**Making sense of Significant Polyps and Early Colorectal Cancers (SPECC)**

This booklet offers information to help you understand more about polyps which we have termed ‘significant’ because they require careful treatment planning and possibly specialist management as they might be cancers and also early-stage bowel cancer. It covers some basic definitions, how they are found and investigated, and the different ways in which they can be treated and followed up. It aims to help you make an informed decision about the best treatment for you.

1. **What is a polyp ?**

A bowel polyp is a wart like abnormal growth on the inner lining of the colon (large bowel) or rectum. These are very common and many people over the age of 50 have polyps in their colon and / or rectum without having any symptoms. The great majority of polyps are non-cancerous (also referred to as benign) but over time - usually years - the polyp grows and may gradually change into a cancer. Only a small proportion of polyps(1-10%) develop into invasive bowel cancer.

* 1. **What is a simple polyp**

Simple polyps are often very small. They can be in the form of a small “cherry like” swelling on a stalk (pedunculated), or as a slightly raised lesion (sessile).

**1.2 What is a significant polyp ?**

Broadly speaking, these are flat, large polyps – usually the size of a 1p coin or bigger – that may be more difficult to remove either because of where they are located in the bowel, or simply due to their size. Although the vast majority of these polyps will be benign, they are ‘significant’ because some may have cancer cells hidden within them and/ they may be difficult to remove at colonoscopy.

Apart from being large, significant polyps may also have an irregular shape, or abnormal patterns on their surface that helps to distinguish them from other benign polyps. To make a definite diagnosis of cancer within a significant polyp can be very difficult and often your doctor may spend a considerable time assessing the polyp at endoscopy to ensure that it is appropriately treated.

1. **1.3 What is Early Colorectal Cancer?**

Bowel cancer, also known as colorectal cancer, is any cancer that affects the colon (large bowel) and rectum (back passage). It usually grows very slowly, often over a period of many years, before it starts to spread and affect other parts of the body.

Almost allbowel cancers start off as a polyp, a wart like growth in the lining of the bowel. Polyps can be in the form of a small “cherry like “swelling on a stalk (pedunculated), or a flat or slightly raised lesion (sessile).

If a polyp can be found and removed at the non-cancerous stage then bowel cancer from that polyp will be prevented. The NHS bowel screening programme asks people over 60 (50 in Scotland) to complete a simple FOB (faecal occult blood) test which detects blood hidden in small samples of stool. A FOB test does not diagnose bowel cancer, but will identify blood in the faeces. A positive test will trigger an invitation to have an investigation to find out what is causing the bleeding.

As a result of this screening, more people are being diagnosed at a very early stage of their cancer.

**4.  How is the polyp assessed and what tests might be used?**

You will be offered a telescopic examination of the bowel, which could be a flexible sigmoidoscopy or a colonoscopy. This may be carried out by a trained endoscopist or by a gastroenterologist. For more details of these investigations please see <https://www.beatingbowelcancer.org/tests-and-investigations>.

During this procedure, polyps may be detected. This may be a simple polyp which looks benign and which can be easily removed by the endoscopist. The polyp will be sent to a histopathologist for microscopic analysis to rule out cancer. These results, referred to as histology, will take a week or so, as the tissue has to be fixed and processed before it can be analysed.

In a small percentage of polyps which look benign, cancer cells are found inside the polyp and a diagnosis of ***cancer in a polyp*** is made based on its microscopic analysis. In some cases the polyp does not look typically like a cancerous polyp but the endoscopist notices that it displays one or more features which make it suspicious that there could be some cancer cells in it. In this case the endoscopist may leave the polyp in place, but take a tiny sample of this tissue – called a biopsy -and send it to the histopathologist, who will carefully check the cells under the microscope. In other cases, the polyp has an appearance which looks very likely to be a cancer (need some new diagrams here to show polyps).

**3.   Staging**

If you are diagnosed with a significant polyp or a colorectal cancer, you will be asked to undergo further tests to find out more about its size and position in the bowel and whether it has spread. This process is called ‘staging’.

