

# Colonoscopy with Endoscopic Mucosal Resection (EMR) with Klean-Prep

## Information for patients

---

Your doctor has referred you for a colonoscopy with endoscopic mucosal resection (EMR).

### **What is a colonoscopy with EMR?**

EMR (endoscopic mucosal resection) is a procedure carried out using a flexible tube (colonoscope) to remove polyps (growths) within the bowel. The polyp is raised using an injection of fluid which lifts it away from the deeper muscle layers of the bowel. This makes it easier and safer for the polyp to be removed. A wire loop is then passed down the colonoscope and over the polyp. Diathermy (a low electrical current) is usually applied to cut through the polyp while heating and cutting the blood supply. Depending on the size of the polyp this process may need to be repeated a few times until all the tissue is removed. Metal clips are occasionally placed at the site to prevent complications. You should not feel the polyp being removed.

You will be asked to take bowel preparation. Klean-Prep is a laxative which is taken the day before your colonoscopy to clean the bowel so that the endoscopist can see the polyp clearly to ensure safe removal. Most patients will need sedation and intravenous painkiller for this procedure as it is longer than a routine colonoscopy and can be more uncomfortable. We advise that you have someone to pick you up from the unit, take you home and stay with you for the next 12 hours.

### **Why do I need to have a colonoscopy with EMR?**

A previous test (colonoscopy, sigmoidoscopy or CT scan) will have shown a polyp within your bowel. Polyps are benign growths which carry a risk of becoming a malignant cancer over a number of years. For this reason your doctor will have recommended that you have the polyp removed.

### **How long will I be in the Endoscopy Unit?**

You could be in the unit all morning or all afternoon depending on how busy it is so you may want to bring something to pass the time, such as a book or magazine.

Please do not bring any valuables (including jewellery) into the hospital.

### **What does the test involve?**

A nurse will look after you while you are in the Endoscopy Unit and you can ask questions at any time. You need to undress and put on a hospital gown. You can bring a dressing gown and slippers with you if you like. An extra gown will be provided if you don't bring your own. You should remove piercings and nail polish. The test will be done by a trained endoscopist, or a trainee supervised by a trained endoscopist.

Before we start the test we will check your breathing, heart rate, blood pressure and oxygen levels. You might be given oxygen to breathe through a mask or small tubes placed at your nose.

Some people feel anxious about the thought of having this test done. We can help with this by giving you an injection of a medication like valium (sedation). Its main purpose is to take away the feeling of anxiety. This is usually given in combination with an intravenous pain killer.

An alternative to the sedation and intravenous pain killer is Gas and Air (Entonox) which is a pain-relieving gas you inhale through a mouthpiece.

We strongly recommend undergoing EMR with the combination of sedation and a pain killer as the procedure takes longer than a routine colonoscopy and can be more uncomfortable.

If you opt for sedation, you **must** make arrangements for a responsible relative or friend to drive you home or accompany you on public transport and be with you for at least 12 hours after the procedure. We advise that you make these arrangements regardless as sedation might be needed to complete the procedure.

The endoscopist will puff some air into the bowel which may give you a bloated, windy feeling. When the colonoscope passes round a bend in your bowel you might feel some pain or discomfort for a short period of time. The colonoscope is passed gradually around the colon until the polyp is reached. We may assist you in changing your position to aid progress of the scope and to get better views of the polyp. The polyp is then removed as described earlier in this booklet. Once removed, the polyp will be sent to the laboratory for examination under a microscope. If the polyp is particularly large or if there are multiple polyps the scope may need to be passed through several times.

Photographs and/or a video recording might be taken for your records.

Sometimes medication is given to relax the bowel during the test. This medication is given through a cannula (a thin tube) in your hand or arm so you may still need an injection even if you are not having sedation.

## Consent

Before we can do the test we will ask you to sign a form giving us permission if you are happy for the test to be done.

Before you do this you need to understand why the test is being done and any potential risks. The following information will help with this but if you have any questions, please contact the nursing staff on the numbers provided on page 10 of this booklet.

## Benefits of the procedure

Polyps are removed to reduce your risk of developing colorectal cancer. The benefit of EMR is that the polyp can be entirely removed using the colonoscope and is usually done as a day case procedure.

