Ultrasound - Musculoskeletal

Ultrasound imaging uses sound waves to produce pictures of muscles, tendons, ligaments and joints throughout the body. It is used to help diagnose sprains, strains, tears and other soft tissue conditions. Ultrasound is safe, noninvasive and does not use ionizing radiation.

This procedure requires little to no special preparation. Leave jewelry at home and wear loose, comfortable clothing. You may be asked to wear a gown.

What is Ultrasound Imaging of the Musculoskeletal System?

Ultrasound is safe and painless, and produces pictures of the inside of the body using sound waves. Ultrasound imaging, also called ultrasound scanning or sonography, involves the use of a small transducer (probe) and ultrasound gel placed directly on the skin. High-frequency sound waves are transmitted from the probe through the gel into the body. The transducer collects the sounds that bounce back and a computer then uses those sound waves to create an image. Ultrasound examinations do not use ionizing radiation (as used in x-rays), thus there is no radiation exposure to the patient. Because ultrasound images are captured in real-time, they can show the structure and movement of the body's internal organs, as well as blood flowing through blood vessels.

Ultrasound imaging is a noninvasive medical test that helps physicians diagnose and treat medical conditions.

Ultrasound images of the musculoskeletal system provide pictures of muscles, tendons, ligaments, joints and soft tissue throughout the body.

What are some common uses of the procedure?

Ultrasound images are typically used to help diagnose:

- tendon tears, or tendinitis of the rotator cuff in the shoulder, Achilles tendon in the ankle and other tendons throughout the body.
- muscle tears, masses or fluid collections.
- ligament sprains or tears.
- inflammation or fluid (effusions) within the bursae and joints.
- early changes of rheumatoid arthritis.
- nerve entrapments such as carpal tunnel syndrome.
- benign and malignant soft tissue tumors.
- ganglion cysts.
- hernias.
- foreign bodies in the soft tissues (such as splinters or glass).

- dislocations of the hip in infants.
- fluid in a painful hip joint in children.
- neck muscle abnormalities in infants with torticollis (neck twisting).
- soft tissue masses (lumps/bumps) in children.

What will I experience during and after the procedure?

Ultrasound examinations are painless and easily tolerated by most patients.

Musculoskeletal ultrasound examination is usually completed within 15 to 30 minutes but may occasionally take longer.

When the examination is complete, you may be asked to dress and wait while the ultrasound images are reviewed.

After an ultrasound examination, you should be able to resume your normal activities immediately.

What are the benefits vs. risks?

Benefits

- Most ultrasound scanning is noninvasive (no needles or injections).
- Occasionally, an ultrasound exam may be temporarily uncomfortable, but it is almost never painful.
- Ultrasound is widely available, easy-to-use and less expensive than other imaging methods.
- Ultrasound imaging is extremely safe and does not use any ionizing radiation.
- Ultrasound scanning gives a clear picture of soft tissues that do not show up well on x-ray images.
- Ultrasound provides real-time imaging, making it a good tool for guiding minimally invasive procedures such as needle biopsies and fluid aspiration.
- Patients with cardiac pacemakers and certain types of metallic implants or fragments in the body cannot be safely exposed to the strong magnetic field required for magnetic resonance imaging (MRI); however, patients can safely receive ultrasound imaging.
- Ultrasound is also an excellent alternative to MRI for claustrophobic patients.
- Compared to MRI, ultrasound may provide greater internal detail when assessing soft tissue structures such as tendons and nerves.
- Because ultrasound images are captured in real time, they can show the movement of a soft tissue structure such as a tendon, joint or an extremity.

- Ultrasound imaging is faster than MRI and does not require the patient to remain completely still, allowing infants to be imaged without sedation.
- The hip joints of infants, unlike those of adults, are largely made of cartilage. Ultrasound is able to clearly see cartilage.

Risks

- For standard diagnostic ultrasound, there are no known harmful effects on humans.