

## CT Enteroclysis (Small bowel study)

This leaflet tells you about having a CT Enteroclysis, a CT scan to look at your small bowel. It explains how the scan is carried out and the benefits, risks and alternatives, as well as what you can expect when you come to the Hospital.

If you have any further questions, please speak to the Doctor, Radiographer or Nurse looking after you or call the radiology department on the telephone number below:

**Eastbourne DGH Appointments:** Tel: 0300 131 4500 ext:734662/ 734794/ 734374;

Direct Line: 0300 131 4662/ 0300 131 4794/ 0300 131 4374

**Conquest Hospital Appointments:**Tel: 0300 131 500 ext: 735146/ 735141;

Direct Line: 0300 131 5146/ 0300 131 5141

### What is CT Enteroclysis?

CT Enteroclysis is a non-invasive way of looking inside your small bowel and all of the surrounding organs in your abdomen.

A CT (computed tomography) scanner takes a series of pictures of any part of your body using x-rays to produce images that show cross-sections or slices of your body. A Radiographer (a University-trained health professional who works in Radiology to produce diagnostic images using a variety of different modalities) will perform your scan and may be assisted by an RDA (Radiology Department Assistant). The data produced from the scanner is processed by a powerful computer to create the images and can be viewed on a screen to show very detailed images of the inside of your body. These images are interpreted by a Radiologist (a specialist X-Ray Consultant who is trained to interpret diagnostic images) to provide a report for your referring Clinician.

The CT Scans provide much greater detail of internal organs, bone, blood vessels and soft tissue than ordinary x-rays and so are often the preferred method of diagnosing a wide range of medical conditions such as cancers, infection, inflammation, cardiovascular disease, trauma and musculoskeletal disorders.

For CT Enteroclysis, you will be asked to drink some fluid for an hour before your scan. This fluid distends the small bowel so that it can be well seen on the CT images.

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### Why would I need this procedure?

CT Enteroclysis can help your doctor investigate symptoms you may have been experiencing involving your small-bowel e.g. the investigation of Crohn disease, small-bowel obstruction and unexplained gastrointestinal bleeding. Your Doctor can then decide the best treatment options for you.

## Diagram of the Digestive Tract

### 1 Mouth

Food and liquid enter the body through the mouth. Chewing breaks down the food.

### 2 Oesophagus

Carries the food and liquid to the stomach for digestion.

### 3 Stomach

Stores and breaks down the food into a liquid mixture before slowly releasing it into the small bowel.

### 4 Liver

Produces bile, which helps the body absorb fat from food.

### 5 Gallbladder

Stores bile until the body needs it.

### 6 Pancreas

Produces enzymes (substances that speed up chemical reactions) that help the body digest fat, protein and carbohydrates (starchy foods).

### 7 Small bowel

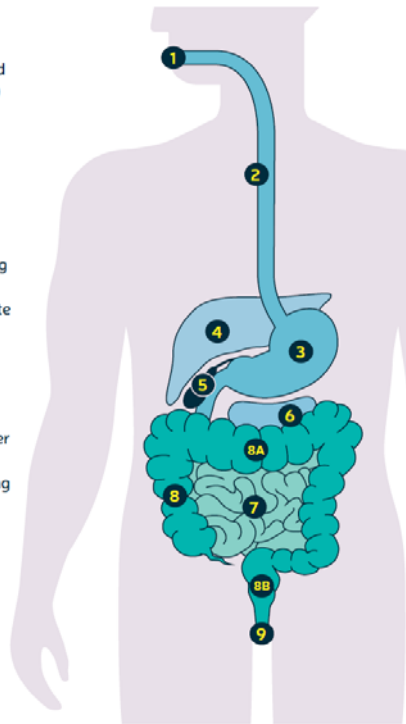
Breaks the food down even further, absorbing the nutrients into the body. Undigested waste moves into the colon.

### 8 Large bowel

Made up of the colon (8A) and rectum (8B). The body absorbs water from the undigested waste as it moves along the colon towards the rectum. Waste (poo) is stored in the rectum until it passes out of the body.

### 9 Anus

Poo passes through the anus as it leaves the body.