The alternative treatments include an operation to remove the polyp surgically or not treating the polyp at all.

## Risks of the procedure

Colonoscopy with EMR is usually a safe test to have done but there are risks from the test that you need to know about before you decide to give us permission (consent). The endoscopists are trained in cutting down risks as much as possible, but we cannot remove risk completely. The risk of complications depends on the size and location of the polyp. The main risks are:

### Bleeding

You may notice bleeding up to 3 weeks after your procedure although this most commonly happens in the first 48 hours. The risk is about 1 in every 50 procedures (American Society for Gastrointestinal Endoscopy, 2015). Bleeding is usually minor and stops on its own but may need to be controlled by the endoscopist using heat, injection or clips. These are placed through the colonoscope. You may be asked to stay in the hospital for a few days to make sure the bleeding does not restart.

### Perforation

Perforation is a tear of the lining of the bowel. The risk varies depending on the size and location of the polyp, ranging from one in every 1000 procedures for small polyps in the distal (left) colon and one in every 200 for larger polyps in the proximal (right) colon (American Society for Gastrointestinal Endoscopy, 2015). It may be possible to repair this endoscopically (through the camera) by placing metal clips to close the tear. In this case you will need to stay in hospital for a few days and receive treatment with antibiotics and fluids given through a drip. In some cases an emergency operation is needed which requires a longer hospital stay. If this has not been discussed with you already it will be discussed during the consent process before starting the procedure

### Intravenous sedation

Sometimes sedation can cause problems with breathing, heart rate and blood pressure. If any of these problems do happen, they usually don't last long. A trained nurse will look after you during the test and will deal with any problems straight away.

Older people, people who have breathing difficulties or people who have problems with their heart may be checked by a doctor before having the test. It might be safer for these people to have less or no sedation, because the risk of problems from sedation might be higher for them.

### Gas and Air (Entonox)

This is very safe for most people but people with some medical conditions are advised not to use it. You should not use Gas and Air if you have:

- Had a recent ear infection or an operation on your ears
- Had recent eye surgery where injections of gas have been used
- Been scuba diving within 48 hours or have decompression sickness
- A collapsed lung (pneumothorax)
- Lung disease or breathing difficulties (unstable asthma, emphysema)
- A head injury (or suspected or known increased pressure on the brain)
- A known problem with air trapped in the body (e.g. in an artery)
- A severely bloated stomach
- Injuries to the face and jaw.

Some people find the side-effects of Gas and Air (dizziness or nausea) unpleasant but these feelings wear off very quickly if you have a short break from it.

### **Incomplete procedure, incomplete removal or unable to remove the polyp**

There is a small chance that we are unable to complete your procedure for various reasons. If your laxative hasn't worked well enough then the endoscopist may have to abandon the test. Some people have very sensitive bowels which makes the procedure painful.

Occasionally, the endoscopist will not be able to remove the polyp completely in one sitting or they may decide that it is not possible to remove it by EMR. If your test is not completed on the day of your appointment, the endoscopist will speak to you before discharge and let you know the next step. You may need to come back for further procedures or the polyp may need to be removed in a different way.

You can ask for more information at any time, so if you have questions please bring this information booklet along with the unsigned consent form and you can speak to a health care professional before signing the form.

There is a video of what will happen during your admission for colonoscopy on NHS Lothian's Vimeo page on the internet. You can access it from the following web address <https://vimeo.com/345862918>. The video was filmed in the Endoscopy Unit at the Western General Hospital but the information is useful no matter where your appointment is.

If you have read the information and you do not wish to go ahead with the test, please speak to your GP or hospital doctor as soon as possible.

Please let us know if you do not plan to come to your appointment. There is a waiting list for this test and we could give your appointment to someone else who is waiting.

## **Medicines**

Please bring your current medicines with you on the day of your test.

Some of the tests need you to stop taking medicines that thin your blood (anticoagulants/antiplatelets)

**Warfarin**

**Heparin**

**Clopidogrel**

**New anticoagulants (rivaroxaban, apixaban or dabigatran).**

If you are taking any of these medicines, you **must** contact the Endoscopy department phone number on page 10 of this booklet. A nurse will ask you a few questions and let you know if you should stop taking your medicines.

