

Therapeutic Ultrasound

The effects of therapeutic ultrasound are still being disputed. To date, there is still very little evidence to explain how ultrasound causes a therapeutic effect in injured tissue. Nevertheless practitioners worldwide continue to use this treatment modality relying on personal experience rather than scientific evidence. Below are a number of the theories by which ultrasound is proposed to cause a therapeutic effect.

Thermal Effect:

As the ultrasound waves pass from the treatment head into the skin they cause the vibration of the surrounding tissues, particularly those that contain collagen. This increased vibration leads to the production of heat within the tissue. In most cases this cannot be felt by the patient themselves. This increase in temperature may cause an increase in the extensibility of structures such as ligaments, tendons, scar tissue and fibrous joint capsules. In addition, heating may also help to reduce pain and muscle spasm and promote the healing process.

Effects on the Inflammatory and Repair Processes:

One of the greatest proposed benefits of ultrasound therapy is that it is thought to reduce the healing time of certain soft tissue injuries.

- Ultrasound is thought to accelerate the normal resolution time of the inflammatory process by attracting more mast cells to the site of injury.
- Ultrasound may also stimulate the production of more collagen- the main protein component in soft tissue such as tendons and ligaments. Hence ultrasound may accelerate the proliferative phase of tissue healing.
- Ultrasound is thought to improve the extensibility of mature collagen and so can have a positive effect to on fibrous scar tissue which may form after an injury.