The recommended staging investigations for polyps arising in rectum include an MRI (magnetic resonance imaging) scan and/or a test called an endoanal ultrasound (also known as trans-rectal ultrasound or TRUS) to get more information about the lesion. A Whole body CT (computerised tomography with an intravenous injection of contrast) scan would also be performed if it is proven that the polyp contains cancer

 Both the MRI and endoanal ultrasound involves looking at the bowel wall and the tissues beyond the wall of the bowel in more detail. These tests when carefully evaluated by the specialist radiologist for the MRI or ultrasound expert will give the best indication of how far into the bowel wall the polyp or rectal cancer has spread and importantly the type of procedure that would be safest to remove the polyp. These are safe procedures which are usually very well-tolerated, taking no longer than 30-40 minutes. No preparation is required for the MRI. Preparation for the ultrasound involves not eating or drinking for 6 hours beforehand and having an enema at the hospital before the test.

The purpose of staging the polyp is to determine how deeply the polyp has extended into the bowel lining (called the mucosa and submucosa), the muscle of the bowel wall or beyond the bowel wall into the fatty tissue. We classify a tumour from this information by using the TNM staging system. TNM stands for Tumour, Node, Metastasis. This staging system describes the size of the initial cancer “T” for the depth of the primary tumour, “N “- whether the cancer has spread to the lymph nodes, and “M” whether it has spread to a different part of the body (metastasised).

 The results of these investigations provide a provisional staging based on imaging which will help determine the best treatment choices for a particular cancer or polyp. These decisions are based on assessing how much the polyp has gone into the different layers that make up the bowel wall

Scans (examples shown above are MRI images but similar information could also be obtained from endolumnal ultrasound) show how polyps are staged by assessing the depth of invasion into the bowel wall, spread to lymph nodes or venous invasion outside the bowel wall

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| **Information that you should expect to see from your MRI or EUS staging reports which will help to inform the treatment options that you can be offered:**The shape and type of polyp |
| The diameter and thickness of polyp (millimetres) |
| If the polyp has a stalk – the stalk’s diameter and thickness |
| If there is a stalk does it look to be invaded by the tumour – how much of the stalk appears preserved |
| The width of the portion of the polyp that appears attached or invades into the bowel wall |
| The degree of preservation measured in millimetres of the bowel lining (submucosa), muscle layer at the area of the polyp that appears to be attached or invading |
| The border and appearance of lymph nodes (not their size) to assess risk of malignancy |
| The height of the polyp in relation to the anus (anal verge and anal sphincter) |
| An evaluation of veins for spread of tumour which could be directly from the polyp close to the bowel wall or away from the bowel in the surrounding fatty tissues |

**4. What are the treatment options for significant polyps ?**

The position of a polyp (and also of a cancer) in the colon or rectum is very important in determining what will be the best treatment. Some polyps are difficult to remove, perhaps because they are very low down in the bowel, or because they are partly hidden in a fold of the large bowel. In such cases, the endoscopist may decide not to try and remove it at that time but to re-assess, arrange further tests and plan what needs to be done at a later date.

Removing and managing a significant polyp or an early cancer low down in the rectum is different to treating one higher up the rectum or in the colon. Treatment of polyps and cancers in the low rectum may result in damage to the anal sphincters, so careful planning is needed.

It may be that after a colonoscopy you are told that you have a polyp which requires another technique (and often another doctor) with special experience and skills to assess and remove it. This may require a referral for you to see a doctor (either an endoscopist or a surgeon) in another specialist centre.

A significant polyp in the rectum, (which may have a cancer within it), can sometimes be removed by one of three special techniques:

* **Endomucosal resection (EMR) – )** performed to remove large polyps, areas of abnormality or early cancers and isusually performed by an endoscopist
* **Transanal Endoscopic Microsurgery (TEMS) -** is only possible for rectal polyps and will be performed by a surgeon
* **Endoscopic Submucosal Dissection (ESD )** may be performed for polyps in both the colon and rectum by a surgeon or a gastro-enterologist**.**

All these techniques use special instruments to remove the polyp through your back passage.

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**Endomucosal resection (EMR)**

EMR is a procedure to remove pre-cancerous, cancerous or other abnormal

tissues (lesions) from the digestive tract through an endoscope. Although endoscopic mucosal resection is primarily a treatment procedure, it is also used to retrieve tissues for use in diagnosis. If cancer is present, EMR can help determine if the cancer has invaded tissues beneath the digestive tract lining.