Please note: you do not need to stop taking Aspirin before your procedure. (British Society of Gastroenterology, 2016)

## **Other medicines**

Please stop taking:

- Iron tablets (7 days before your appointment)
- Water tablets (2 days before)
- Anti-inflammatory pain-killers (2 days before)
- Fibre supplements (2 days before)
- Anti-diarrhoea tablets (2 days before).

Keep taking all other medicines that are not mentioned above.

If you are taking the oral contraceptive pill, the bowel preparation may cause it not to work. Other contraceptive methods should be used during the bowel preparation and for a week following the procedure.

If you have any questions about your medicines please call the telephone number for the nurses shown on page 10.

## **Preparing/attending for your appointment**

### **Bowel preparation**

If you have problems with your heart or kidneys, please contact the nurses on the number on page 10 of this booklet before starting your bowel preparation.

### **2 days before your appointment**

Please follow the advice in the table below and continue to eat (but avoid high-fibre foods).

<b>You can eat and drink from the list below</b>
Cornflakes, Rice Crispies, Ricicles, Sugar Puffs, Coco Pops
White bread (with butter/margarine)
White pasta, white rice
Peeled potatoes
Chicken, turkey, fish, cheese and eggs
Puddings, pastries, cakes, etc: Milk puddings, mousse, jelly (not red), sponge cakes, Madeira cake, rich tea, wafer biscuits
Sugar, jelly, jam, marmalade, honey, syrup, lemon curd. Fruit Pastilles, Wine Gums, Jelly Babies
Clear or sieved soup
Tea and coffee All fizzy drinks All squashes Oxo, Marmite, Vegemite, Bovril Fruit or herbal tea Clear apple juice

## 1 day before your appointment

The day before your appointment, following a light breakfast, (no later than 10am) you should stop all solid food but keep drinking clear fluids from the list. Do not put milk in your tea or coffee.

You should stop taking clear fluids up to 4 hours before your appointment.

The laxatives are needed to clean your bowel so the endoscopist can have a clear view of the lining of the bowel. If the bowel is not clean then there is a higher chance that something can be missed. You **must** take the four doses of Klean-Prep you received. **Please follow the instructions below and not those in the Klean-Prep box. Each sachet is dissolved in a litre of water.**

The table below shows you when you should take the four doses:

	<b>First Dose</b> <b>The day before the procedure</b>	<b>Second Dose</b> <b>The day before the procedure</b>	<b>Third Dose</b> <b>The day before the procedure</b>	<b>Forth Dose</b> <b>The day before the procedure</b>
<b>Morning Test</b> (between 7am and 12midday)	Take <b>between 12midday and 1pm</b>  Take a glass every 15 to 30 minutes until the litre is finished	Take <b>between 2pm and 3pm</b>  Take a glass every 15 to 30 minutes until the litre is finished	Take <b>between 4pm and 5pm</b>  Take a glass every 15 to 30 minutes until the litre is finished	Take <b>between 6pm and 7pm</b>  Take a glass every 15 to 30 minutes until the litre is finished

	<b>First Dose</b> <b>The day before the procedure</b>	<b>Second Dose</b> <b>The day before the procedure</b>	<b>Third dose</b> <b>The day of the procedure</b>	<b>Forth dose</b> <b>The day of the procedure</b>
<b>Afternoon Test</b> (between 12midday and 5pm)	Take <b>between 4pm and 5pm</b>  Take a glass every 15 to 30 minutes until the litre is finished	Take <b>between 6pm and 7pm</b>  Take a glass every 15 to 30 minutes until the litre is finished	Take <b>between 6am and 7am</b>  Take a glass every 15 to 30 minutes until the litre is finished	Take <b>between 7am and 8am</b>  Take a glass every 15 to 30 minutes until the litre is finished

Klean-Prep is easier to drink if it is made up in advance and kept in the fridge.

Drink at least another litre of clear fluids from the list above so you do not feel thirsty or get dehydrated.

