



**The Leeds  
Teaching Hospitals**  
NHS Trust

Endoscopy Unit

# Endoscopic Submucosal Dissection (ESD) of the bowel

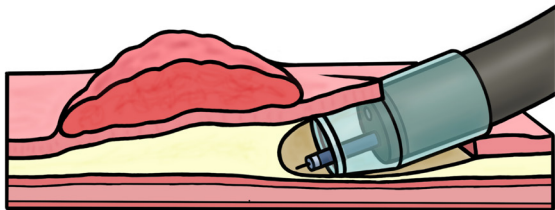
Information for  
patients

Your doctor has recommended that you have an **Endoscopic Submucosal Dissection (ESD)** of your bowel. This leaflet will explain the procedure and what to expect on the day of your procedure. If you have further questions, please telephone the department or discuss them with a member of staff on the day of your procedure.

## **What is an Endoscopic Submucosal Dissection (ESD)?**

ESD is a procedure where a lesion or polyp is removed from your bowel.

The procedure will be carried out using a colonoscope (flexible camera) that is passed around the bowel to access the area of irregularity. When the lesion or polyp has been located, it is raised by injecting fluid into the tissue underneath. The injection lifts the lesion or polyp away from the bowel wall muscle layers, making it easier and safer to remove the lesion. The lesion is then removed using diathermy (heat treatment), which allows the lesion along with some of the tissue underneath to be cut and removed. You will not feel this.



## Why am I having an ESD?

Your previous endoscopy or test has found a lesion or polyp in your bowel. In most cases, the biopsies (small samples of tissue) have indicated the lesion or polyp requires removal as a single fragment. Removing the lesion in one piece gives the pathologists (the doctors who examine the tissue under the microscope) the greatest opportunity to know if it has been fully removed.

All tissue samples have to be sent away to the laboratory so the results will not be available straightaway. You will be able to discuss the results of your ESD with the doctor who referred you.

## What are the benefits of having an ESD of the bowel?

Polyps in the colon carry a risk of turning cancerous. This may take several years to happen but some larger polyps can already contain early cancerous cells.

The main benefit of this procedure is that the lesion can be completely removed without the need for a major operation. In the majority of cases, the ESD is performed as a day case procedure, which means that you are discharged after a few hours of observation. Time taken to recover and discomfort after the procedure is far less when compared with surgery.

## What are the alternatives to having an ESD of the bowel?

Alternative treatments may have already been discussed with you. One alternative is to remove the lesion or polyp using a similar technique known as endoscopic mucosal resection (EMR); however, during EMR there is less chance of removing the lesion or polyp in one piece and also not removing enough of the normal tissue underneath. This makes analysis under the microscope very difficult and introduces uncertainty as to whether the lesion or polyp has been completely removed.

Other options include “keyhole” or “open” surgery which means an operation. This is generally associated with a longer recovery and may carry greater risks.

For lesions or polyps in the rectum (the bottom 15 cm of the bowel), surgeons can perform Transanal Endoscopic Microsurgery (TEMs). This involves a general anaesthetic to remove the lesion or polyp.

Alternatively, you may opt not to have the lesion or polyp removed and instead keep it under close review; however, this decision must be carefully considered after discussion with your consultant.

## What are the risks of having an ESD of the bowel?

The most common side-effect following an ESD is some abdominal discomfort. Less commonly, you can experience rare reactions to the drugs used for sedation or anaesthesia.

There are known adverse effects from the intravenous drugs administered during the procedure, ranging from mild and common to rare and serious. These include: headaches, nausea, fainting, depression of respiratory and nervous system, which may result in aspiration pneumonia, anaphylaxis and coma. Although these serious complications are rare, they are more common in patients with deeper sedation and / or general anaesthesia.

Two more serious risks are bleeding during, or after the ESD and perforation (making a hole) of the bowel wall. This usually occurs during the procedure and is dependant on the size, and location of the lesion or polyp being removed.

**Bleeding:** This is usually minimal unless you take medication to stop blood clots from forming. Examples of such medications include: Aspirin, Clopidogrel (Plavix), Dabigatran, Edoxaban, Ticagrelor, Dipyridamole (Persantin), Warfarin, Heparin, Rivaroxaban (Xarelto), or Apixaban (Eliquis). In most cases, bleeding following an ESD will settle on its own without the need for intervention. If the bleeding does not stop, it can be managed by delivering therapy through the colonoscope (flexible camera) without resorting to an emergency operation. If there was bleeding, you may be advised to stay in hospital for an extra few days to make sure the bleeding does not restart. Late bleeding can happen for up to 2 weeks after the procedure, see the end of this leaflet for how to recognise late bleeding following your ESD and what to do.

**Perforation:** Perforation (making a hole) during an ESD can happen but the risk is small. Perforations are usually evident immediately during the procedure but can present up to 2 weeks after the procedure. If your bowel wall is perforated this can be managed in two ways:

1. It may be possible to close the perforation completely using endoscopic clips, in which case, the recovery is usually very quick and you may be able to go home on the same day. If a longer period of observation is required, you will be managed in hospital with intravenous fluids and antibiotics.
2. Very rarely, an emergency operation may be required to surgically repair the site of perforation if endoscopic closure is not possible.

