TEST

X-ray - skeleton

A skeletal X-ray uses low-dose radiation to create images of bones and joints.

WHAT IT MEASURES
Bone shape, alignment, density, and visible damage

SAMPLE
None

FASTING NEEDED?
No

HOW LONG IT TAKES
About 10-30 minutes; skeletal surveys take longer

RESULTS IN
Often same day; timing varies by imaging service

USED FOR
Diagnosis and monitoring of bone and joint problems

MAIN LIMITATION
Early or hidden bone problems may not appear

Overview

A skeletal X-ray, also called bone radiography, uses a small amount of ionising radiation to make pictures of bones. Dense materials such as bone absorb more X-rays and usually appear white. Air appears dark, while muscles and other soft tissues appear in shades of grey.

An X-ray may focus on one area, such as your wrist, hip, spine, or knee. A skeletal survey is a planned series of X-rays covering many or all major bones. It takes longer and is used only for specific medical reasons.

X-rays can show fractures, dislocations, changes in bone shape, and some signs of arthritis, infection, or tumours. They do not show cartilage, muscles, tendons, bone marrow, or nerves as clearly as some other scans.

Why the test is ordered

Your healthcare professional may request a bone X-ray after an injury or when you have persistent pain, swelling, reduced movement, or a change in the shape of a limb or joint.

The test may be used to:

A full skeletal survey may be used when a condition could affect several bones. Examples include some bone marrow cancers, certain inherited bone conditions, or concern about more than one injury. In children, a skeletal survey may form part of a carefully controlled assessment when healthcare professionals are concerned about possible physical harm.

- Look for a broken or displaced bone
- Check whether a joint is dislocated
- Assess bone or joint alignment
- Look for some forms of arthritis or bone damage
- Investigate possible infection or abnormal bone growth
- Check healing after a fracture, operation, or treatment
- Confirm the position of surgical plates, screws, or joint replacements

Who should have the test

A skeletal X-ray is appropriate when the expected information is likely to help with diagnosis or treatment. It is not usually used as a general check-up in someone without symptoms or a specific clinical concern.

Children can have X-rays when needed. Imaging staff adjust the equipment to use the lowest radiation exposure that can produce a useful image.

Tell the imaging team if you are pregnant or think you could be pregnant, especially if the area being examined is near your abdomen or pelvis. An urgently needed X-ray can often still be performed with appropriate planning. The team may also consider ultrasound or MRI when either can answer the same question without ionising radiation.

How to prepare

Most skeletal X-rays need no special preparation. You can usually eat, drink, and take your regular medicines as normal.

Wear comfortable clothing that is easy to remove from the area being examined. You may be asked to change into a gown. Jewellery, watches, belts, underwired bras, zips, coins, and other metal objects can cover part of the image and may need to be removed.

Tell the radiographer about:

Bring any brace or splint instructions you have been given. Do not remove a cast or medical support unless the imaging team asks you to.

- Any possibility of pregnancy
- Recent X-rays or other imaging of the same area
- Previous fractures, operations, implants, or joint replacements
- Difficulty standing, lying flat, or moving the injured area

What happens during the test

A radiographer, a healthcare professional trained in medical imaging, will position the body part between the X-ray machine and an image detector. Depending on the area, you may sit, stand, or lie on a table.

You will usually need images from at least two angles. This helps prevent a fracture or other change from being hidden by overlapping bones. For a skeletal survey, the radiographer takes a planned set of images from different areas of your body.

You must keep still for each image. You may occasionally be asked to hold your breath for a few seconds, particularly for images near the chest or spine.

Taking an image does not hurt. Positioning can be uncomfortable if you are injured, but the radiographer will try to support the area and avoid unnecessary movement. The machine does not touch you, and no radiation remains in your body afterward.

Understanding your results

A radiologist, a doctor trained to interpret medical images, usually reviews the X-rays and sends a report to the healthcare professional who requested them.

The report may describe:

Reports often use the phrase no acute bony abnormality . This means no recent bone injury is visible. It does not rule out every possible cause of pain, including a very small fracture or an injury to cartilage, ligaments, tendons, or muscles.

There is no single normal range for an X-ray. Interpretation varies with the body area, imaging views, age, sex, pregnancy status, medicines, previous surgery, and clinical context. In children, normal growth plates can resemble fracture lines unless interpreted with age and symptoms in mind.