Keep within easy reach of a toilet as Klean-Prep will give you diarrhoea and make you run to the toilet. It can start working within 1 to 2 hours but sometimes takes longer. If you have not had a bowel movement after 2 doses, wait until you go to the toilet before you continue with Klean-Prep. If you have slept the night and still not had any bowel movements, contact the department for advice. The effects can last up to six hours or more.

## What happens after the test?

You will be able to rest in the recovery area until you feel able to have a drink and something light to eat. This varies from person to person but is usually around 30-60 minutes. You will have your pulse and blood pressure checked a few times and your nurse will ask you how you feel. Once everything has returned to normal you will be ready for discharge. Some people recover quickly but others need a bit more time. If you have had sedation you **must** be picked up from the unit.

Before you go home the nurse or endoscopist will go over the results of the test and any medication or extra tests needed and they will tell you if you need another appointment. You will also be given some written information with details of the results of the test.

If the person taking you home has left the department, the nursing staff will telephone them when you are ready to go.

If you have had sedation you might feel drowsy for the rest of the day. The effect of the sedation lasts for 24 hours.

### **If you have sedation and/or a painkilling injection:**

**You should not drive for 24 hours or you will be driving under the influence of drugs.**

**You should not drink alcohol, look after other people, sign any legally binding documents or operate machinery or possibly dangerous household appliances for 24 hours following the procedure.**

## Points to remember

If you are having sedation, you **must** have someone to take you home and stay with you for 12 hours. We would advise that you arrange to have someone stay with you overnight.

Our aim is for you to be seen and have your procedure as soon as possible after your arrival. However, the department is very busy and also deals with emergencies so it is possible under these circumstances that your procedure may be delayed

If you have any problems with worsening abdominal pain or continuing bleeding after your procedure, please contact the Endoscopy Department between the hours of 8am – 5pm Monday to Friday on the telephone number on page 10 of this booklet

Out with these times please phone NHS24 on **111**.

## Information for patients with other medical conditions

### **Information for patients with implanted cardiac devices (pacemakers, defibrillators)**

Some implanted cardiac devices need to be adjusted before colonoscopy can be carried out. Please telephone the number for the nurses shown on page 10. The nurses can then arrange for this to be done.

### **Information for patients with diabetes**

Most people with diabetes do not need to be admitted to hospital for colonoscopy. We try and arrange for you to have an early morning appointment so that you do not need to fast too long. If you do not have an early appointment please phone the number for the nurses on page 10.

You need to fast before the test so you may need to adjust your diabetes medication to prevent your blood sugar becoming too low. Because of this your diabetic control may not be as good as usual, but it will return to normal soon after the test when you are eating and drinking normally. However, it is important that you avoid low blood sugars (less than 4 mmol/l) and high blood sugars (more than 15 mmol/l).

**Diet-treated diabetes:** If your diabetes is controlled by diet alone (i.e. you do not take tablets or injections to control your blood sugar levels), then the bowel preparation for colonoscopy should have little or no impact on your diabetes. If you are unsure if you take tablets for your diabetes, then you should contact your GP or your Diabetic Specialist Nurse for advice.

**Tablet-treated diabetes:** Continue taking your tablets as normal during your bowel preparation, but on the day before the colonoscopy, do not take any diabetes tablets.

Check your blood sugar more often than usual if you have a monitor. If you do not monitor your sugars, do not worry. The risk of your sugar levels going low or high is much less than for people with insulin-treated diabetes. If your blood sugar drops or you feel shaky and sweaty, you can take a sugary drink like Lucozade or lemonade (not diet) to bring your levels back up. You should start to feel better within 10 to 15 minutes. If you do not feel better, then you should contact your GP or NHS 24.

**Injectable GLP-1 analogue-treated diabetes:** Weekly injections of non-insulin medicines (such as Trulicity and Ozempic) do not need to be stopped. If you take daily injections of a non-insulin medicine (such as Byetta, Victoza or Lyxumia) you should stop these on the day of the colonoscopy.

