



British Society of GI and Abdominal Radiology

CT Enterography

Patient Information Leaflet

Introduction

This leaflet tells you about CT Enterography, a test to look at your small bowel. It explains how the test is done, what to expect, and the risks involved. It is not meant to replace informed discussion between you and your doctor, but can act as a starting point for such a discussion.

What is CT enterography?

CT enterography is a non-invasive way of looking inside your small bowel and abdomen. A CT (computed tomography) scanner uses special x-ray equipment and computers to produce images of multiple “slices” of the part of the body being scanned. These images of the inside of the body can then be examined on a computer monitor.

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 enterography, fluid is drunk prior to the scan to distend the small bowel so that it can be well seen on the CT images.

How does it work?

The CT scanner consists of a ‘doughnut-shaped’ structure with a hole, or short tunnel, in the centre. You will lie on a narrow examination table that slides into and out of this tunnel. The x-ray tube and electronic x-ray detectors are located opposite each other in a ring, called a gantry, which rotates around you. A narrow fan-shaped beam of X-rays is produced from inside the gantry, passes through your body and is detected by electronic sensors on the other side of the gantry. This information is sent to a computer that produces a picture of the internal structure of the body. Modern CT scanners are so fast that they can scan through large sections of the body in just a few seconds.

The scanner is operated by a Radiographer, who is a professional trained to carry out X-rays and other imaging procedures. The pictures are displayed on a computer workstation for examination by the Radiologist, who is a doctor specially trained to interpret the images and carry out more complex imaging examinations.

Some scans need to be performed with an injection of special contrast (dye) which is used to enhance visibility of the area being scanned, particularly the blood vessels and blood flow to organs.

Are there any risks?

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. The amount of radiation used is more than an ordinary X-ray of the chest or 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.

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.

Are there alternatives to CT enterography?

There are 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 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 more invasive than CT enterography and usually requires sedation. Visualisation of the entire small bowel by endoscopy is a specialized 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. This technology is not widely available at the moment.

These examinations give a view of the small bowel only and, unlike CT enterography, do not give information about the other structures inside your abdomen.

MRI of the Small Bowel uses an MRI scanner to obtain cross-sectional images of the small bowel after it has been distended with a special solution taken orally (*MR Enterography*) or introduced directly into the small bowel via a tube passed through the nose and beyond the stomach (*MR enteroclysis*). Like CT Enterography, this technique also provides information about the other structures inside your abdomen.

What do I have to do before my CT enterography?

Bowel preparation.

It is very important for the stomach and small bowel to be empty before the test is performed so that the small bowel can be clearly seen. You will be given a leaflet explaining this bowel preparation in more detail. The leaflet gives dietary instructions about what you should and should not eat or drink before your test. Sometimes a mild laxative is prescribed to clear the small bowel prior to the test. It is very important that you follow the instructions you are given.

Taking tablets and medicines

You should continue to take all your normal medication unless you are diabetic taking insulin. If you are diabetic using insulin, please contact the Radiology department for advice.

If you take Metformin (Glucophage) tablets for diabetes, please let us know on the day of your test. We sometimes ask patients to stop these tablets for two days after their test.

Females

Females are asked to contact the Radiology department if you suspect that you may be pregnant OR if the appointment is more than 10 days after the *start* of your last period. This test uses radiation and there is a risk to the unborn baby if we were to do the X-rays when you are pregnant. When you arrive for your test, you will be asked when your last period started. If it is more than 10 days earlier, your appointment will be postponed.

If you are taking the oral contraceptive pill, diarrhoea can make it less effective. Continue taking the pill but use other precautions for the rest of that cycle.

Where do I go when I arrive at the hospital?

Please report to the reception desk in the Radiology department with your appointment letter. You will need to arrive at least 60 minutes before your appointment for preparation. You will be asked to sit in the waiting area until called by a member of staff.

A member of the team will explain the test and answer any questions. Please let them know if you had any problems with your bowel preparation.

You will be shown to a private cubicle and asked to change into a clean gown. You will be asked to remove all jewellery and metal from the area to be scanned. Your clothes and valuables will be secured in a locker until after the procedure.

Can I bring a relative/friend?

You may bring a relative or friend with you to the appointment but, as the examination uses x-rays, for reasons of safety they will not be able to accompany you into the examination room, except in very special circumstances. If the patient is a young child or is un-cooperative, a parent or health worker may stay in the room but will be required to wear a protective lead apron.

If you need an interpreter please tell us when you receive your appointment so that we can arrange this.

Please let us know when you arrive for your test if you have any of the following conditions:

- Diabetes
- Asthma
- Kidney disease
- Prostate problems
- Heart disease
- Glaucoma
- Any allergies
- You have had a reaction to iodine or any intravenous contrast medium (if you are not sure about this, please ask us).

What happens during CT enterography?

You will be asked to drink about 1.5 -2 litres of liquid, which passes through your oesophagus and stomach before going into your small bowel. You should drink this steadily over approximately 40 - 60 minutes.

You will be taken into the CT Scanning Room and asked to lie on the scanner table flat on your back. The radiographer will ensure that you are lying comfortably in the correct position. Straps and pillows may be used to help maintain the correct position and to keep you still during the examination. A small tube, called a cannula will be inserted into one of the veins in your arm. A muscle relaxant will normally be injected to stop the bowel from moving during the scan. This may make your eyesight blurred, but it soon wears off. However, you should not drive for 30 minutes after the injection. Iodine-based intravenous contrast may be administered through the cannula before or during the scan using a special pump.

You will be asked to hold your breath and will feel the table move in and out of the scanner and whilst the scans are taken. The scan will take approximately 10-20 seconds (one breath hold). Sometimes the radiographer may need to take extra scans to ensure we can fully see your entire bowel.

You will be alone in the CT room during the scan but the Radiographer will be able to see, hear and speak with you at all times. When the scan is finished the radiographer will check the images are complete before helping you get off the table.

What happens after the test?

The liquid you drink may cause some short lived diarrhoea, so you may wish to spend a short time in the department near to a toilet before you go home. You may eat and drink as normal as soon as the examination is finished.

How do I get my results?

A specialist radiologist will review the images from your CT enterography and send a report to your doctor. Your GP or hospital Consultant who referred you for the test will see you to discuss the results.

Any further questions?

We will do our best to make your visit as comfortable and stress free as possible. If you have any further questions, or suggestions for us, please let us know.

If you would prefer information and advice in another language, please contact the Radiology department.

Further Information

For general information about Radiology departments, visit The Royal College of Radiologists' website: www.goingfora.com

For information about the effects of x-rays read the National Radiological Protection Board (NRPB) publication: 'X-rays how safe are they?' on the website: http://www.hpa.org.uk/webc/HPAwebFile/HPAweb_C/1194947388410

For health advice or information you can call NHS Direct on 0845 4647 or visit the website: www.nhsdirect.nhs.uk

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