A recognised late complication is stricturing (narrowing) of the bowel after ESD. This usually begins to develop 2 or more weeks after the procedure. Signs may include difficulty passing stools or constipation. Please contact your consultant or the Endoscopy Unit if you develop these symptoms. If you have developed a stricture, this can usually be widened endoscopically (via our flexible camera) as an outpatient without being readmitted to hospital.

## **What preparation will I need?**

For the endoscopists to see the bowel wall clearly, it is essential that the bowel is completely empty. The doctor requesting the test will have considered if it is safe for you to have the bowel preparation. The bowel preparation that has been sent to you works as a powerful laxative to clean your bowel.

Your bowel preparation medicine and instruction sheet will be sent to you. **Please follow the instruction sheet carefully.** It is very important that this preparation works, failure to follow these instructions may result in an **unsuccessful** procedure. Please contact the nursing team if you are experiencing any problems taking your bowel preparations.

## Do I keep taking my tablets?

You must keep taking any essential tablets unless your doctor tells you specifically not to.

If you are diabetic, this should have already be highlighted by your referring doctor and you should receive additional information in the post of what to do with your medication, and the steps you need to take to prevent hypoglycaemia (low blood sugar).

- If you are taking iron tablets (ferrous sulphate), please stop them **5 days** before your test.
- If you are taking Codeine, Loperamide (immodium) or Co-Phenotrop (Lomotil), please stop this **3 days** before your procedure.
- Women taking the oral contraceptive pill should be aware that taking bowel preparation might prevent the absorption of the pill. Additional contraceptive precautions should be taken until the next menstrual period begins.
- Please telephone the Endoscopy Unit if you have **sleep apnoea** or are taking **tablets that prevent blood clots**. Examples include: Aspirin, Clopidogrel (Plavix), Ticagrelor, Dipyridamole (Persantin), Dabigatran, Edoxaban, Warfarin, Heparin, Rivaroxaban (Xarelto), or Apixaban (Eliquis).

Please continue to take all your other medication as normal.

## What should I bring on the day?

You may wish to bring your dressing gown and slippers. You will be asked to change into a hospital gown that is open at the back, before your test.

Please bring a list of medications that you take and also any medication that you may require, whilst in the department such as GTN spray, inhalers and / or insulin.

Please **do not** bring valuables to the department or wear lots of jewellery. Please also ensure that you **remove nail varnish** as this interferes with the signal received from equipment we use to measure your oxygen levels. If you are staying in hospital, please bring an overnight bag and any medications that you take with you.

## What pain relief is available?

It is important that you are comfortable during the procedure to ensure that the endoscopist can perform the procedure successfully.

For ESD, you have two main choices of pain control:

1. **Sedation and a pain relief drug:** this will be given via a needle that is inserted into your arm. The sedation will make you feel relaxed and possibly a little drowsy, but you will not be unconscious. You will hear what is said to you and will be able to carry out simple instructions given during the test.



Sedation can make you forgetful. Afterwards, you may not remember all of the test. Sedation remains in your system for 24 hours. **You will need someone to take you home (not via public transport) and someone who can stay and look after you for 24 hours.** Sedation will **not** be given if the above has not been arranged before the test.

Also, for 24 hours after the test, you should not:

- be left at home alone or look after children;
- drive (you will not be covered by your insurance policy);
- return to work;
- use any type of machinery;
- drink alcohol; and
- sign important documents.

If you are unable to make suitable arrangements, please contact the Endoscopy Unit for advice as we may need to arrange a hospital bed for the night.

**2. Entonox:** is the gas and air mixture commonly used by women during childbirth - it can help with the discomfort during your ESD.

The gas is administered by a special mouthpiece which you will hold yourself during the procedure. The Entonox gas works within 30 seconds and you may feel slightly lightheaded and sleepy. You control the amount of gas that you have yourself by simply removing the mouthpiece. The nurse looking after you will monitor you closely throughout the procedure and make sure you are using the gas successfully.

Entonox has some rare side-effects, these are mild nausea, dizziness and a dry mouth. As the effects of Entonox wear off quickly so do the side-effects.

One of the benefits of Entonox is that you can drive or use public transport and are free to do what you want following the procedure, provided you feel well. You will not need anyone to look after you.

Entonox is not suitable for everyone (particularly if you have COPD or a collapsed lung). Please discuss your options with the nurse and / or the endoscopist before your test.

**Occasionally, the procedure is carried out under a general anaesthetic; however, this will have been decided well in advance of the procedure and you will have specific preparation for this.**

## **What will happen on the day of the test?**

When you arrive at reception in the Endoscopy Unit, your personal details will be checked. The assessment nurse will collect you and take your medical history, discuss and explain the procedure, and take your blood pressure and pulse. You will be asked for your consent form (supplied with this leaflet). This will be attached to your notes and taken to the procedure room. Please make sure that you have read this through before you come for your procedure as when you sign your consent form you are agreeing that this is the procedure you want. **Remember, you can change your mind about having this procedure at any time. The endoscopist will discuss the consent form with you.**

You will be asked to change into a gown in the changing rooms and will also be provided with disposable underwear. Please bring all your belongings with you into the procedure room.

