Physics of Medical Devices

fourth lecture

Shortwave Diathermy

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Third Stage

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Shortwave Diathermy

Is Shortwave Diathermy Right for You?

Electromagnetic waves are the basis of Pulsed Shortwave Diathermy. These waves create heat and increase the circulation within the body's tissues. In doing so, pain and inflammation can be significantly reduced. Joint stiffness and muscle spasms can also be alleviated with the help of shortwave diathermy.

What does Shortwave Diathermy treat?

Shortwave diathermy is effective for soft tissue injuries, arthritis, and wounds. There are other conditions that shortwave diathermy has been known to treat as well.

While it may not be a well-known form of treatment, it is highly effective and used by many professional athletes. In fact, we actually use the identical devices as many Arizona professional sports teams, including the Diamondbacks, Cardinals, and the Coyotes.

If you'd like to learn more about shortwave diathermy and how it may benefit you, don't hesitate to request a consultation at MDM Physical Therapy today.

What type of shortwave diathermy equipment is used at MDM?

At **MDM Physical Therapy** we offer treatment with the all-new Shortwave Diathermy System. With our evidence-based clinical protocols, on-screen tuning, and a high-efficiency output, the allows us to achieve the best outcomes for our patients. The helps to increase circulation and reduce pain and inflammation, decrease joint stiffness, relieve muscle spasms and increase blood flow. Applied to the patient through a large applicator head, shortwave diathermy may be used to assist in the treatment of soft tissue injuries, slow-healing wounds and arthritis.

What should I know about Shortwave Diathermy?

Shortwave diathermy uses electromagnetic energy that flows in continuous energy waves. In addition to the aforementioned conditions that it treats, it’s often used for tenosynovitis, sprains, strains, and bursitis.

As defined by ***Healthline***,

“Shortwave diathermy uses high-frequency electromagnetic energy to generate heat. It may be applied in pulsed or continuous energy waves. It has been used to treat pain from kidney stones, and pelvic inflammatory disease. It’s commonly used for conditions that cause pain and muscle spasms.”

This safe, effective, and natural form of treatment produces heat deep inside the body’s tissues. It can penetrate as far as two inches deep below the skin’s surface.

The waves produced from shortwave diathermy actually generate heat from the body tissue itself. Specifically, diathermy treatment dilates the blood cells and stimulates white cell blood production.

The benefits of diathermy include pain relief, accelerated healing, increased blood flow, increased range of motion, and improved mobility. Treating the targeted areas of damaged tissue with heat increases blood flow and makes the connective tissue more flexible.

Find relief today

Are you living with a condition that’s bringing you pain? If so, shortwave diathermy may be the answer for you. **Contact MDM Physical Therapy** today at Mesa, AZ Center to schedule a consultation with one of our physical therapists and get started on the first steps toward relief.

Diathermy

What is diathermy?

Diathermy is a therapeutic treatment most commonly prescribed for muscle and joint conditions. It uses a high-frequency electric current tThe heat can help with various processes, including:

- increasing blood flow
- relieving pain
- improving the mobility of tissues as they heal

stimulate heat generation within body tissues.

What are the types of diathermy?

There are three main types of diathermy: shortwave, microwave, and ultrasound.

Shortwave

Shortwave diathermy uses high-frequency electromagnetic energy to generate heat. It may be applied in pulsed or continuous energy waves. It has been used to treat pain from kidney stones, and pelvic inflammatory disease. It’s commonly used for conditions that cause pain and muscle spasms such as:

- sprains
- strains

- bursitis
- tenosynovitis

How does diathermy work?

Diathermy uses high-frequency electric current to produce heat deep inside a targeted tissue. It can reach areas as deep as two inches beneath the skin’s surface.

The diathermy machine does not apply heat directly to the body. Instead, the waves generated by the machine allow the body to generate heat from within the targeted tissue.

Diathermy is usually part of a complete physical therapy or rehabilitative regimen. Frequency and length of treatments vary.

What are the benefits of diathermy?

Treating injuries with heat can increase blood flow and make connective tissue more flexible. It can also help minimize inflammation and reduce the incidence of edema, or fluid retention.

By increasing blood flow to the site of an injury, the deep heat generated with diathermy can accelerate healing.

Diathermy is used to treat the following conditions:

- arthritis
- back pain
- fibromyalgia
- muscle spasms
- myositis
- neuralgia
- sprains and strains
- tenosynovitis
- tendonitis
- bursitis

However, there is still not a lot of evidence to prove that diathermy is the most effective treatment for these conditions.

What are the risks of diathermy?

The electromagnetic energy used in shortwave and microwave diathermy can cause extreme heat in metal devices such as:

- bone pins
- dental fillings
- metal sutures

This could cause burns in the tissue near the implant. The procedure should not be used over these areas to avoid the risk of burning.

During diathermy treatment, you become a part of the electrical field. Touching a bare metal object, including a metal part of the diathermy cabinet, can cause a shock or burn.

Diathermy should be avoided over open growth plates in children.

How should I prepare for diathermy?

Before a diathermy session, you must remove:

- all metal jewelry
- clothing that includes metal, such as zippers or buttons
- accessories containing metal

You may be given a gown to wear during the procedure. You also may be asked to wear goggles.