**Insulin-treated diabetes:** Once you start taking the bowel preparation you need to include some carbohydrate in your diet so you will need to drink some clear fluids containing sugar. It is probably best to drink these regularly throughout the day. The following contain a similar amount of carbohydrate to one medium sized slice of bread:

- 150 mls/5fl oz unsweetened, clear apple juice
- 150 mls/5fl oz unsweetened, clear grape juice
- 60 mls/2fl oz ordinary sweetened squash
- 75mls/2.5fl oz traditional Lucozade
- 250mls/8fl oz ordinary lemonade
- 150ml/5fl oz cola
- 100g/4oz ordinary clear jelly.

Monitor your blood sugars at least 4 times during the day (or scan frequently if you use a Freestyle Libre device), but ideally you should monitor more frequently than this. Continue to take your daily insulin injections, but the amount you take may need to be altered according to how your blood sugar levels are behaving and how much carbohydrate containing drinks you are taking. In general, insulin doses often need to be reduced by 20-30%.

If you take an injection of long-acting insulin in the afternoon, evening or before bed, reduce the dose by 20% on the day before the colonoscopy.

If you are unsure what to do with your insulin treatment, please phone your local diabetes clinic nursing team for advice. If you have blood ketone test strips, ensure you monitor your ketones if your sugar levels are consistently above 12 mmol/l.

You should also look out for signs of low blood sugar or hypoglycaemia (sweaty, shaky, racing heart). If this happens and your blood sugar is less than 4 mmol/L, suck 3 dextrose sweets to begin with and take another 3 if you do not feel any better. You can also drink 80 - 150mls of a sugary drink like Lucozade, sweetened squash or fruit juices. You should start to feel better within 10 to 15 minutes. If you do not feel better, then you should contact your GP or NHS 24.

## **On the day of the colonoscopy**

- You should have nothing to drink for 4 hours before your appointment time.
- Check your blood sugar on waking. If your blood sugar is less than 5 mmol/l, have a small glass of a sugar-containing drink. Inform the nurse on arrival in the endoscopy unit that you have done this.
- **Do not take any diabetes tablets on the morning of the colonoscopy.**
- If you are on multiple doses of insulin (4-5 injections per day), do not take your morning dose of quick acting insulin. If you usually take an injection of a long-acting insulin in the morning, take that injection as normal, but reduce the dose by 20%, unless your sugar levels are over 15 mmol/l.
- If you take twice daily injections of a mixed insulin, reduce the dose at breakfast by 50% (unless your sugar levels are over 15 mmol/l).
- If you use an insulin pump, you should not need to take any bolus insulin before the colonoscopy (unless your sugars are high) and you should put on a temporary basal rate of 80% (unless your sugars are very high).
- **Take all your blood testing and insulin injecting equipment with you. A nurse will check your blood sugar level when you arrive in the endoscopy unit.**
- If you need more advice about your diabetes medications, please contact your Diabetes Specialist Nurse as soon as possible. Remember to bring your diabetic tablets, insulin and injecting equipment with you when you attend for your appointment.
- After the test the nursing staff will let you know when you can eat and drink again. Take your tablets/insulin once you have had something to eat.
- When you get home, your sugar levels may vary for a short time, but this should quickly return to your usual.

## **Further information for all patients**

### **Cancellation**

While we make every effort to avoid this where possible, there is always a risk that your procedure may be cancelled at short notice. This is due to either emergency patients who need urgent surgery or other reasons which are beyond our control. We realise that this can cause distress and inconvenience, but in the event that your colonoscopy is postponed, you will be offered a new date as soon as possible.

### **Keeping your appointment**

If you cannot keep your appointment, or have been given one that is unsuitable, please change it as soon as possible by phoning **0131 536 4162**. Your call will give someone else the chance to be seen and will help us keep waiting times to a minimum.

## Public transport and travel information

### Bus details available from:

Lothian Buses on 0131 555 6363 [www.lothianbuses.co.uk](http://www.lothianbuses.co.uk)

Traveline Scotland on 08712002233 or [www.travelinescotland.com](http://www.travelinescotland.com)

### Train details available from:

National Rail Enquiries on 03457 484 950 or [www.nationalrail.co.uk](http://www.nationalrail.co.uk)

## Patient transport

Patient Transport will only be made available if you have a medical/clinical need. Telephone 0300 123 1236 \*calls charged at local rate up to 28 days in advance to book, making sure you have your CHI Number available. Hard of hearing or speech impaired? Use text relay: 18001-0300 123 1236\* (calls charged at local rate). To cancel patient transport, telephone 0800 389 1333 (Freephone 24 hour answer service).

