

## X-rays

Conventional radiography remains the cornerstone of modern radiology. At Ascot Radiology all x-rays are taken using digital technology. This allows images to be viewed instantly and then stored on our computer (PACS) system. This system also enables referring doctors to have direct access to their patients' images via their computer.

All images are reported promptly and abnormal results are discussed with the referring clinician and the patient is advised when appropriate.

If you have previous x-rays which are relevant, please bring them with you. This may reduce the number of x-rays you need and improve the accuracy of the report.

### WHAT ARE X-RAYS?

X-rays use invisible beams of electromagnetic energy to produce images of internal tissues and bones. X-rays pass through your body but are absorbed in different amounts depending on the density of the material they pass through. Dense materials, such as bone and metal, show up as white on x-rays. The air in your lungs shows up as black. Fat and muscle appear as varying shades of gray. The most frequently performed studies include skeletal x-rays to assess bones and joints, and chest radiographs to image the heart, major blood vessels, lungs and rib cage.

X-ray technology is used in other types of diagnostic procedures, such as computed tomography (CT) scans, and fluoroscopy (like an x-ray 'movie').

### WHAT IS CONTRAST MEDIA?

For some types of x-ray tests, a contrast medium is introduced into your body to provide greater detail on the x-ray images. Contrast can be swallowed, administered rectally or injected into a blood vessel. **There are two main types of contrast: iodinated contrast and barium sulphate.**

**IODINATED CONTRAST** is a form of x-ray dye containing iodine, which enhances the visibility of vascular structures and organs during some x-ray procedures. Some pathologies, such as cancer, have particularly improved visibility with iodinated contrast.

Contrast can be injected into veins or arteries, into disks or the fluid spaces of the spine, into joints (during an arthrogram) and into other body cavities, such as the bladder via a catheter.

Patients receiving IV contrast typically experience a metallic taste and a hot feeling around the throat. This hot sensation gradually moves down to the pelvic area. This feeling is normal and will subside very quickly.

### Risks of Iodinated Contrast:

- Because contrast materials carry a slight risk of causing an allergic reaction or adverse reaction, you should tell your doctor about:
  - allergies to contrast materials, food, drugs, dyes, preservatives, or animals
  - medications you are taking, including herbal supplements
  - recent illnesses, surgeries, or other medical conditions
  - history of asthma and hay fever
  - history of heart disease, diabetes, kidney disease or thyroid problems.
- While serious allergic reactions or other reactions to contrast is rare, radiology departments are well-equipped to deal with them.
- You will be given specific instructions on how to prepare for your procedure.

### ASCOT RADIOLOGY: X-RAYS

## X-rays CONTINUED

**BARIUM SULPHATE:** Barium is a dry, white, chalky powder that is mixed with water to make a thick liquid, and is only used for diagnostic studies of the gastro-intestinal tract. It is usually swallowed during Barium Meals or Swallows or inserted rectally for Barium Enemas and Defecating Proctograms. CT scans are now replacing some barium examinations.

Barium absorbs x-rays and appears white x-ray images. It coats the inside wall of the oesophagus, stomach, large intestine, and/or small intestine so that the inside wall lining, size, shape and contour are visible on x-rays. This process shows differences that might not be seen on plain x-rays.

Barium is an inert substance, which passes through the gastro-intestinal tract and is expelled during a bowel movement.

### RADIATION EXPOSURE

As with any kind of medical procedure, x-rays are safe when they are used properly. Professionals who use x-rays - radiographers and radiologists - have specialised training in using the smallest quantity of radiation needed to get the required results.

When clinically indicated, properly conducted imaging with the smallest risk should be performed. The tiny amount of radiation exposure should always be considerably outweighed by the benefits for the patient.

A fetus/embryo is more vulnerable to x-rays than a baby, child or adult. Women who are or think might be pregnant should make sure they tell their doctor or radiographer beforehand.