



Bone scan

Definition

A bone scan is an imaging test used to diagnose bone diseases and find out how severe they are.

How the Test is Performed

A bone scan involves injecting a very small amount of radioactive material (radiotracer) into a vein. The substance travels through your blood to the bones and organs. As it wears off, it gives off a little bit of radiation. This radiation is detected by a camera that slowly scans your body. The camera takes pictures of how much radiotracer collects in the bones.

The radiotracer, injected into a vein, emits gamma radiation as it decays. A gamma camera scans the radiation area and creates an image.



Gamma camera



If a bone scan is done to see if you have a bone infection, images may be taken shortly after the radioactive material is injected and again 3 to 4 hours later, when it has collected in the bones. This process is called a 3-phase bone scan.

To evaluate metastatic bone disease, images are taken only after the 3- to 4-hour delay.

The scanning part of the test will last about 1 hour. The scanner's camera may move above and around you. You may need to change positions.

You will probably be asked to drink extra water after you receive the radiotracer to keep the material from collecting in your bladder.

How to Prepare for the Test

You must remove jewelry and other metal objects. You may be asked to wear a hospital gown.

Tell your doctor if you are or may be pregnant.

DO NOT take any medicine with bismuth in it, such as Pepto-Bismol, for 4 days before the test.

Follow any other instructions you are given.

How the Test will Feel

There is a small amount of pain when the needle is inserted. During the scan there is no pain. You must remain still during the scan. You will be instructed when to change positions by the technologist.



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You may experience some discomfort due to lying still for a long period.

Why the Test is Performed

A bone scan is used to:

- Diagnose a bone tumor or cancer
- Determine if a cancer that began elsewhere in your body has spread to the bones. Common cancers that spread to the bones include breast, lung, prostate, thyroid, and kidney.
- Diagnose a fracture, when it cannot be seen on a regular x-ray (most commonly hip fractures, stress fractures in the feet or legs, or spine fractures)
- Diagnose a bone infection (osteomyelitis)
- Diagnose or determine the cause of bone pain, when no other cause has been identified
- Evaluate metabolic disorders, such as osteomalacia, primary hyperparathyroidism, osteoporosis, complex regional pain syndrome, and Paget disease

Normal Results

Test results are considered normal if the radiotracer is present evenly throughout all the bones.

What Abnormal Results Mean

An abnormal scan will show "hot spots" and/or "cold spots" as compared to surrounding bone. Hot spots are areas where there is an increased collection of the radioactive material. Cold spots are areas that have taken up less of the radioactive material.

Bone scan findings must be compared with other imaging studies, in addition to clinical information. Your provider will discuss any abnormal findings with you.

Risks

If you are pregnant or nursing, the test may be postponed to prevent exposing the baby to radiation. If you must have the test while breastfeeding, you should pump and throw away the breast milk for the next 2 days.

The amount of radiation injected into your vein is very small. All radiation is gone from the body within 2 to 3 days. The radiotracer that is used exposes you to a very small amount of radiation. The risk is probably no greater than with routine or conventional x-rays.

Risks related to the bone radiotracer are rare, but may include:

- Anaphylaxis (severe allergic response)
- Rash
- Swelling

There is a slight risk of infection or bleeding when the needle is inserted into a vein.

Alternative Names

Scintigraphy - bone
