



CT Colonography

Patient Information Leaflet

Introduction

This leaflet tells you about CT Colonography, a test to look at your large bowel (colon). 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 colonography?

CT colonography is a non-invasive way of looking inside your large bowel and abdomen. A CT (computed tomography) scanner uses special x-ray equipment and computers to produce images of multiple “slices” of the body. 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.

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.

During CT colonography, gas is used to inflate the bowel via a thin flexible tube placed in the rectum, or back passage. The scanner can then produce two and three dimensional images of the whole of the colon and rectum (large bowel). The Radiologist uses these images to view the bowel in a way that simulates a colonoscope or camera travelling through the colon. This is why CT colonography is sometimes called virtual colonoscopy.

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 colonography is generally regarded as a very safe test.

Problems can occur, but they are rare and are similar to those that can happen with other methods of examining the large bowel.

These include

- Abdominal discomfort
- “Faint-like” reactions
- Damage to the bowel wall (a small tear in the lining of the colon or rectum happens in fewer than one in 2000 tests). The risk of this complication is lower with CT Colonography than Conventional Colonoscopy.
- Dehydration or an electrolyte imbalance caused by the laxative. It is important that you drink plenty of fluids - your diet sheet will give you this information. **If you feel very unwell after taking your laxative, please do not take any more and contact the Radiology department or your doctor.**

Like any x-ray examination, this test uses radiation. We will keep the radiation dose as low as we possibly can. The radiation dose you will receive is similar to the radiation dose from a barium enema. Women who are or might be pregnant must inform a member of staff in advance.

CT Colonography may 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 colonography?

There are two other ways of looking at the large bowel: barium enema and optical colonoscopy.

Barium enema involves barium contrast being run into the large bowel via a tube placed in the rectum, or back passage. This is followed by distension of the bowel with air using a small hand pump. The barium coats the lining of the bowel and allows it to be seen on X-rays.

Optical colonoscopy is the standard way of examining the large bowel using a thin tube with a camera on the end (colonoscope) which is passed into the back passage and moved up and around the bowel. The procedure is more invasive than CT colonography and usually requires sedation. However, it does allow tissue to be removed for testing (biopsy) or polyp removal if needed.

These two tests will only give us information about your large bowel. CT colonography also provides information about the other structures inside your abdomen.

What do I have to do before my CT colonography?

Bowel preparation.

It is very important to clear the bowel of faeces before the test is performed so the lining of the bowel can be clearly seen. This involves bowel 'preparation', which is achieved by a combination of low fibre food and an oral bowel cleansing agent to clear the bowel prior to the test. You may be asked to drink a "tagging" liquid containing iodine or barium one or two days before having your test. These agents help the Radiologist to better distinguish stool from polyps on the scan.

You will be given a leaflet explaining this preparation in more detail. The leaflet also gives dietary instructions about what you should and should not eat or drink in the two days before your test. The laxatives we give you are very effective and you will need to stay close to a toilet all the time. There is a risk of developing dehydration, low blood pressure or kidney problems with this medication. In most people this risk is very small. The doctor prescribing the oral bowel cleansing agent will have assessed your individual risk and identified the most appropriate medication for you. You should also have had a blood test to check your kidney function. The risk of developing dehydration, low blood pressure or kidney problems can be reduced further by following the guidance outlined in the bowel preparation leaflet.

Taking tablets and medicines

You should follow any specific advice you have been given with regard to your regular medications. Medications that you may have been asked to temporarily discontinue include...

- antihypertensives (to lower your blood pressure) such as ACE inhibitors like Ramipril®
- diuretics ('water tablets', such as furosemide)
- non-steroidal anti-inflammatory drugs (a type of pain killer, such as ibuprofen)
- iron preparations (or anaemia, such as ferrous sulphate)
- aspirin, dipyridamole, clopidogrel or warfarin (these agents thin your blood out; you may have been asked to discontinue them depending on the nature of the procedure that is planned)

If you have not been provided with any specific advice regarding your regular medications then you should continue to take these medications in the normal way. However, you may need to amend the timing of your regular medications as it is preferable to avoid taking them less than one hour either side of any dose of oral bowel cleansing agent.

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 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 colonography?

You will be taken into the CT Scanning Room and asked to lie on the scanner table on your left side. The radiographer will pass a small flexible tube into your back passage.

You may have a small tube, called a cannula, inserted into one of the veins in your arm. A muscle relaxant will normally be injected to avoid bowel spasm. This may make your eyesight blurred, but it soon wears off. However, you should not drive for 30 minutes after the injection.

Gas (carbon dioxide or air) will be gently introduced into your bowel through the tube in your back passage. Despite the muscle relaxant, you may still feel some bloating and mild discomfort in your abdomen like "bad wind". Significant pain is uncommon, occurring in less than 5% of patients.

Once the radiographer is satisfied with the amount of gas in your bowel, two scans are undertaken. For the first scan you will be asked to turn onto your front and raise your arms above your head. You will also be asked to hold your breath and will feel the table move in and out of the scanner and whilst the scans are taken. You will then be asked to turn carefully onto your back for the second scan. Please note that the tube will still be in position and the gas will continue to run into the bowel quite slowly. At this stage you may be given an injection of X-ray dye to highlight the blood vessels. Each scan will take 10-20 seconds (one breath hold).

If you are unable to lie on your front, the two scans may be performed with you lying on each side. In total the procedure usually takes about 20-30 minutes. Sometimes the radiographer may need to take extra scans to ensure we can fully see your entire bowel. Occasionally we will perform a scan of your chest at the same time for additional information.

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. Once the scan is done the rectal tube is removed.

What happens after the test?

Although some patients will be able to go home immediately after the test, others may wish to spend a short time in the department near to a toilet until the wind and cramps have settled down. It may take a few hours to return to normal. We therefore recommend that you are driven straight home rather than driving yourself or going on public transport. You may find a hot drink or hot water bottle soothing to help relieve abdominal cramps.

You may eat and drink as normal as soon as the examination is finished. You may be a little constipated after the examination; drink plenty of fluids to prevent this.

How do I get my results?

A specialist radiologist will review the images from your CT colonography 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

If you have internet access, you can find out more about CT colonography (virtual colonoscopy) on the National Institute of Clinical Excellence website:

www.nice.org.uk/page.aspx?o=104843

For more information on bowel cancer visit: www.bowelcancer.org

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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