- A fracture and whether bone pieces have moved
- Joint alignment or dislocation
- Wear-related or inflammatory joint changes
- Areas of bone loss, thickening, or unusual growth
- Signs that could fit with infection or a tumour
- Healing around a previous fracture or operation
- Medical devices and whether their visible position is unchanged

What affects the results

Movement can blur an image. Poor positioning or an inability to obtain the required views may also hide a small fracture.

Bones overlap on a two-dimensional X-ray. A problem can therefore sit behind another bone and be difficult to see. Casts, thick dressings, jewellery, clothing fasteners, and other metal objects can obscure detail or create misleading shadows.

Body size and the thickness of the area being examined affect how clearly structures appear. The radiographer adjusts the equipment, but some fine detail may remain harder to assess.

Old fractures, normal anatomical variations, growth plates, previous surgery, and implanted hardware can resemble or hide a new problem. Earlier images are useful because they show whether a finding is new or unchanged.

Eating, coffee, exercise, time of day, and a recent blood transfusion do not directly change what a skeletal X-ray shows. Medicines do not usually interfere with the image itself, although some medicines can affect bones over time. Pregnancy does not make the image inaccurate, but it affects how the need for radiation is assessed.

Accuracy and limitations

X-rays are good at finding many displaced fractures and showing bone alignment. However, no X-ray finds every problem. Small, stress-related, or recently formed fractures may not be visible, particularly in areas where bones overlap. A repeat X-ray after some healing has occurred may make a previously hidden fracture easier to see.

An X-ray can also appear abnormal when there is no new disease or injury. Old damage, harmless bone variants, growth plates, and image artefacts may be mistaken for a current

problem. The radiologist reduces this risk by reviewing several views, your history, and previous images.

Another test may be more useful when:

A normal X-ray does not always explain ongoing pain. Your symptoms and examination remain important when deciding whether further imaging is needed.

- CT is needed for detailed pictures of a complex fracture
- MRI is needed for bone marrow, hidden fractures, discs, ligaments, or tumours
- Ultrasound is needed for some tendon, muscle, or joint problems
- DXA scanning is needed to measure bone mineral density

Risks and complications

A skeletal X-ray uses a low dose of ionising radiation. The exposure varies with the body area and number of images. Imaging teams limit it to what is needed for a useful examination.

The test is painless and does not usually cause complications. Positioning may briefly increase pain around an injury, but the radiographer can help support the area.

Pregnancy requires extra consideration because a developing baby is more sensitive to radiation. This does not mean a necessary X-ray must always be avoided; the imaging team weighs the expected benefit and can modify the examination when appropriate.

What happens next

For an uncomplicated outpatient X-ray, the report may be available the same day or within several days. Timing varies by imaging service and by how urgently the result is needed. The professional who requested the test should explain the result and whether you need treatment, repeat imaging, or another type of scan.

Routine follow-up is appropriate if your report shows no urgent problem but pain, swelling, or reduced movement continues. A hidden fracture or soft-tissue injury may need reassessment.

Seek urgent medical care after an injury if pain or swelling is rapidly worsening, you cannot use the limb, or numbness or weakness develops. Go to emergency care for an obviously deformed limb, exposed bone, uncontrolled bleeding, or a limb that becomes pale, blue, or cold. These symptoms relate to the underlying injury, not to the X-ray.

Common questions

Can I drink coffee before a skeletal X-ray?

Yes. Coffee and other drinks do not affect an ordinary bone X-ray. Different instructions may apply if another test is scheduled at the same appointment.

Can I eat before the test?

Yes. Fasting is not needed for standard skeletal radiography.

Does the time of day matter?

No. Bone X-rays can be taken at any time. Appointment timing may be influenced by urgency or access to specialist staff.

Can I exercise beforehand?

Usually, yes. Exercise does not change the X-ray image, but avoid activity that worsens a suspected injury.

Do I need to remove my jewellery?

You only need to remove items that could overlap the area being imaged. The radiographer will tell you what to take off.

Will I be radioactive afterward?

No. X-rays pass through your body during the image and do not remain there. You can safely be around children and pregnant people afterward.

Sources

- American College of Radiology and Radiological Society of North America. Bone X-ray (Radiography) . RadiologyInfo.org
- U.S. Food and Drug Administration. Medical X-ray Imaging
- U.S. Food and Drug Administration. Pediatric X-ray Imaging
- International Atomic Energy Agency. Radiation Protection of Patients: Radiography
- American College of Radiology. ACR-SPR Practice Parameter for General Radiography