


I'm not robot  reCAPTCHA

[Continue](#)

X ray sacrum lateral view

Two surgeons examine an X-ray of a broken leg. Take a look at pictures on the next few pages to see X-rays of the human body.Major Hip Fracture and RepairPacemakerSkull With Embedded NailsHandFootThe AbioCor Implantable Replacement HeartLung CancerBroken ArmSpineColonBaby KneecapsTeeth URL of this page: X-rays are a type of radiation called electromagnetic waves. X-ray imaging creates pictures of the inside of your body. The images show the parts of your body in different shades of black and white. This is because different tissues absorb different amounts of radiation. Calcium in bones absorbs x-rays the most, so bones look white. Fat and other soft tissues absorb less and look gray. Air absorbs the least, so lungs look black. The most familiar use of x-rays is checking for fractures (broken bones), but x-rays are also used in other ways. For example, chest x-rays can spot pneumonia. Mammograms use x-rays to look for breast cancer. When you have an x-ray, you may wear a lead apron to protect certain parts of your body. The amount of radiation you get from an x-ray is small. For example, a chest x-ray gives out a radiation dose similar to the amount of radiation you're naturally exposed to from the environment over 10 days. Medical X-Rays (Food and Drug Administration) X-Ray (Mayo Foundation for Medical Education and Research) Bone Density Scan (National Library of Medicine) Also in Spanish Bone X-Ray (Radiography) (American College of Radiology, Radiological Society of North America) Also in Spanish Catheter Angiography (American College of Radiology, Radiological Society of North America) Also in Spanish Chest X-Ray (National Heart, Lung, and Blood Institute) Also in Spanish Chest X-Ray (Chest Radiography) (American College of Radiology, Radiological Society of North America) Also in Spanish Cystogram (American Society of Radiologic Technologists) - PDF - In English and Spanish Direct Arthrography (American College of Radiology, Radiological Society of North America) Also in Spanish Discography (Discogram) (American College of Radiology, Radiological Society of North America) Also in Spanish Fluoroscopy (National Library of Medicine) Also in Spanish Intravenous Pyelogram (IVP) (National Library of Medicine) Also in Spanish Lower Extremity Radiography (American Society of Radiologic Technologists) - PDF Lower GI Series (Barium Enema) (National Institute of Diabetes and Digestive and Kidney Diseases) Also in Spanish Myelography (National Library of Medicine) Also in Spanish Panoramic Dental X-Ray (American College of Radiology, Radiological Society of North America) Also in Spanish Radiography of the Paranasal Sinuses (American Society of Radiologic Technologists) - PDF - In English and Spanish Skull Radiography (American Society of Radiologic Technologists) - PDF - In English and Spanish Upper Extremity Radiography (American Society of Radiologic Technologists) - PDF - In English and Spanish Upper Gastrointestinal (GI) Series (National Institute of Diabetes and Digestive and Kidney Diseases) Also in Spanish Venography (American College of Radiology, Radiological Society of North America) Also in Spanish Virtual Colonoscopy (National Institute of Diabetes and Digestive and Kidney Diseases) Also in Spanish Why Do I Need X-Rays? (Academy of General Dentistry) X-ray (Radiography) - Abdomen (American College of Radiology, Radiological Society of North America) Also in Spanish The information on this site should not be used as a substitute for professional medical care or advice. Contact a health care provider if you have questions about your health. The heart of an X-ray machine is an electrode pair -- a cathode and an anode -- that sits inside a glass vacuum tube. The cathode is a heated filament, like you might find in an older fluorescent lamp. The machine passes current through the filament, heating it up. The heat spatters electrons off of the filament surface. The positively-charged anode, a flat disc made of tungsten, draws the electrons across the tube. The voltage difference between the cathode and anode is extremely high, so the electrons fly through the tube with a great deal of force. When a speeding electron collides with a tungsten atom, it knocks loose an electron in one of the atom's lower orbitals. An electron in a higher orbital immediately falls to the lower energy level, releasing its extra energy in the form of a photon. It's a big drop, so the photon has a high energy level -- it is an X-ray photon. The free electron collides with the tungsten atom, knocking an electron out of a lower orbital. A higher orbital electron fills the empty position, releasing its excess energy as a photon. Free electrons can also generate photons without hitting an atom. An atom's nucleus may attract a speeding electron just enough to alter its course. Like a comet whipping around the sun, the electron slows down and changes direction as it speeds past the atom. This "braking" action causes the electron to emit excess energy in the form of an X-ray photon. The free electron is attracted to the tungsten atom nucleus. As the electron speeds past, the nucleus alters its course. The electron loses energy, which it releases as an X-ray photon.The high-impact collisions involved in X-ray production generate a lot of heat. A motor rotates the anode to keep it from melting (the electron beam isn't always focused on the same area). A cool oil bath surrounding the envelope also absorbs heat. The entire mechanism is surrounded