A common approach of EMR includes these steps:



* Injecting some fluid under a lesion (abnormal area) to create a safety cushion between the lesion and healthy tissue underneath it
* Snaring and cutting the lesion with a tool that burns through tissue to separate it from healthy tissue
* Removing the abnormal tissue from your body

Because larger and more difficult lesions are removed at EMR, the risk of making a hole through the bowel.(called a perforation) or bleeding is slightly higher, although still very uncommon (occurring once in every 100 patients). In general EMR is considered the safest technique for removing flat and large polyps. Sometimes the endoscopist cannot remove the entire polyp for technical reasons. If this happens, further endoscopic resection or an operation might be planned at a later date.

**Transanal Endoscopic Microsurgery or TEMS** (**transanal endoscopic** **microsurgery) c**an be suitable for small, early cancers (T1 and T2 tumours) high up in the rectum. It is a minimally invasive technique. This technique is not available in every hospital; however you can request to be referred to a specialist centre if your multidisciplinary team feels that you might be a suitable candidate.

The surgeon inserts a specially designed sigmoidoscope into your anus when you are under anaesthetic to remove the tumour from the wall of the rectum, using specialist forceps and diathermy (to seal the blood vessels).

To perform the operation, your rectum needs to be completely empty. You may need to take oral bowel preparation the day before surgery or the back passage may be cleared out using an enema on the day of surgery. A specialist nurse will explain and ensure you are prescribed the preparation you require.

Using specially designed instruments and viewing the procedure through a microscope your surgeon will precisely cut out the polyp or small cancer ensuring that a cuff of normal surrounding lining is included in the portion of rectum removed (See Figure 2). After this, your surgeon will decide if the space left behind needs to be closed by stitching the healthy edges of the rectal lining together or simply left open to heal naturally. Since the operation is performed through your anus, there will be no incisions (cuts) on your skin.

(reference: <http://www.acpgbi.org.uk/patients/treatments/transanal-endoscopic-microsurgery-tems/>).



Figure 2: An illustration of TEMS

**Endoscopic Submucosal Dissection** or **ESD** is a procedure to remove precancerous or cancerous polyps (lesions) from the bowel through an endoscope. Although ESD is primarily a treatment procedure, it is also used to retrieve tissues for use in diagnosis. If cancer is present, ESD can help determine if the cancer has invaded tissues beneath the bowel lining.

The ESD procedure can take longer than a standard colonoscopy/endoscopy. This can vary depending on the size and position of the polyp/abnormal area, but can take up to several hours. A sedative injection can be given to help you relax during the test.

The main risks of this treatment are:

**Perforation** – this means making a hole through the bowel. For ESD, this occurs about once in every 50 patients. Sometimes perforations can be treated simply using the endoscope and/or antibiotics but sometimes an emergency operation is required.

**Bleeding** – minor bleeding is seen commonly during and rarely after ESD but usually settles spontaneously. In one to two in 100 patients, bleeding is more significant and it may require a blood transfusion or further endoscopies. It can occur up to 14 days after the procedure. Very rarely an emergency endoscopy or operation may be required to stop it.

**Incomplete removal** – sometimes the endoscopist cannot remove the entire polyp for technical reasons. If this happens, further endoscopic resection or an operation might be planned at a later date.

**Narrowing of the large intestine** - Removing large rectal lesions can lead to some scarring of the tissues and sometimes narrowing of the bowel. This may lead to you having some difficulty in opening the bowel However treatment is available should this happen; either by taking medicine to soften the stool which can help or stretching of the area if required through the endoscope (bowel dilatation).

**Pain –** localised to the bowel, usually mild and short-lasting.

Both TEMS and ESD are often referred to as local excision treatments. They play an important role in treating significant polyps and early polyp cancers that can be easily and completely removed. However it is important to be aware that these techniques are not always possible or recommended for the following reasons:

* If your polyp or polyp cancer is in a difficult location, perhaps on a bend or behind a fold in the bowel wall or next to another structure such as a diverticulum
* If the polyp is too large or stuck down in the bowel wall to be safely removed in one piece.If your general health makes the risks of either of these procedures too high.

Following either procedure, you will have a follow-up appointment with the gastroenterologist to discuss the treatment outcome and consider if any further treatment is required. Important questions to consider include:

 \* Did the treatment remove all abnormal tissues?

 \* What were the histology results (the laboratory tests)? Did the polyp contain any cancerous cells?

 \* Is there a need for further treatment?

 \* If the polyp contained cancerous cells, will additional treatments be needed?

 \* What will the follow-up be?

If the polyp contained cancer or was not fully removed by either of the above techniques then further treatment, most commonly a bowel resection, may be advised.

