Advanced Endoscopic Resection of Polyps in the Large Bowel with Enhanced CitraFleet

This leaflet has three sections: The first section explains the procedure and techniques for endoscopic removal of polyps in the large bowel, including the benefits, risks and any alternatives. The second section explains how to prepare for the procedure and what to expect when you come to hospital and the third section outlines when to stop eating and how to cleanse your bowel. It is important to read all sections to ensure that you are fully prepared for the procedure. If you have any further questions, please speak to a doctor or nurse caring for you.

Section One

Introduction

This leaflet aims to help you understand more about the techniques used to remove large polyps, areas of abnormality or early cancer involving the lining of the gut.

The two main techniques are known as Endoscopic Mucosal Resection (EMR) and Endoscopic Submucosal Dissection (ESD).

We hope the information presented here will answer some of the questions that you or those who care for you may have. This leaflet is not meant to replace the consultation between you and your medical team but aims to help you understand more about what is discussed.

What is a polyp?

A polyp is a growth that can develop on the lining of the bowel. If left to grow, polyps can sometimes turn cancerous. By removing polyps your risk of developing bowel cancer is greatly reduced.

What are EMR and ESD?

EMR and ESD are two different techniques for removal of polyps or early cancers from the lining of the intestinal wall through a colonoscope (a thin flexible tube with a camera on the end), thereby avoiding the need for surgery. These procedures are primarily used for treatment (by removing polyps) but can also be used for diagnosis by removing and retrieving tissue that can be analysed.

If an early cancer is thought to be present within a polyp, ESD can help to determine if the cancer involves deeper layers of the digestive tract, which can then help guide treatment decisions.

What do EMR and ESD involve?

In both techniques, a colonoscope is passed into the bowel to find the polyp seen during your previous test. You may feel discomfort as if you want to go to the toilet and short-lasting cramps

can occur. A small amount of fluid is injected under the polyp to lift it away from muscle beneath it, thus creating a safe field to remove it. You will not feel the polyp being removed.

In EMR – a wire loop is passed down the endoscope and placed over the polyp. A small amount of electrical current (diathermy) will be passed through the wire loop to cut the polyp while cauterising (sealing) its blood supply. If the polyp is large, these steps may need to be repeated until the polyp is completely removed.

In ESD - special equipment is used to cut around and underneath the polyp or area of concern. It allows for the removal of the abnormal tissue in one piece.

The advantage of ESD over EMR is that it removes deeper layers of tissue which can provide a greater degree of confidence that cancer cells (if present) have been fully removed. However, the ESD procedure usually takes longer to perform than an EMR and has a higher rate of complications.

It is necessary for sedation to be used in this procedure. Please read the important instructions in Section 2 about the arrangements you will need to make following the procedure.

What to expect during your EMR / ESD

The EMR or ESD procedure usually takes longer than a standard colonoscopy. In some cases, it may last for 2 or 3 hours, although the exact duration will depend on multiple factors, including the size and location of the polyp being treated. To help you feel relaxed and comfortable, you will typically be offered conscious sedation at the start of the procedure, which involves injection of a painkiller and a sedative. This helps reduce discomfort and anxiety and may make you feel drowsy but does not put you to sleep. In some cases, deep sedation (using propofol) may be used, depending on the complexity of the procedure and your specific needs. Please allow up to four hours in the hospital for the whole process to be completed. Please allow up to four hours in the hospital for the whole process to be completed.

What are the risks of EMR and ESD?

The risks of EMR and ESD are smaller than the risks of surgery. Although uncommon, the main risks are:

- **Perforation** – This means making a hole through the wall of the digestive tract. With EMR, this can occur about once in every 100 patients and, with ESD, this can occur about once in every 50 patients. Sometimes perforations can be treated at the time of the endoscopy usually combined with a short course of antibiotics, but occasionally an emergency operation is required.
- **Bleeding** – Minor bleeding is seen commonly during and rarely after, EMR or ESD procedures and is most often able to be identified and treated at the time of endoscopy. Bleeding can occur up to 14 days after the procedure and usually settles on its own. About once in every 100 patients, bleeding is more significant and may require a blood transfusion or a further endoscopy to assess and treat the site of bleeding. Very rarely, an emergency operation may be required to stop it.

- **Incomplete polyp removal** – Sometimes, it is not possible for the endoscopist to remove the entire polyp for technical reasons. If this happens, further endoscopic resection or an operation might be planned later.
- **Narrowing of the large intestine** - Removing large rectal lesions can lead to scarring that narrows the large bowel. It may lead to difficulty in opening the bowels and may require further treatment. This is a very rare complication and is usually amenable to medicine to soften the stool or stretching of the area if required through the endoscope (colorectal dilatation).