The doctor who will be performing your ESD will meet you before the procedure. You will be able to ask any questions and discuss any worries you may have.

**Please note:** every effort will be made to see you at your appointment time; however, due to hospital inpatient emergencies, delays may occur. The endoscopy staff will keep you informed of any delays.

## What happens in the procedure room?

You will be greeted by two nurses who will remain with you during the procedure. The team in the room will complete a checklist to ensure all your information is correct. If you are having sedation, a cannula will be placed in your vein. You will be given oxygen through a small plastic tube in your nose. If you are having Entonox, you will be shown how to use the mouthpiece that delivers the gas.

You will then be asked to lie on a trolley on your left-hand side with your knees slightly bent towards your chest. Your pulse and oxygen levels will be monitored by a probe placed on your finger during the test.

The endoscopist will initially examine your back passage with a finger to make sure it is safe to pass the camera and then introduce the endoscope (camera) into your back passage, and guide it around your bowel.

During the procedure, the endoscopist introduces air into the bowel. You may experience bloating from the air and cramp like pain as the camera goes around bends of the bowel.

Air can be relieved by passing wind (this is normal and you must not be embarrassed as the endoscopist will expect you to do this). If you are finding the procedure more uncomfortable than you would like, please let the nurse know and you may be given more sedation or a painkiller. If you are using Entonox and you feel that this is not giving you adequate pain relief, sedation can be administered as long as you have someone with you to take you home and to look after you when you get home.

You may also be asked to change position during your procedure e.g. roll onto your back to make the procedure easier and more comfortable. If the procedure continues to be uncomfortable, a decision may be made to end the test.

**Please note:** all hospitals in the trust are teaching hospitals and it may be that an endoscopist training to do ESD performs your procedure under the direct supervision of a consultant. Student nurses, doctors or medical representatives involved with the equipment used during the procedure may also be present during your procedure to observe the test. If you do not wish them to be present, please inform the endoscopist.

## What happens after the test?

You will be transferred to the recovery room after the test. The length of your stay in recovery will be dependent on the pain relief method you have chosen. The nurse in the recovery room will monitor you during your recovery, prepare you for discharge and give you after-care instructions. This can take 2 - 3 hours. You will be allowed home when the nurse and doctor are happy that you are ready to be discharged.

If you are staying in hospital after your ESD, you will be transferred to the ward when you have recovered.

Most patients feel some abdominal discomfort for a few days following the procedure, this should resolve on its own as you pass wind. The Endoscopy Unit will provide you with information about the best way to manage this. You will be able to restart most of your normal medications immediately following the procedure. If you are taking blood thinning medications, the endoscopist will decide when it should be safe to restart this medication.

## Will I need to stay in hospital after my ESD?

The procedure is usually undertaken as a day case but sometimes, the doctor will make the decision that you need to stay in hospital after your ESD for further observation.

You will normally be informed about this in advance when you undergo pre-assessment.

In rare cases, the complexity of the procedure may necessitate that you need to stay in hospital for a night for further observation but we will not know this until after the procedure is complete.

Your appointment letter will inform you if you have to stay in hospital. If you do, you should arrange for someone to collect you from the ward the following day.

## **When will I get my results?**

You will receive a copy of the endoscopy report before discharge and this will also be sent to your consultant and GP.

The removed lesion will be looked at under the microscope and the result of this will normally be available 2 - 4 weeks following the procedure. You will be contacted with these results, either by a letter, or you may be asked to attend a clinic. All enquiries regarding your outpatient appointment should be directed to your consultant's secretary. If you feel that you are waiting a long time for an appointment to discuss your results, your GP will also have a report so you can see them too.

## **What should I do if I become unwell after the procedure?**

Bleeding or perforations can occasionally present several days after the procedure has taken place. If you experience severe pain in the abdomen, not relieved by passing wind, nausea, vomiting or passing fresh or altered blood via your back passage following your procedure, you should go to your nearest Emergency department and bring the copy of your endoscopy report with you so the doctors know what procedure you have had.

This leaflet has been designed as a general guide to your test. If after reading this you have any questions that you feel have not been answered, please contact the Endoscopy department on the numbers below.

**Administration Team:** for any enquiry about your appointment including cancellation. Also, contact this number if you require an interpreter or transport.

Telephone: **0113 3920692**

**Monday - Friday, 9.00 am - 4.00 pm**

**Nursing Team:** please contact this number if you would like advice on your medication or any other medical question or worry.

Telephone: **0113 3922585**

**Monday - Friday, 9.00 am - 4.00 pm**



## What did you think of your care?

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Developed by: Kaleigh Hynes, Nurse Endoscopist

Reviewed by: Danielle Ibinson, Endoscopy Pre-assessment Sister  
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