## What are the alternatives?

Your Doctor will have decided that a CT Enteroclysis scan is the best option for you. Other forms of imaging may not provide the same level of detail or give the information that they need to make an accurate diagnosis.

There are several alternative ways of looking at the small bowel:

**Small bowel barium studies** use barium contrast to fill or coat the small bowel and allow it to be seen on X-rays. The barium may either be taken orally (*small bowel meal or follow through*) or introduced directly into the small bowel via a tube passed through the nose and beyond the stomach (*Small bowel enema or Barium enteroclysis*).

**Endoscopy** is a way of examining the large bowel using a thin tube with a camera on the end (endoscope) which is passed through the oesophagus and stomach and moved around the small bowel. The procedure is invasive and usually requires sedation. Visualisation of the entire small bowel by endoscopy is a specialised technique and is not widely available. However, it does allow tissue to be removed for testing (biopsy) if needed.

**Video capsule endoscopy** uses a 'capsule camera', which is swallowed by the patient. This sends real time pictures as it passes through the small bowel to a recording device worn on the patient's waist.

These examinations give a view of the small bowel only, whereas CT enteroclysis gives additional information about the other structures inside your abdomen.

## What are the potential risks and side effects?

All CT scanning involves the use of X-rays. There are strict guidelines in place for the use of x-rays in diagnosing medical conditions so CT scans can only be performed at the request of a Doctor (or other suitably registered health Professional). The amount of radiation used is more than an ordinary X-ray of the same area of the body and is equal to the natural radiation that we receive from the atmosphere over a period of approximately three years. **Women who are or might be pregnant must inform a member of staff in advance.** Because children are more sensitive to radiation, they should have a CT study only if it is essential for making a diagnosis and should not have repeated CT studies unless absolutely necessary.

We will keep the radiation dose as low as we possibly can.

Many CT examinations involve you having a contrast medium (dye) injected into a vein to increase the quality of information obtained from the scan.

- The injection usually causes nothing more than a warm feeling passing around your body, a metallic taste in your mouth and occasionally a sensation of needing to urinate. These effects subside within a few minutes.
- The risk of serious allergic reaction to contrast materials that contain iodine is extremely rare, and radiology departments are well equipped to deal with them.
- Very rarely, the dye may cause some kidney damage, most commonly in people who already have kidney problems. For this reason we may ask you to have a blood test before your scan to ensure your kidney function is good enough to be given the contrast.
- If you are having a contrast enhanced CT, there is a small risk that the injection of contrast can leak out under the skin instead of in the vein. If this happens then further advice will be given to by the staff at the time of the CT. There should not be any lasting damage but you may experience bruising as a result of this.

Despite these slight risks, your Doctor believes it is advisable that you should have this examination, and do bear in mind there are greater risks from missing a serious disorder by *not* having your scan.

**You must inform your Doctor and contact the Radiology department (on the numbers provided at the top of this information) for specific advice before you come to your appointment, if any of the following apply to you:**

- If there is any possibility that you might be pregnant
- If you are breastfeeding as you may need to express and discard your milk for 24 hours after the scan.
- If you have ever had any allergic reactions to x-ray contrast or any bowel preparations in the past.
- If you are taking medicines for diabetes, such as metformin, then these may need to be stopped following the scan (you will be given instructions regarding this at the time of your scan).

## **What should I wear?**

Please follow the instructions on your appointment letter as the need to change will vary dependant on your scan.

Metal fastenings like zips, poppers and hooks and eyes will show up on the scan, so we may ask you to change into a hospital gown. If you can avoid wearing these clothes then we may not have to ask you to change.

## What should I do before the scan?

Please follow the instructions received with your scan appointment. Please continue to take any prescribed medication as usual unless you have been told otherwise by your doctor.

At both Conquest Hospital and Eastbourne DGH please report to the main Radiology Department and book in at Reception. We have limited space in our waiting areas so please, whenever possible, limit the amount of people you bring with you to one. It will not be possible for this person to come into the scan room.

Please be advised that we cannot look after children whilst you are in the department, so if you need to bring your children with you, please bring along an adult who can supervise them while your scan is being done.