**5.   What happens if my polyp is cancerous or thought to be?**

If the polyp cannot or should not be removed by either of the above techniques – EMR or ESD - then a bowel resection may be advised. A bowel resection is a more invasive procedure and does carry more risks than a local excision. However, increasingly bowel resections are often performed using keyhole (laparoscopic) surgery techniques which make it possible to remove the cancer without having to make a large surgical incision. Laparoscopic surgery can result in less pain and usually a shorter stay in hospital than open bowel surgery (which involves a laparotomy). Laparoscopy in general results in a quicker return of mobility and independence.

A bowel resection is nonetheless a major operation and there can be complications. Some of the most common side-effects of having this surgery include:

• a change in bowel function (diarrhoea, urgency or constipation)

• nausea and / or vomiting

• loss of appetite or bloating

• tiredness and a lack of energy.

Surgery performed on the bowel can lead to changes in your bowel, urinary and sexual function and these may be more significant when part of the rectum is removed After rectal cancer surgery, your bowel habit may never return to the type of function you had before surgery and up to a half of people who have this surgery do experience increased frequency or urgency in their bowel movements, which require further help. These side effects may only last a few weeks although some people can find their recovery takes several months, particularly if they are older or have other health issues.

Any surgery on the colon and rectum, whether performed as an open operation or laparoscopically needs to be considered carefully with discussion with your surgical team.

**6. What other options are there?**

You may chose not to have major surgery but instead opt either to have a non-surgical cancer treatments – radiotherapy and possibly also chemotherapy or you may decide to monitor the situation by entering into an endoscopic and radiological surveillance programme.

**Radiotherapy and chemotherapy**

An alternative to major surgery would be to consider a combination of chemotherapy and radiotherapy. Radiotherapy is the use of controlled, high-energy radiation, called radiotherapy , to destroy cancer cells. It is mainly used in rectal cancer polyps although techniques are being developed to also reach polyps found above the rectum.

The type of radiotherapy more commonly used is external beam radiotherapy. It is delivered from outside of the body by a machine and only takes a few minutes, although the planning session takes longer. It is usually given as a course of several treatments over days or weeks. Each time you are given radiotherapy you receive a ‘fraction’ of the full dose prescribed.

There is also internal radiotherapy (also referred to as contact radiotherapy), which may be offered to you with or without external beam radiotherapy. It can be advised if there are concerns that cancer cells have been left behind following an endoscopic excision. It is usually given in one or two sessions.

Radiotherapy may be given alongside chemotherapy, which is the use of ‘anti-cancer’ (also known as cytotoxic) drugs to destroy cancer cells in the body. The aim of the chemotherapy treatment is to destroy any microscopic cancer cells that may remain after the cancer is removed by surgery and reduce the possibility of the cancer returning. Chemotherapy drugs can be given in several different ways: oral chemotherapy: chemotherapy drugs available as capsules to be taken at home every day or as intravenous (IV) infusion: when the treatment is given directly into a vein.

There is less evidence about the role that these treatments can play in the role of polyp cancers than the surgical and endoscopic techniques mentioned.

**Watch and wait (surveillance)**

If you chose not to have treatment but instead to monitor the situation which is often referred to as ‘watch and wait’, you will be asked to enter into a surveillance programme. This involves having more regular planned endoscopic assessment by colonoscopy and also may require you to have investigations such as CT and /or MRI to check on the growth of the polyp and monitor any changes over time. If in this situation the polyp becomes larger or starts to cause you more problems, there is the option of major surgery, the nature of which depends on the site of the lesion in the bowel.

This option is usually not advisable if you have been found to have an early bowel cancer as if it is left as it is, it will continue to grow and subsequent treatment options may become more limited or their outcomes less successful.

**6. How do I decide between these treatment options?**

When the polyp is removed eventually the pathologist looks in detail and reports if there is cancer in the polyp. The pathologist reports if the margins are clear of cancer (the margins are the edges of the cut to remove the polyp). He / she will also report other features such as whether the cancer has invaded the lymphatic tracts or blood vessels (**lymphatic** or **vascular** invasion) and the **depth** of the cancer in the bowel wall. This is called the pathological staging. All these factors are taken into account to calculate if further treatment is indicated. For example, if there is still cancer at the base of the scar on the bowel, further excision and treatment would be needed.