What happens if the endoscopist does not think that EMR / ESD is possible?

Even if you have been scheduled for an EMR or ESD procedure, the endoscopist may (after careful assessment of the polyp) determine that it is not safe or possible, to proceed with the polyp removal. If this is the case, the doctor will discuss whether you need to have an operation or an alternative procedure to remove the polyp or abnormal area.

Are there other options?

Yes. There are two other options:

1. Do nothing – leave the polyp or abnormal lesion alone. However, the risk is that larger polyps are at greater risk of turning cancerous if they are left to grow.

2. Remove the polyp or abnormal area by having a surgical operation to remove the section of bowel in which the polyp is located. This carries the risk of general anaesthetic and wound infection and will leave a scar on the abdomen. Sometimes surgery can require the formation of a stoma (which results in a bag on your abdomen), although this may only be temporary. If you are considering an operation, further details will be provided by the surgeon undertaking it, who will discuss the risks and benefits in greater detail with you.

Section Two:

EMR / ESD with CitraFleet

This section explains how to prepare for this procedure, including what medications you may need to stop, when to stop eating and what to expect when you come to hospital.

These procedures are undertaken in the Endoscopy Unit at St George's Hospital. You will be contacted by one of our nursing team before your procedure, to record your health history and to advise on any changes to your medication.

Important information about your procedure

- St George's is a University Hospital and a National Training Centre for endoscopy, providing specialist training for qualified doctors and nurses developing skills in endoscopy. As part of this training, supervised specialist trainees may be involved in your care. If you would prefer trainees not to be present, please inform the doctor or nurse when you are admitted.
- We recommend that you have sedation for this procedure so please arrange for a friend or relative (18+) to escort you home after your appointment and to stay with your overnight. Please bring an overnight bag with you in case you require admission to the hospital following your procedure. We kindly ask escorts not to wait in the Endoscopy Unit due to limited space, but we will call when the procedure is completed.
- **Three days before** your appointment, **start a low fibre diet** (see page 8).
- **STOP EATING 24 HOURS before your appointment**, clear fluids are allowed (**no milk**).
- **Take the bowel preparation** as per the instructions from page 9.
- **STOP DRINKING CLEAR FLUIDS TWO HOURS** before your appointment.
- We recommend you bring a book or magazine with you to read whilst you are waiting as the mobile phone signal is weak.
- You are advised **not to fly for 2 weeks** after your procedure.

Important information about medication

- If you are taking medications for **diabetes** or to **prevent blood clots** such as Warfarin, Apixaban, Edoxaban, Rivaroxaban, Dabigatran, Clopidogrel, Ticagrelor or Prasugrel, please follow the instructions provided by the nurse. If you have not been contacted, please **contact us** on the telephone numbers on page 7.
- Seven days before the procedure, stop taking iron tablets.
- Four days before the procedure, stop taking constipating medicines such as Imodium (Loperamide), Lomotil, or Codeine phosphate, or stool bulking laxatives such as Fybogel.
- If you are taking codeine-based medicines, please consult your GP to discuss if any alternatives are available.
- If you take **GLP-1 and/or GLP-3 and/or GIP blocker medication** such as Mounjaro, Wegovy, Ozempic, **please inform us**..
- Take all other medications as usual but do not take oral medications one hour before or one hour after taking the bowel preparation.

Important information about medication continued

- If you are taking the contraceptive pill, please take additional precautions for one week following the bowel preparation.
- Please bring a list of your regular medications and bring any inhalers or sprays with you.
- If you a diabetic, please bring your medication and a snack to eat after the procedure.

Asking for your consent

It is important that you feel involved in decisions about your care. The doctor performing the procedure will explain the procedure to you, to make sure you understand the benefits and possible risks as detailed in this leaflet, before signing the consent form. You can withdraw your consent at any time, even if you have said 'yes' previously.

On arrival at the endoscopy unit

- A nurse will check your details, including health history, medications and allergies.
- You will have the opportunity to ask any final questions with the endoscopist before the procedure and you will be asked to sign a Consent Form.
- You will be asked to change into a gown and privacy shorts.
- An intravenous cannula will be inserted and secured before the start of the procedure.

What happens after your procedure?

You will be able to rest in the recovery room until the immediate effects of the sedation have worn off, approximately one hour. Most patients can go home the same day, provided they are feeling well, are accompanied home by a family member or friend and have a responsible adult staying with them for that day and overnight. A nurse will give you a copy of the endoscopy report as well as a discharge information leaflet with important advice. A normal diet can usually be resumed once the procedure is complete.