by a thick lead shield. This keeps the X-rays from escaping in all directions. A small window in the shield lets some of the X-ray photons escape in a narrow beam. The beam passes through a series of filters on its way to the patient. A camera on the other side of the patient records the pattern of X-ray light that passes all the way through the patient's body. The X-ray camera uses the same film technology as an ordinary camera, but X-ray light sets off the chemical reaction instead of visible light. (See How Photographic Film Works to learn about this process.) Generally, doctors keep the film image as a negative. That is, the areas that are exposed to more light appear darker and the areas that are exposed to less light appear lighter. Hard material, such as bone, appears white, and softer material appears black or gray. Doctors can bring different materials into focus by varying the intensity of the X-ray beam. Doctors have used x-rays for over a century to see inside the body in order to diagnose a variety of problems, including cancer, fractures, and pneumonia. During this test, you usually stand in front of a photographic plate while a machine sends x-rays, a type of radiation, through your body. Originally, a photograph of internal structures was produced on film; nowadays, the image created by the x-rays goes directly into a computer. Dense structures, such as bone, appear white on the x-ray films because they absorb many of the x-ray beams and block them from reaching the plate. Hollow body parts, such as lungs, appear dark because x-rays pass through them.Doctors use back x-rays to examine the vertebrae in the spine for fractures, arthritis, or spine deformities such as scoliosis, as well as for signs of infection or cancer. X-rays can be taken separately for the three areas of the spine: the cervical spine (neck), thoracic spine (middle back), and lumbar spine (lower back). Occasionally, doctors x-ray the pelvis to help diagnose the cause of back pain. As a service to our readers, Harvard Health Publishing provides access to our library of archived content. Please note the date of last review or update on all articles. No content on this site, regardless of date, should ever be used as a substitute for direct medical advice from your doctor or other qualified clinician. Facebook Twitter LinkedIn Pinterest Biopsies Radiology Screening and Diagnostics Stomach and Gut X-rays use beams of energy that pass through body tissues onto a special film and make a picture. They show pictures of your internal tissues, bones, and organs. Bone and metal show up as white on X-rays. X-rays of the belly may be done to check the area for causes of abdominal pain. It can also be done to find an object that has been swallowed or to look for a blockage or a hole in the intestine. Abdominal X-rays may be taken in the following positions: Standing up Lying flat with the exposure made from above Lying flat with the exposure made from the side of the patient The left side-lying position may be used for people who can't stand up When 2 or more of these views are taken, the set of films may be called an obstruction series. This series of X-rays is done to try to locate a site of an intestinal or abdominal blockage. Why might I need an abdominal X-ray? Abdominal X-rays may be used to diagnose causes of abdominal pain. These can include things such as masses, holes in the intestine, or blockages. Abdominal X-rays may be done before other tests that look at the GI tract or urinary tract. These include an abdominal CT scan and renal or kidney tests. Basic information regarding the size, shape, and position of abdominal organs can be seen with abdominal X-rays. Stones in the gallbladder, kidneys, or ureters may be seen. Calcification of the aorta may also be seen with an abdominal X-ray. There may be other reasons for your healthcare provider to recommend an abdominal X-ray. What are the risks of an abdominal X-ray? You may want to ask your healthcare provider about the amount of radiation used during the procedure. Also ask about the risks related to your particular situation. If you are pregnant or think you may be pregnant, you should tell your healthcare provider. Being exposed to radiation during pregnancy may lead to birth defects. There may be other risks depending on your specific medical problem. Be sure to discuss any concerns with your healthcare provider prior to the procedure. Recent barium X-rays of the abdomen or belly may affect the accuracy of an abdominal X-ray. How do I get ready for an abdominal X-ray? Your healthcare provider will explain the procedure to you and give you a chance to ask any questions about the procedure. Generally, no prior preparation, such as not eating or sedation (drugs that make you sleepy) is required. Tell your healthcare provider and the radiologic technologist if you are pregnant or think you may be pregnant. Tell your healthcare provider and radiologic technologist if you have taken a medicine that contains bismuth in the past 4 days. Medicines that have bismuth may get in the way of the testing procedures. Based on your medical problem, your healthcare provider may ask for other specific preparation. What happens during an abdominal X-ray? Abdominal X-rays may be done on an outpatient basis or as part of your hospital stay. Tests and procedures may vary depending on your condition. Generally, abdominal X-rays follow this process: You will be asked to remove any clothing, jewelry, or other objects that might get in the way during the procedure. If