

Bowel Cancer and Genetics

Introduction

This leaflet is for people with a moderately increased risk of developing bowel cancer. This means that their risk of developing bowel cancer is higher than that of the general population but they do not fit into the high risk group. Bowel cancer (also known as colorectal cancer) is common. About 1 in 16 men will develop it (around 6%), and 1 in 20 women (5%). Therefore, many families will have a relative affected by bowel cancer.

This is the second most common cancer in women (after breast cancer), whereas in men it ranks third (after prostate and lung cancer). Almost three-quarters of bowel cancers occur in people aged 65 and over.

About 15% to 30% of bowel cancers are inherited and only about 5% are due to clearly-defined inherited syndromes. The remaining cases occur by chance and are thought to be the result of environmental factors.

Family history

We need accurate information about family members affected by bowel cancer when assessing the risk for relatives.

This includes how they are related to the person seeking advice, their age at diagnosis and the specific site of their cancer. We also need information about all cancers that have occurred in the family and the occurrence of bowel polyps in relatives. Some cancers, such as cancer of the lining of the womb (endometrial cancer), are known to have an association with an inherited form of bowel cancer.

Factors indicating a strong genetic risk to bowel cancer include:

- bowel cancer at a young age for a relative (under 50 years of age)
- relatives with more than one primary bowel cancer
- several close blood relatives affected by bowel cancer
- multiple bowel polyps

If your relatives have not experienced any of these features, it is unlikely that there is a genetic predisposition in your family.

If you have one close relative (parent, sibling or child) diagnosed with bowel cancer over the age of 50, you are unlikely to have a significantly increased risk of developing bowel cancer. Screening may not be

appropriate for you, although you are encouraged to participate in the NHS Bowel Screening Programme when you reach 60 years of age.

Genes

We each have about 25,000 genes that control the way our body works. Several genes have been discovered that, if altered (mutated), can increase the risk of bowel cancer.

Most of these genes are inherited in a dominant way.

We inherit two copies of most genes, one from our father and one from our mother. In dominantly-inherited bowel cancer syndromes, only one copy of an altered gene needs to be passed on from a parent for the child to inherit the risk. Therefore, a parent who has a mutated gene has a 50% (1 in 2) chance of passing the gene on to their children. Not all gene carriers will develop cancer.

Some types of bowel cancer are inherited in a recessive way. Two mutated genes are required, one from each parent. In this case, there is unlikely to be a history of bowel cancer in previous generations or either parent. The children of people with bowel cancer caused by a recessively-inherited predisposition are at risk only if both parents carry the same mutated gene.

Genetic testing

Genetic testing is available for some families with features of a genetic predisposition. If appropriate, we will discuss this with you.

Environmental factors may increase the chance of developing bowel cancer

- High intake of red and processed meat can increase the chance of developing bowel cancer, whereas a diet rich in fruit and vegetables can reduce the risk – government guidelines recommend at least 5 portions of fruit and vegetables each day
- At least 10% of colon cancers in the UK are related to being overweight or obese
- Being inactive increases the risk of bowel cancer
- Research has shown that people drinking more than 30g a day of alcohol have an increased risk of bowel cancer. This is slightly more than one pint of lager (5% alcohol) or one 250ml glass of wine (13% alcohol) a day
- Smoking increases the risk

Recent studies have suggested that regular intake of low dose aspirin (75mg daily) may reduce the risk of colorectal cancer after 5 years of use. However, there are concerns about possible side effects, such as gastrointestinal bleeding. If you are considering taking aspirin for this reason, please consult your GP first.