We will try to keep to your appointment time but occasionally we have to scan patients urgently at short notice which can cause delays for our booked patients. If this is the situation when you come for your scan we will let you know and keep you informed of any delays.

### On the day of the scan:

- Please be prepared to be in the hospital for several hours.
- **Do not eat or drink anything for 4 hours prior to your arrival.** You can continue to drink clear fluids.
- Please continue to take all your usual prescribed medication.
- Prior to your scan appointment we may have asked you to have a blood test to check your kidney function. This is so we can ensure that your kidneys are able to process the contrast that we need to inject for the scan.
- On arrival in CT you will be asked to drink 1.5 litres of the Mannitol and Nutilis solution over 45 minutes to 1 hour. The scan itself will only take less than 15 minutes in total. Prior to the scan you may also be given an injection of Buscopan (if not contraindicated) through a cannula (a small plastic tube which will be placed in your arm), which will help relax your bowel. During the scan you will also receive the injection of contrast through the cannula and will be asked to hold your breath for around 10-20 seconds for each scan and you will be asked to remain in the hospital for 1-2 hours following this.
- Once the procedure is complete you will be able to eat and drink normally.
- Following this scan you are not advised to drive yourself home or use public transport. Please ensure that you make arrangements to be taken home after your scan.

## What happens during the Scan?

The scanning machine is like a large doughnut. You will need to lie on a motorised bed. This moves slowly and slides into the centre of the ring until the part of the body to be scanned is within the ring. The x-ray machine within the ring rotates around your body. As it rotates around, the x-ray machine sends thin beams of x-rays through your body, which are detected by the x-ray detectors. Unlike some other scanning machines, the CT scanner is not enclosed and you will be able to see through the scanner.

You will need to lie very still while each picture is taken to avoid blurring the images and you may be asked to hold your breath for a moment. Straps and pillows may be used to help maintain the correct position and to keep you still during the examination.

Once you have drunk all of your preparation the Radiographer will position you for your scan. When you are positioned, the Radiographers will leave the room but you will be able to talk to them through an intercom and they will be watching you through the glass window.

We will need to give you an injection of contrast dye through a small cannula (a small plastic tube for giving medication). A Radiographer or RDA will insert the cannula into a vein in your arm or the back of your hand before your scan.

The dye may give you a metallic taste in your mouth and a 'hot flush.' Some people feel as though they want to pass water (wet themselves) - don't worry, you won't, it just gives you that feeling. All of these sensations pass in a couple of minutes.

You should not feel any pain during the scan itself. The most difficult part is keeping still. Try to relax as much as possible. If you find it uncomfortable to lie still then please tell the Radiographer and they will assist you however they can.

The images are recorded and the Radiographer will check them briefly to ensure that they are diagnostic (of good enough quality to be used to make a diagnosis). When this is done you will be allowed to get off the scanner bed and leave the scanning room.

## Information regarding the bowel preparation

Please read the information below so that you understand fully about the preparation and its effects.

### Mannitol

Mannitol is a liquid sugar that has a cool sweet taste. It is not absorbed by the body when taken orally, therefore does not have an impact on blood insulin levels. Mannitol does not promote tooth decay.

Drinking mannitol prior to the CT scan is a non-invasive method for distending the bowel, providing increased visibility of the bowel and therefore optimal imaging quality and diagnosis.

The main side effects of mannitol are:

- Diarrhoea - You will be able to stay close to a toilet in the department whilst drinking the mannitol, **as you may experience severe, ongoing diarrhoea almost immediately after taking the Mannitol which may continue throughout the day until your bowel is clear.**
- Flatulence
- Vomiting
- Abdominal discomfort/spasms- If we are able to administer a muscle relaxant called Buscopan this will be lessened.

All of the above effects are minimised by the low concentration used and any effects should be short lived. We suggest that you remain in the hospital for 1 to 2 hours following your scan, and that you report back to CT prior to leaving the hospital. Please drink plenty of fluids when you have left the department, but **if the diarrhoea persists please seek medical advice.**

### Nutlis

Nutlis is a thickening agent, which is commonly used to thicken fluids to help patients who experience problems with swallowing. In this case for your CT scan it is used to further aid the distension of the small bowel and improve the diagnostic value of the images.