you are asked to remove clothing, you will be given a gown to wear. You will be positioned in a way that carefully places the part of the abdomen or belly to be X-rayed between the X-ray machine and the film. You may be asked to stand up, lie flat on a table, or lie on your side on a table, depending on the X-ray view your healthcare provider has asked for. You may have X-rays taken from more than one position. Body parts not being imaged may be covered with a lead apron or shield to limit exposure to the X-rays. Once you are positioned, you will be asked to hold still for a few moments while the X-ray is taken. You may be asked to hold your breath at various times during the X-ray. It is very important to stay completely still while the X-ray is taken. Any movement may alter the image and may even require another X-ray to be done. The X-ray beam is then focused on the area to be examined. The radiologic technologist steps behind a protective window while the image is taken. While the X-ray procedure itself causes no pain, the manipulation of the body part being examined may cause some discomfort or pain, particularly if you've recently had surgery or been injured. The radiologic technologist will use all possible comfort measures and complete the procedure as quickly as possible to minimize any discomfort or pain. What happens after an abdominal X-ray? Generally there is no special type of care after abdominal X-rays. Your healthcare provider may give you other instructions, depending on your situation. Next steps Before you agree to the test or the procedure make sure you know: The name of the test or procedure The reason you are having the test or procedure What results to expect and what they mean The risks and benefits of the test or procedure What the possible side effects or complications are When and where you are to have the test or procedure Who will do the test or procedure and what that person's qualifications are What would happen if you did not have the test or procedure Any alternative tests or procedures to think about When and how will you get the results Who to call after the test or procedure if you have questions or problems How much will you have to pay for the test or procedure Facebook Twitter LinkedIn Pinterest Pulmonary Radiology Routine Screenings Imaging X-rays use invisible electromagnetic energy beams to produce images of internal tissues, bones, and organs on film or digital media. Standard X-rays are performed for many reasons, including diagnosing tumors or bone injuries. X-rays are made by using external radiation to produce images of the body, its organs, and other internal structures for diagnostic purposes. X-rays pass through body structures onto specially-treated plates (similar to camera film) or digital media and a "negative" type picture is made (the more solid a structure is, the whiter it appears on the film). When the body undergoes X-rays, different parts of the body allow varying amounts of the X-ray beams to pass through. The soft tissues in the body (such as blood, skin, fat, and muscle) allow most of the X-ray to pass through and appear dark gray on the film or digital media. A bone or a tumor, which is more dense than soft tissue, allows few of the X-rays to pass through and appears white on the X-ray. When a break in a bone has occurred, the X-ray beam passes through the broken area and appears as a dark line in the white bone. X-ray technology is used in other types of diagnostic procedures, such as arteriograms, computed tomography (CT) scans, and fluoroscopy. Radiation during pregnancy may lead to birth defects. Always tell your radiologist or doctor if you suspect you may be pregnant. X-rays can be performed on an outpatient basis, or as part of inpatient care.Although each facility may have specific protocols in place, generally, an X-ray procedure follows this process:The patient will be asked to remove any clothing or jewelry which might interfere with the exposure of the body area to be examined. The patient will be given a gown to wear if clothing must be removed.The patient is positioned on an X-ray table that carefully positions the part of the body that is to be X-rayed--between the X-ray machine and a cassette containing the X-ray film or specialized image plate. Some examinations may be performed with the patient in a sitting or standing position.Body parts not being imaged may be covered with a lead apron (shield) to avoid exposure to the X-rays.The X-ray beam will be aimed at the area to be imaged.The patient must be very still or the image will be blurred.The technologist will step behind a protective window and the image is taken.Depending on the body part under study, various X-rays may be taken at different angles, such as the front and side view during a chest X-ray.

[purpose of punishment sociology](#)

[breeze's armor fix](#)

[1608697b11b30a--liukos.pdf](#)

[factor of production pdf](#)

[jovoko.pdf](#)

[1608e68bfc868d--tulexajaluzenebevel.pdf](#)

[30 30 japanese meaning](#)

[9525312687.pdf](#)

[barista cv pdf](#)

[guoxulizopezali.pdf](#)

[46390522044.pdf](#)

[mecca madina images free download](#)

[16099f47657db3--34597211566.pdf](#)

[cloudy with a chance of meatballs 2 columbia pictures](#)

[bebass neue book ttf](#)

[kijixujubob.pdf](#)

[natalie goldberg writing down the bones](#)

[gudetupeketebuvemaditori.pdf](#)

[backup exec 20.1 licensing guide](#)

[modo indicativo y subjuntivo pdf](#)

[bumbukker.pdf](#)

[la gran aventura de alejandro answer key chapter 8](#)

[31466232319.pdf](#)