Sometimes, for example if the polyp was very large, or your procedure was prolonged, or if you live a long way away from the hospital, the consultant might advise that you stay in hospital overnight as a precaution. Please be aware that you will be required to be admitted to the hospital overnight after your procedure if you are not able to be accompanied home. You MUST make us aware if this is likely to be the case well in advance of your procedure, so that the necessary arrangements can be made. If you had sedation, you must arrange for somebody to accompany you home. The medication given during the test will prohibit you from driving for 24 hours after the examination. Please do not plan to take public transport home unless accompanied. If you are unable to arrange transportation, we can arrange a taxi, however you are responsible for the fare. You will need a responsible adult at home for at least 12 hours and preferably overnight.

Will I get the results / Will I have a follow-up appointment?

We will give you a copy of the endoscopy report and discuss the findings with you before you are discharged. Any polyp tissue which is removed, or any biopsies that are taken, will be sent to the pathology department for analysis. It usually takes from one to three weeks, but can sometimes take up to six weeks, for the tissue to be analysed and reported. If further action is required based on the analysis of the tissue samples, we will send you an updated endoscopy report with the follow-up plan documented at the end of the report. In most cases, this will involve a follow-up

procedure to assess the area where the polyp was removed; however, in some cases, we may arrange an outpatient appointment to discuss your results further. An appointment will be sent out to you accordingly, but if you do not receive this within the expected timeframe, please contact the Endoscopy Unit on the phone number on page 7.

What should I look out for after the procedure?

Minor side effects: It is normal to notice small amounts of bleeding in your poo, or mild abdominal (tummy) discomfort, for up to two weeks after the procedure. These symptoms should usually settle within a few days, as should the consistency of your bowel motions.

When to seek urgent medical attention:
For up to two weeks following your procedure, if you develop any of the symptoms listed below, please seek medical advice **immediately** by EITHER contacting the St George's Endoscopy Unit, Monday to Friday between 9am and 5pm on 0208 725 1491/2310, OR outside of working hours by attending your nearest Emergency Department. Please ensure you **take a copy of your endoscopy report with you.** Additional information will be provided about procedural aftercare on the day of your appointment.

IMPORTANT: These telephone lines are for emergencies only and the staff will not be able to assist you with queries about your procedure, results or appointments.

The symptoms to look out for include:

- Fever (>38°C) / Chills / Rigors
- Large amounts of blood or clots in your poo
- Severe, persistent or worsening abdominal pain
- Difficulty breathing / shortness of breath
- Persistent nausea or vomiting
- Fainting / Collapse

When can I get back to my normal routine?

You should be able to return to work and all your usual activities within 24 to 48 hours. If multiple or large polyps are removed, you may be advised to avoid strenuous exercise for up to one week. Please be advised you cannot drive, sign legal documents, or drink alcohol for 24 hours following sedation.

Where do I go?

Please attend the Endoscopy Unit, St George's Hospital, First floor, St James' Wing, Blackshaw Road, London, SW17 0QT.

Is there parking at the hospital?

At St George's Hospital, the car park entrance is located on Blackshaw Road. Please ensure you check the rates before parking.

Contact us

If you have any questions or concerns about your procedure, you can call the Endoscopy department on **020 8725 1913** Monday to Friday 8.30am to 3pm.

Please note that our phone lines are very busy, as we manage over 300 patient bookings each week. As a result, it may take up to 40 minutes for us to answer your call.

Useful sources of information:

Go to: www.nhs.uk/conditions/colonoscopy for further information about the procedure.

For more information leaflets on conditions, procedures, treatments and services offered at our hospitals, please visit www.stgeorges.nhs.uk

Please read Section 3 below, How to prepare for the procedure.

Section Three:

HOW TO PREPARE FOR THE PROCEDURE

It is important to reduce the amount of fibre you eat **before starting the bowel preparation.** This means avoiding cereals, wholemeal bread, salads, fruits or any food containing nuts or seeds.

THREE DAYS BEFORE THE PROCEDURE,START A LOW FIBRE DIET

This table shows what foods you can eat and what you need to avoid before you start taking the bowel preparation. You must STOP EATING 24 hours before the procedure.

