**Ultrasound**



Therapeutic ultrasound is a treatment modality commonly used in physical therapy. It is used to provide deep heating to soft tissues in the body. These tissues include muscles, tendons, joints, and ligaments.

**What Does Ultrasound Do?**

Therapeutic ultrasound is used primarily for two different effects: the deep heating treatment and non-thermal uses.

**Deep Heating Effects**

Ultrasound is often used to provide deep heating to soft tissue structures in the body. Deep heating tendons, muscles, or ligaments increases circulation to those tissues, which is thought to help the healing process. Increasing tissue temperature with ultrasound is also used to help decrease pain.

Deep heating can be used to increase the "stretchiness" of muscles and tendons that may be tight.

Two types of cavitation include stable and unstable cavitation. Stable cavitation is desired when your physical therapist is applying ultrasound to your body. Unstable cavitation can be dangerous to your body's tissues, and your physical therapist will ensure that this does not occur during the application of ultrasound.

**How Does Ultrasound Work?**

ultrasound unit is a small crystal. When an electrical charge is applied to this crystal, it vibrates rapidly, creating piezoelectric waves.

The ultrasound wave then enters into your injured tissues during application of the modality. This increases blood flow and cavitation, leading to the theorized benefits of the treatment.

**How Is Ultrasound Applied?**

A small amount of gel is applied to the particular body part; then your physical therapist slowly moves the sound head in a small circular direction on your body.

Your physical therapist may use ultrasound gel combined with a topical medication to help treat inflammation around soft tissue in the body. This process is called phonophoresis.

**Contraindications**

There are some instances where you should not use ultrasound at all. These contraindications to ultrasound may include:

Over open wounds

Over metastatic lesions or any active area of cancer

Over areas of decreased sensation

Over parts of the body with metal implants, like in a total knee replacement of lumbar fusion

Near or over a pacemaker

Pregnancy

Around the eyes, breasts, or sexual organs

Over fractured bones

Near or over an implanted electrical stimulation device

Over active epiphyses in children

Over an area of acute infection

Common Injuries Treated

Usually, orthopedic injuries are treated with ultrasound. These may include:

Bursitis

Tendonitis

Muscle strains and tears

Frozen shoulder

Sprains and ligament injuries

Joint contracture or tightness

Generally speaking, any soft-tissue injury in the body may be a candidate for ultrasound therapy. Your physical therapist may use ultrasound for low back pain, neck pain, rotator cuff tears, knee meniscus tears, or ankle sprains.

**Ultrasound for Chronic Pain**

There is some evidence that if you have chronic pain, you may benefit from ultrasound treatments. It is thought that the ultrasound waves help improve tissue extensibility and circulation, leading to increased mobility and, ultimately, decreased pain.