

Patients lie on a couch which slides into the scanner (a short tunnel surrounded by a large circular magnet) so that pictures of the body can be taken. A computer in a separate room is used to operate the scanner. It is important that no metal objects are inside you such as pacemakers or artificial heart valves, artificial limbs or joints, cochlear (inner ear) implants, or various screws, plates or staples from previous surgery. You will be asked about this before the scan, and also if your job involves working with metal. During the scan you may have to remain still for up to an hour, but most scans take only 20-30 minutes. Although there are no known side effects for pregnant women, they are not scanned unless absolutely necessary. The results of these scans are not available as quickly as standard x-rays, so you may have to wait for about two weeks before your doctor knows the results.

Nuclear medicine scan

This scan can detect tumours, and also assess blood flow to heart muscles, helping doctors decide the best course of cardiac surgery. The latest form is the PET (Positron Emission Tomography) scan. A radioactive chemical (radiotracer) is injected into the body and gathers where cells are most active, a sign of cancerous growths. Gamma rays emitted by the chemical are detected by a gamma camera, converted into an

electrical signal and sent to a computer, which builds up a colour picture on screen.

Bone mass (DEXA) scan

DEXA scans are used for diagnosing osteoporosis by measuring bone density. DEXA (dual emission x-ray absorptiometry) is also known as bone densitometry, QDR (quantitative digital radiography), or BMD (bone mineral density) measurement. It sends low-dose x-rays through the bone being tested, and a computer calculates average bone density. Pregnant women are advised not to have a DEXA scan.

Barium swallow (Fluoroscopy)

This uses barium sulphate (a contrast medium which is opaque to x-rays). A barium swallow or 'meal' introduces the contrast medium by mouth, and the x-rays show the stomach and small intestine.

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X-ray and scanning
procedures at the
West Berkshire
Community Hospital
Information for patients

The X-ray Department at the West Berkshire Community Hospital

No appointment is needed for standard x-rays, Monday to Friday 8.30am to 3.30pm. Please bring your referral card or form with you. For scans and some special x-rays an appointment is necessary. Please bring your appointment letter with you when you come for your x-ray. Not all the procedures in this leaflet are available at this hospital.

Standard x-ray

Standard x-rays are simple 2-dimensional images of dense areas of the body such as the



chest, spine and abdomen. They can show major changes in tissues and organs, and are particularly useful to look at bones to show joint problems and bone fractures, and to check on bone healing. They are also used for teeth and jaw images.

Modern x-ray departments are digitalised, and the 2-dimensional digital images are stored and viewed on computers.

Women who are or may be pregnant should avoid having x-rays or scans, especially involving the pelvis or abdomen, particularly in the first 3 months.

X-rays are completely painless, and you cannot see or feel them, and a simple x-ray may take only a few minutes.

Mammogram

Mammograms can detect early breast cancers that can't be felt by physical examination. The NHS Breast Screening Programme offers women aged over 50 years of age a mammogram every 3 years until the age of 70. You will be asked to strip to the waist and stand in front of a mammogram machine. Each breast is positioned in turn between two plates so that it is compressed and flattened, and a detailed picture is displayed on a digital screen. Although not painful, having a mammogram can be uncomfortable.

CT scan

The CT or CAT (computed axial tomography) scan is used to take detailed pictures of any part of the body from soft tissues to organs and bones. It gives a more precise image than an x-ray, and is also used on the brain to look at stroke damage. The CT scan takes a series of image 'slices' at different angles, and unlike a flat x-ray which gives a 2-dimensional image, a CT scanner can be moved up and down the body to produce an in-depth cross-sectional image.

Depending upon which part of the body is being scanned, a dye (called a 'contrast medium') may be used to help get clearer pictures. For example, before a scan of the

abdomen you may be given a drink containing barium, which will show up on the x-rays as it moves through the digestive tract.

Ultrasound scan

This is for examining soft tissues, internal organs and developing foetuses.



A pregnancy scan can pick up around 70% of serious prenatal abnormalities, such as spina bifida. Ultrasound can also find changes in the soft organs of the body such as cysts or gall stones by using high-frequency sound waves to form a picture of the internal organs or of an unborn baby. Acoustic gel is applied and a probe, which is attached to the machine, is moved across the area being examined.

MRI scan

An MRI (magnetic resonance imaging) scan shows fine detail of soft tissue, tendons, nerves and muscles, and is used for images of the brain and musculoskeletal system. The MRI scanner can build up a view of the whole body, and as no radiation is involved it is the preferred way to scan children. It produces a powerful magnetic field, causing the body's cells give off electrical signals which a computer turns into images.