FOOD AND DRINK ALLOWED (Up to 24 hours before appointment ONLY)	FOOD AND DRINK TO AVOID
✓ Lean beef, lamb, ham, veal, pork, chicken, bacon, plain meat pies	x Burgers, sausages, casseroles
✓ Fresh, tinned, smoked seafood (no bones, shell), fish with white breadcrumbs/batter	x Pies, pasties containing vegetables
✓ White rice, couscous, noodles, white pasta	x All peas, beans, pulses e.g. kidney, baked, lentils, hummus
✓ Peeled potatoes; boiled, baked or mashed	x Brown rice, brown pasta, quinoa, barley
✓ Well-cooked carrots/turnip/swede (no skin), cauliflower/broccoli florets (no stalks)	x Potato skins, chips, roasted potato
✓ Sieved tomato sauces (no skin or seeds), purée, tomato/brown/Worcestershire sauce	x Raw vegetables, salad, sweet corn, celery
✓ Plain gravy, cheese, sauce, plain mustard	x Fruit (fresh, dried, or tinned with pips)
✓ Eggs, soya, Quorn, tofu	x Packet soups or tinned soup with vegetables
✓ Clear or strained soups	x High fibre, wholemeal/multigrain breads
✓ Stewed/tinned fruit (no skin/seeds/pith/pips)	x Wholemeal cereals, cereals with nuts, seeds, or dried fruit
✓ Cornflakes, Rice Krispies, Cornflakes etc.	x Muesli, fruit and fibre, shredded wheat, bran flakes, porridge
✓ White bread, plain naan, chapatti, poppadum	x All nuts and seeds
✓ Rich Tea or other plain biscuits, crackers	x Yoghurt with whole fruit muesli, seeds
✓ Plain cakes, plain scones (no fruit or nuts)	x Digestives, Hob-nobs, oat cakes, flapjacks
✓ Butter, milk, cheese, dairy alternatives	x Wholegrain crackers, crackers with seeds
✓ Plain or fruit flavoured yoghurt (no bits)	x Cakes containing fruit, nuts, or coconut
✓ Jam, marmalade (no seeds, peel), marmite	x Jam or marmalade with skin/pips/seeds
✓ Jelly (green/yellow only), ice cream, custard	x Peanut butter
✓ Water, tea, coffee, fizzy drinks, clear fruit juice e.g. apple juice, Lucozade	x Cloudy juice, juice with bits, smoothies
	x Red or blackcurrant cordial/squash

Advice for diabetic patients

The bowel preparation can upset your diabetes temporarily. A nurse will contact you with advice on how to manage your diabetes whilst you are fasting. If you have not been contacted, please contact us on the telephone numbers on page 7 of this leaflet under **Contact us**, you may wish to speak to your diabetic nurse for advice.

FASTING AND CITRAFLEET INSTRUCTIONS

It is very important you follow the instructions on the following pages to ensure your bowel is clear of stool and to enable the procedure to be successful.

DO NOT EAT FOOD FOR 24 HOURS BEFORE THE PROCEDURE

Please check your appointment time to see when to stop eating. During the fasting period, please **DRINK CLEAR FLUIDS ONLY.** Stop drinking two hours before your appointment time.

Clear fluids include:

Water, fizzy drinks, Lucozade, squash (not red or blackcurrant), clear soups, Bovril or broth, black tea and coffee (no milk) and jelly (green and yellow only).

Please follow the instructions on the following page (rather than the manufacturer's leaflet) and according to your appointment time.

How to prepare CitraFleet

The enhanced CitraFleet preparation consists of 3 sachets taken as instructed. If you had difficulty clearing your bowel previously or have chronic constipation, **we recommend you take two Senna tablets (7.5mg) at night for 5 nights before starting CitraFleet.**

Mix the contents of each sachet with approximately 150ml of cold water and stir for two to three minutes before drinking, at the times listed overleaf. Do not worry if the solution becomes warm or hot – allow it to cool a little before drinking. Follow this with another full glass of water.

It is **important to drink 2 to 3 litres of clear fluid** during the preparation period which is required to flush your bowel of stool and to keep you hydrated. Drink at least one full glass (250mls) of water every hour from the time you stop eating the day before your procedure and then again after the third dose in the morning, until 2 hours before your appointment.

What to expect when taking bowel preparation

Everybody responds differently to bowel cleansing. We advise you to remain in easy reach of a toilet as it causes multiple, often urgent, watery bowel movements. It can start working in as little as 30 minutes but may take up to three to four hours to start working in some people depending on your age, diet, if you have diabetes and whether you suffer from constipation. **Your bowel motions on completion of the preparation should be a clear/yellowish watery consistency.**

The CitraFleet may make you feel nauseated or sick, have abdominal bloating or cramps. Drinking plenty of fluid and walking around can help prevent this. The effects of the bowel preparation may give you a sore bottom, so we suggest using a **barrier cream** as soon as you start drinking the CitraFleet and soft flushable wipes. If you are unable to tolerate the bowel preparation, vomit the contents, or if by the morning of the procedure you have had little or no result in the toilet, please **Contact us** on the phone numbers of page 7, as it may not be possible to perform the procedure.

