Body Imaging Breakdown

Methods radiologists use to see what’s happening inside your body.

X-Rays
• Send electromagnetic radiation through the body, which is absorbed differently based on tissue density.
• Create a 2-D image of the inside of the body.
• Commonly used to look at bones for fractures, or the chest for infections or other problems, like fluid.
• Require patient to wear lead shield to protect the rest of the body from radiation.

Ultrasound
• Sends high-frequency soundwaves through the body that are reflected differently depending on tissue density.
• Creates a moving 3-D image to show how organs and fluids are moving.
• Commonly used during pregnancy to view fetus, or to look at abdominal organs.
• Can be used on the heart (echocardiogram) to see how blood is moving.
• Involves a wand-like instrument called a transducer, and a water-based gel applied to the skin.

Computed Tomography (CT) Scans
• 360-degree X-rays.
• Create a 3-D image of the inside of the body through cross sections, or thin slices.
• Commonly used for head injuries or abdominal issues, long-term monitoring of head issues and vision problems, and for early detection of lung cancer in people who smoke.
• Aided by intravenous and oral dye to help provide contrast between normal and abnormal tissues and structures.
• Are typically the first line of radiology: If CT scans don't give enough detail, MRIs are used next.

Magnetic Resonance Imaging (MRI)
• Involves magnetic fields and radio frequencies to create clear and detailed images of the body, which physicians read in cross sections.
• Commonly used for musculoskeletal injuries, abnormalities in the spine and head injuries.
• Often involve oral or IV dye to increase contrast of images.

Positron Emission Tomography (PET) Scans
• Involve a radioactive tracer that is usually high in sugar.
• Tracer is administered orally or through an IV, and then scan is performed to show problems at the cellular level.
• Commonly used to detect cancerous growths. (Cancer and abnormal structures eat up a lot of sugar, and the tracer will light up in those areas.)