## Buscopan

Buscopan reduces the involuntary muscle and bowel movements that would otherwise cause blurring on the images, so helps to improve the diagnostic quality of the images and is administered through the cannula in your arm. You will be asked some safety questions prior to this being administered to ensure that it is safe for you to have Buscopan. **It is very important that if you have any problems with your heart that you mention it to the Radiographer.** This may make your eyesight blurred, but it soon wears off. However, you should not drive if your eyesight is still blurred once your scan is finished.

## Contrast agents

Contrast agents are otherwise known as 'dyes' and are used in medical imaging to improve the diagnostic quality of the images. This will be injected in to the blood stream during the scan via a cannula, which will have been placed in a vein in the arm. In this CT scan the contrast delineates the blood vessels in the abdomen and highlights all the other abdominal organs to ensure we obtain the best quality images to aid the diagnosis.

## How do I get the results of my scan?

Due to the complex nature of the scan images which need evaluation by the Radiologist, you will not receive any scan results on the day of your scan. Your results will be given to you by the Doctor that referred you for the scan when you see them. They will discuss the results with you and any treatment you may need. Please allow two weeks for the results to be sent to your referring doctor if you are an out-patient. As per your appointment letter, if your condition changes or deteriorates in this time, contact your referring Doctor.

Patients who have scans performed whilst they are on the ward, will receive the results usually the same day from the ward Doctors.

## Consent

We will ask you to fill out a questionnaire on your arrival in the department, which helps us assess your suitability for the contrast dye if needed. On this we will ask for your consent for us to carry out the scan. Consent will verbally be taken before any injections take place.

## Sources of information

For further information regarding your condition please refer back to the Doctor who has sent you for your scan.

Further information regarding CT Scanning can be gained from The Royal College of Radiologists - [www.rcr.ac.uk](http://www.rcr.ac.uk)

Patient information - <https://patient.info/treatment-medication/ct-scan>

## Important information

The information in this leaflet is for guidance purposes only and is not provided to replace professional clinical advice from a qualified practitioner.

## Your comments

We are always interested to hear your views about our leaflets. If you have any comments, please contact the Patient Experience Team – Tel: 0300 131 4731 or by email: [esh-tr.patientexperience@nhs.net](mailto:esh-tr.patientexperience@nhs.net)

## Hand hygiene

The Trust is committed to maintaining a clean, safe environment. Hand hygiene is very important in controlling infection. Alcohol gel is widely available at the patient bedside for staff use and at the entrance of each clinical area for visitors to clean their hands before and after entering.

## Other formats

**If you require any of the Trust leaflets in alternative formats, such as large print or alternative languages, please contact the Equality and Human Rights Department.**

**Tel: 0300 131 4500 - Email: [esh-tr.AccessibleInformation@nhs.net](mailto:esh-tr.AccessibleInformation@nhs.net)**

After reading this information are there any questions you would like to ask? Please list below and ask your nurse or doctor.

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If you have any further questions, or need to inform us of anything mentioned in this information, please contact Radiology on:

**Eastbourne DGH Appointments: Tel:** 0300 131 4500 **ext:** 734662/ 734794/ 734374!  
**Direct Line:** 0300 131 4662/ 0300 131 4794/ 0300 131 4374  
**Conquest Hospital Appointments: Tel:** 0300 131 500 **ext:** 735146/ 735141!  
**Direct Line:** 0300 131 5146/ 0300 131 5141

## Reference

The following clinicians have been consulted and agreed this patient information:

Enter names and job titles:

Rebecca Ayling - Clinical Manager CT Scanning, Dr Justin Harris - Clinical Lead Radiologist, Dr Gillian Watson - Consultant Radiologist, Dr Neil Barlow - Consultant Radiologist

The directorate group that have agreed this patient information leaflet:

Diagnostics, Anaesthetics and Surgery Division

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Responsible clinician/author: Rebecca Ayling, Clinical Manager CT Scanning

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