancer. In 1993, Stephanie Moore MBE established the Bobby Moore Fund, in partnership with Cancer Research UK, to raise money for bowel cancer research and increase awareness of the disease. Since the Fund began, it has raised over £6 million for research into bowel cancer. For more information, please visit www.bobbymoorefund.org



Bowel cancer: our research

Understanding the causes

Cancer Research UK funds a wide range of research to discover and study the faulty genes involved in bowel cancer. Understanding these may open up new possibilities for prevention, detection and treatment of the disease.

One area of our work focuses on the rare inherited gene faults that put some people at high risk of bowel cancer. For example, a Cancer Research UK-funded team in London is looking at faults in a gene called APC, which was located by our scientists in the 1980s. These faults cause a syndrome called FAP. People with FAP have an extremely high risk of developing bowel cancer. Meanwhile our scientists in Edinburgh are looking for faults in high-risk genes, such as the so-called 'mismatch repair' genes, in people who have developed bowel cancer before the age of 55.

We are also searching for other important bowel cancer genes. Scientists in Sutton are co-ordinating a national collaborative effort called CORGI. They are looking for new high-risk genes in families with a history of bowel cancer that is not associated with any of the known susceptibility genes. In addition, our researchers are looking for subtle genetic changes that carry a moderate risk of bowel cancer but are likely to be much more common in the general population.

A person's risk of bowel cancer is not just influenced by their genetic make-up. Instead, it is determined by a complex interplay between their genes, their lifestyle and other factors. In Dundee and Leeds we are funding research studying the interaction between our genes and things like diet in affecting a person's bowel cancer risk. And we are making progress in uncovering which particular aspects of diet are important. Cancer Research UK funds the UK arm of EPIC (The European Prospective Investigation into Cancer and Nutrition), a massive European investigation into the links between diet and health. The study has already shown that a high-fibre diet lowers bowel cancer risk, while regularly eating large amounts of red and processed meats increases it.

Cancer Research UK funds many other investigations throughout the UK to gain a better understanding of how bowel cancer develops at the molecular level. For example, a team in Bristol is investigating how normal bowel cells die, and what goes wrong with this process in cancer. And scientists in Glasgow are investigating how bowel cancer spreads to other parts of the body.

Prevention and early detection

The earlier bowel cancer is diagnosed, the easier it is to treat. The NHS is currently rolling out a national bowel cancer screening programme across the UK. It will be based on the Faecal Occult Blood test, which looks for trace amounts of blood in stool samples. The programme is being introduced in phases amongst men and women in their sixties, and aims to cover the entire UK population by 2009.

Cancer Research UK-funded scientists in London are coordinating a UK-wide trial of another screening technique called 'flexible sigmoidoscopy'. This involves inserting a flexible plastic tube, fitted with a miniature camera, into the bowel to detect polyps and cancers. Early results are encouraging and the technique may also form part of the national screening programme in the future. A group in Oxford is evaluating the information material available for the general public to accompany screening invitations.

Researchers in Cambridge are investigating whether DNA testing of stool samples may be able to assist in the prevention and early treatment of bowel cancer. And a group in Birmingham are running a trial to assess whether a blood test for a molecule called MMP-9 could help diagnose the disease.

Identifying the genes that cause bowel cancer in families and developing of genetic testing will help those at highest risk. Researchers in London are working with these families to determine how best to monitor and care for them.

In Nottingham, researchers have found that aspirin can help prevent bowel cancer from returning in people most at risk of the disease.

Improving treatment

A key priority for Cancer Research UK is to improve treatments for bowel cancer patients, particularly for those with advanced disease. We are supporting clinical trials across the UK to find the best combination, timing, and dose of drug treatments and radiotherapy.

A team in Leeds is looking at the best way to treat older people with advanced bowel cancer and patients who have become resistant to chemotherapy. And a team in Belfast is also tackling the challenge of drug resistance in bowel cancer patients by examining how their genetic make-up affects response to treatment. In Southampton, scientists are investigating whether a course of chemotherapy before (as well as after) surgery helps control bowel cancer that has spread to the liver. And we are developing ways of predicting a person's response to treatment, allowing doctors to tailor treatment more specifically to individuals.

We also fund a huge range of research all over the UK that aims to convert the latest discoveries in the lab into therapies that will save more lives. Our world renowned teams in Sutton, Newcastle and Manchester are leading the search for new drug treatments. And we are funding work in Southampton and Leeds on cancer vaccines, which may allow doctors in the future to 'teach' a patient's immune system to kill cancer cells.

Improving quality of life

Cancer Research UK is committed to improving the quality of life for cancer patients and supporting them and their families.

Researchers in Aberdeen are looking at ways to reduce the social inequalities in survival and quality of life in bowel cancer patients. And we are funding studies in Dundee to help GPs identify patients with gastrointestinal symptoms who are at high risk of bowel cancer, so that they can be treated quickly and effectively.