

Ask *the* Expert

Technology in Orthopedic Care

Technology is a common theme when discussing the care provided at NEA Baptist. In the orthopedic care setting, technology such as musculoskeletal ultrasound provides many benefits to both the patient and doctor. We continue to seek out and utilize new technology like this that helps provide safer, more convenient and better care.

What is musculoskeletal ultrasound ?

Let's get the basics out of the way. Musculoskeletal, as the name implies, refers to the muscles and the skeleton or bones in our body.

Ultrasound imaging involves the use of a small probe and ultrasound gel placed directly on the skin. High frequency sound waves are transmitted from the probe through the gel and into the body. The waves are then bounced back to the probe and processed by a computer to create an image or picture. Basically, the same technology that has been used to look at developing babies during pregnancy.

How safe is ultrasound ?

Extremely safe. Ultrasound does not use any radiation as used in x-rays and CT scans.

What are some common uses for ultrasound?

Ultrasound images can help diagnose :

- Tendon tears, or tendinitis in tendons such as the rotator cuff of the shoulder or the Achilles' tendon of the ankle
- Muscle tears, masses or fluid collections
- Ligament sprains or tears
- Inflammation or fluid (effusions) within the bursa and joints
- Ganglion cysts
- Foreign bodies in soft tissues (such as splinters or glass)

What are some of the advantages or benefits of musculoskeletal ultrasound imaging?

- Ability to image in real time and see structures move dynamically
- Able to guide procedures such as aspirations and injections
- Can interact with the patient while imaging
- Seeing the structures can help patients better understand the diagnosis

- Enables rapid examination of the "normal" extremity for comparison
- No known reasons for not taking the exam, whereas patients with pacemakers or certain metal implants can not have studies like an MRI scan

What are some procedures that can be performed under ultrasound guidance ?

- Guided injections of corticosteroids or hyaluronic acid are the most commonly performed procedures in the orthopedic setting. Several studies have shown increased accuracy utilizing ultrasound and some studies have shown better short term response to the injections.
- Injections of PRP (platelet rich plasma) into damaged tendons with the ability to debride small spurs
- Percutaneous tennis elbow release
- Intra articular hip injections can now be performed in the office and not referred out

What are some limitations with musculoskeletal ultrasound?

Unlike MRI, ultrasounds can not penetrate bone to

"see" inside joints. So, the meniscus, the joint surfaces and deep ligaments can not be seen.

It is not as good as x-ray or CT for looking at bones.

What about the future of ultrasound in musculoskeletal imaging?

The future is incredibly bright. The use of ultrasound is increasing in orthopedic surgeons' offices around the world.

We are the first in the region to have a dedicated machine in our office. The relative ease of performing an exam, the low risk, the low cost and the immediate images generated will help improve our delivery of superior orthopedic care.

With the advancement of many "regenerative" products on the horizon, ultrasound guided placement of these substances will most likely be at the forefront of their delivery into the body.

There are many other ultrasound guided procedures that are in the early stages of development. So, our implementation and use of the ultrasound will position the orthopedic surgeons at NEA Baptist Clinic to provide leading edge technology now and in the future.



Jason Brandt, MD
Orthopedic Surgery