**Treatment for bowel cancer is decided by:**

• where the cancer is in your bowel

• how big the tumour is

• the number, size and position of any tumours outside the bowel (including lymph nodes)

• the type of cancer cells – their cell type and genetic make-up

• your general health and fitness

• your wishes as the patient.

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It will also be determined by:

• the local and national guidelines for best practice in treating bowel cancer

• the availability of different treatment options within your local hospital

• the access to clinical trials available within your local hospital

• how well you respond to the treatment

• the impact of any side-effects you may experience as a result of treatment.

Lymphatic or vascular invasion give an indication of the risk of the lymph nodes being involved. For instance, it may be that the results suggest that there is a 20% risk of having lymph nodes involved…what’s the risk of local recurrence. Of course that also means that 80% of people will have no tumour in the lymph nodes and an operation could be avoided if this was known for sure. The dilemma is that the only way of being completely sure is by an operation to remove part of the bowel and the surrounding lymph nodes.

So in this case you should discuss what benefit you may gain from surgery and consider these against the surgical side-effects which can occur. A sensible balance of the risks involved against the possible benefits achieved from each treatment on offer, may have to be calculated in these sorts of situations. By answering the following, you may feel clearer of what is important to you. Firstly write down what you consider your treatment options to address (or treat) your health issue are?

Option 1 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Option 2\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Option 3 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

For each of these options consider asking the following questions:

• What are the chances each option will help my problem?

• What are the side effects (harms) of each option?

• What are the chances of these side effects (harms)?

After discussing your options, you still may not be ready to make a decision. This is perfectly okay. Tell your doctor that you need more time. If you would like more information about your options, please ask. Consider talking to your specialist nurse, family and friends before making a decision. Also, remember you can ask to see another health care provider for a second opinion. Ask questions, be informed and make the decision that is best for you!

**7.   If I do have treatment, what will the follow up be?**

Following the treatment for a polyp cancer or a significant polyp it is likely that you will be offered some form of follow up surveillance. The aim of follow up after treatment is to carefully monitor the area of the bowel where the polyp or polyp cancer was removed. This is to check whether there are further cells growing in the area where the previous polyp or polyp cancer was removed, or any other polyps elsewhere in the large bowel.

Typically, a follow-up exam may be performed three to six months after your procedure to be sure the lesion was removed completely and is not growing back. Depending on what is found, your doctor will decide when further examinations are necessary.

The procedure will likely include a visual inspection with the use of an endoscope. Your doctor may mark the area of the removed lesion with ink (tattoo) so that when a repeat endoscopy/colonoscopy is performed, he or she can be sure the lesion was removed completely.

In a small proportion of cases depending on the type or size of the initial lesion there may be an area of recurrence of the polyp or abnormal area which can then often be treated the same way as the initial procedure. In a small proportion of patients further surgery may be required if it is thought that the lesion is not amenable to endoscopic resection

The type of follow up tests you may be offered varies from hospital to hospital, as there is currently no firm national evidence to guide what is the best follow-up schedule. Your local hospital team will follow local guidelines to ensure that you continue to be monitored in the most appropriate way. The type of follow up will also vary depending on the staging and particular features of your polyp or polyp cancer.

Your follow up may consist of:

* Regular colonoscopy/flexible sigmoidoscopy – to look inside the bowel
* CT scan – to examine if there are any enlarged lymph nodes
* MRI scan – this may only be recommended if your polyp cancer was found in your rectum

**8.  Where can I get further help and support?**

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Contact your healthcare professionals in the first instance if you have any concerns.

You may also like to contact a charity that can help you further such as Beating Bowel Cancer or Macmillan Cancer to talk to a nurse advisor, or request further information about any aspect of your disease.

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| **Nurse advisors at Beating Bowel Cancer** |  |

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| **Other patient services:****Macmillan Cancer** |  |

You can order printed booklets and factsheets either [online](https://www.beatingbowelcancer.org/patient-booklets-factsheets-0) or by calling: **020 8973 0000**

There is also have an online forum for bowel cancer patients and their families, where you can find support at any hour of the day:

 [www.beatingbowelcancer.org/forum](http://www.beatingbowelcancer.org/forum).

*This leaflet was written by the ‘Significant polyps and early colorectal cancer’ (SPECC) national development programme which has been organised and funded by The Pelican Cancer, Foundation,* [www.pelicancancer](http://www.pelicancancer)*.org*

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*St Mark's Hospital*

*Beating Bowel Cancer*

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