ENHANCED CITRAFLEET - MORNING APPOINTMENTS

Take two Senna tablets (7.5mg) for 5 nights before starting the bowel preparation.

Suggested routine to follow the DAY BEFORE YOUR PROCEDURE	
Breakfast 7-8am	Eat a light breakfast but **avoid** high fibre foods, fruit and vegetables. This will be the last solid meal until after your procedure. (See p. 8)
8am **Stop eating Drink clear fluids**	**STOP EATING SOLID FOOD**. **Drink 2-3 litres of CLEAR FLUIDS ONLY** during the fasting period. See clear fluid examples on page 9.
12pm	Mix the **FIRST** sachet of CitraFleet in a glass of water until dissolved and drink it followed by a glass of water. Continue drinking clear fluids.
5 - 6pm	Mix the **SECOND** sachet of CitraFleet in a glass of water until dissolved and drink it followed by a glass of water. Continue drinking clear fluids.
Dinner **Clear fluids only**	You can have clear soups or broth such as Bovril or Oxo. Drink at least another litre of clear fluid before going to bed.
Suggested routine to follow the DAY OF YOUR PROCEDURE	
6am (or earlier if desired)	Mix the **THIRD** sachet of CitraFleet in a glass or water and drink it, even if you feel your bowel is empty. Drink a further 500ml of clear fluid up until 2 hours before your appointment.
2 hours before appointment	**STOP DRINKING FLUIDS**. Please don't worry about travelling to hospital after taking this dose as it clears the stool produced overnight only.

ENHANCED CITRAFLEET - AFTERNOON APPOINTMENTS

Suggested routine to follow the DAY BEFORE YOUR PROCEDURE	
Breakfast	Eat a light breakfast but **avoid** high fibre foods, fruit and vegetables. (See p.8)
Lunch 11am – 12pm	Eat a light lunch but **avoid** high fibre foods, fruit and vegetables. This will be the last solid meal until after your procedure.
12pm **Stop eating Drink clear fluids**	**STOP EATING SOLID FOOD**. **Drink 2-3 litres of CLEAR FLUIDS ONLY** during the fasting period. See clear fluid examples on page 9.
12.30pm	Mix the **FIRST** sachet of CitraFleet in a glass of water until dissolved and drink it followed by a glass of water. Continue drinking clear fluids.
5.30pm	Mix the **SECOND sachet** of CitraFleet in a glass of water until dissolved and drink it followed by a glass of water. Continue drinking clear fluids
Dinner **Clear fluids only**	You can have clear soups or broth such as Bovril or Oxo. Drink at least another litre of clear fluid before going to bed.
Suggested routine to follow the DAY OF YOUR PROCEDURE	
9am	Mix the **THIRD** sachet of CitraFleet in a glass or water and drink it, even if you feel your bowel is empty. Drink a further 500ml to 1 litre of clear fluid up until 2 hours before your appointment
2 hours before appointment	**STOP DRINKING FLUIDS**. Please don't worry about travelling to hospital after taking this dose as it clears the stool produced overnight only.

Additional services

Patient Advice and Liaison Service (PALS)

PALS can offer you advice and information when you have comments or concerns about our services or care. You can contact the PALS team on the advisory telephone line Monday, Tuesday, Thursday and Friday from 2pm to 5pm.

A Walk-in service is available:
Monday, Tuesday and Thursday between 10am and 4pm
Friday between 10am and 2pm.
Please contact PALS in advance to check if there are any changes to opening times.
The Walk-in and Advisory telephone services are closed on Wednesdays.
PALS is based within the hospital in the ground floor main corridor between Grosvenor and Lanesborough Wing.

Tel: 020 8725 2453 **Email:** pals@stgeorges.nhs.uk

NHS UK

The NHS provides online information and guidance on all aspects of health and healthcare, to help you make decisions about your health. **Web:** www.nhs.uk

NHS 111

You can call 111 when you need medical help fast but it's not a 999 emergency. NHS 111 is available 24 hours a day, 365 days a year. Calls are free from landlines and mobile phones.
Tel: 111

AccessAble

You can download accessibility guides for all our services by searching 'St George's Hospital' on the AccessAble website (www.accessable.co.uk).
The guides are designed to ensure everyone – including those with accessibility needs – can access our hospital and community sites with confidence.

Reference: ESC_AERc+_01 **Published:** September 2026 **Review date:** September 2028