## Interpretation and translation

Your GP will inform us of any interpreting requirements you have before you come to hospital and we will provide an appropriate interpreter. If you are having this procedure as an existing inpatient, staff will arrange interpreting support for you in advance of this procedure. This leaflet may be made available in a larger print, Braille or your community language.

**For legal reasons family members cannot interpret for you.**

**Family members cannot come into the procedure room with you.**

## Contact telephone numbers

**To cancel or change an appointment: 0131 536 4162**

### To speak to a nurse:

Western General Hospital Endoscopy unit **0131 537 1695**

Royal Infirmary of Edinburgh **0131 242 1600**

St John's Hospital (voicemail) **01506 523 982**

East Lothian Community Hospital **01620 642 885**

Leith Community Treatment Centre **0131 536 6442**

<b>Consent Form for a Colonoscopy with Endoscopic Mucosal Resection (EMR) with Klean-Prep</b>	Addressograph, or Name  DOB  Unit No./CHI
Name of procedure/investigation: <b>Colonoscopy with EMR</b>  Inspection of the colon using a flexible scope – with or without a biopsy and/or a polypectomy. Please read the patient information leaflet for further details: <b>Colonoscopy with EMR with Klean-Prep version 1.0</b>	
This procedure will involve: Intravenous analgesia <input type="checkbox"/> Inhaled analgesia (Entonox) <input type="checkbox"/> Sedation <input type="checkbox"/> None <input type="checkbox"/>	
<b>Following a request for further information: Statement of the healthcare professional</b>	
With appropriate knowledge of the proposed procedure, I have explained the procedure to the patient, in particular:	
The intended benefits of the procedure:	
The possible risks involved. I have discussed and listed below the significant, unavoidable and/or frequently occurring risks, including any risks that may be of specific concern to the patient:	
Risks specific to colonoscopy with EMR are bleeding, perforation, incomplete removal/unable to remove polyp	
The benefits and risks of alternative treatments that might be offered for this patient – including the option of no treatment:	
Any extra procedure(s) that might become necessary during this procedure e.g. blood transfusion <input type="checkbox"/> Other procedure (please state) <input type="checkbox"/>	
Healthcare Professional's signature: Print name and job title:	Date: ____/____/____
<b>Statement of interpreter (where appropriate)</b>	
I have interpreted the information above to the patient/parent to the best of my ability and in a way in which I believe that she / he / they can understand	
Signature: Print name: Or, please note the telephone interpreter ID number:	Date: ____/____/____

## To the patient

**You have the right to change your mind at any time, including after you have signed this consent form.**

I have read and understood the information in the patient information leaflet.

I confirm that the risks, benefits and alternatives of this procedure have been discussed with me, and that my questions have been answered to my satisfaction and understanding.

I wish to proceed with the planned procedure.

Signature:

Print name:

Date:

\_\_\_/\_\_\_/\_\_\_

If signing for a child or young person *(delete if not applicable)*

I confirm that I am a person with parental responsibility for the patient named on this form:

Signature:

Print name:

Relationship to the patient:

Date:

\_\_\_/\_\_\_/\_\_\_

If the patient is unable to sign but has indicated his/her consent, a witness should sign below:

Signature (Witness)

Print name:

Address:

Date:

\_\_\_/\_\_\_/\_\_\_

## Confirmation of Consent (where the procedure/treatment has been discussed in advance)

On behalf of the team treating the patient, I have confirmed with the patient that she/he has no further questions and wishes the treatment/procedure to go ahead.

Healthcare Professional's signature:

Print name and job title:

Date:

\_\_\_/\_\_\_/\_\_\_

## Withdrawal of patient consent

The option of withdrawing consent has been discussed and agreed by the team treating the patient.

Signature:

Print name:

Date:

\_\_\_/\_\_\_/\_\_\_

Healthcare Professional's signature:

Print name and job title:

Date:

\_\_\_/\_\_\_/\_\_\_