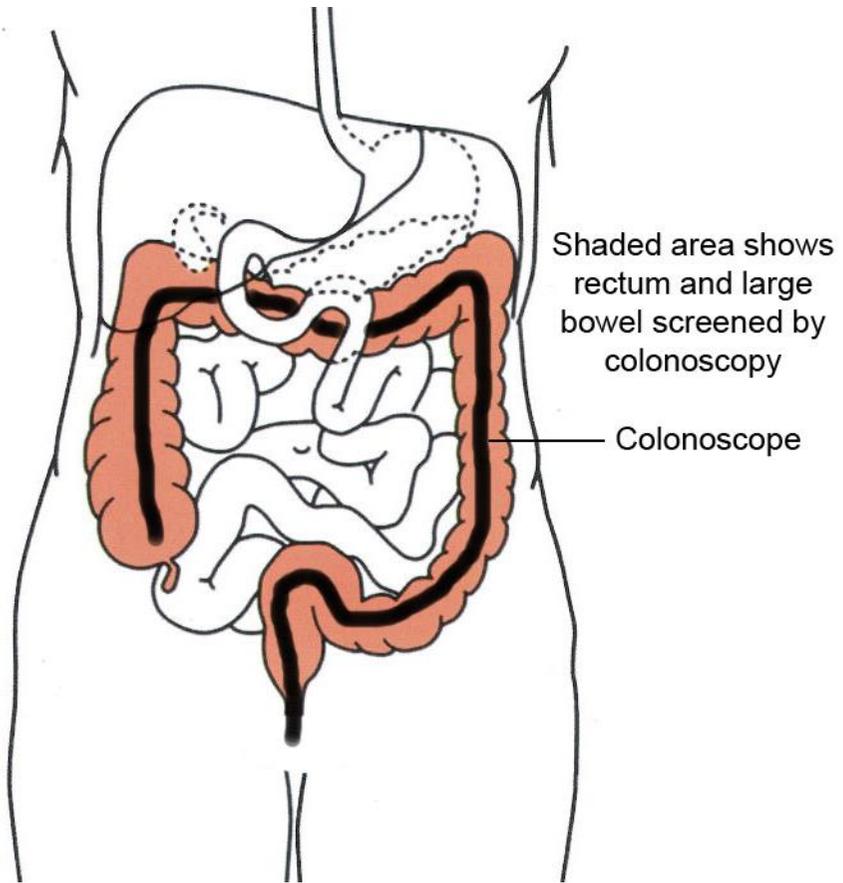
Screening and follow-up

We will suggest that we should examine your rectum and bowel if you have a significant chance of developing bowel cancer. This screening procedure is called a colonoscopy. A flexible tube is passed along the colon via the anus, so that the entire colon can be examined with a camera. This is usually carried out under light sedation as a day procedure.

It is thought that bowel cancer usually develops from a small nodule on the lining of the bowel wall called a polyp. Polyps are fairly common and around 1 in 3 people will develop a non-cancerous polyp by the age of 60.

There are different types of polyps and some are not thought to develop into cancer. Polyps called adenomas may sometimes become malignant. The change from a benign polyp to a cancer is thought to take place over many years.

If polyps are discovered during colonoscopy they are usually removed and examined in the laboratory. The frequency of future colonoscopies will be determined by the type, size and number of polyps removed and the pattern of cancer in the family. Regular colonoscopy and removal of polyps before they have a chance of developing into a cancer is known to reduce the risk of bowel cancer significantly.



The NHS Bowel Cancer Screening Programme

Men and women aged 60-75 are invited to participate in this screening programme every two years. You will be sent a faecal occult blood test (FOBT) to use at home and return to a laboratory for testing. This test looks for

blood in the sample. You will be offered a colonoscopy if you have a positive FOBT. More information can be obtained by phoning the helpline on 0800 707 6060

Bowel awareness

The most common symptoms of bowel cancer are:

- a persistent change in bowel habit, especially needing to go to the toilet more often, or loose stools for several weeks
- bleeding from the back passage or blood in the bowel motion
- severe abdominal pain
- a lump in the abdomen
- unexplained tiredness or weight loss

Our knowledge of cancer genetics is rapidly growing and this information summarises our knowledge to date.

Please keep us informed if there are any significant changes in your family in the future, as this may alter the advice given to you.

Please contact the Family Cancer Clinic if you would like more information:

Clinical Nurse Specialist: Carole Cummings

Family Cancer Clinic

Level 5V

The North West London Hospitals NHS Trust

St Mark's Hospital

Northwick Park

Watford Road

Harrow

HA1 3UJ

Telephone: 0208 235 4266

Further information can be found at:

www.cancerresearchuk.org

Telephone 020 7121 6699

www.cancerhelp.org.uk

Cancer Research UK

Telephone 0808 800 4040

www.corecharity.org.uk

Core Telephone 020 7486 0341

Core Freepost, LON4268, London, NW1 0YT

www.macmillan.org.uk

Telephone 0808 808 0000

www.hereditarycc.org

Hereditary Colon Cancer Association

www.cancerscreening.nhs.uk

Bowel Cancer Screening Programme

Freephone 0800 707 6060

Written in association with:

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Northwick Park Hospital

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