Question for fieldwork II.

What is the supporting evidence for using Diathermy in the occupational therapy profession?

The supporting evidence for short-wave Diathermy can be used to decrease pain and inflammation for short term. However many safety and practice protocols need to be followed. What I have found on Shortwave Diathermy is both supporting and contraindicated evidence.


Five different therapies were compared for women who had knee osteoarthritis; 1) shortwave diathermy, hot packs and isokinetic exercises, 2) transcutaneous electrical nerve stimulation, hot packs and isokinetic exercise, 3) ultrasound, hot packs and isokinetic exercise and 4) hot packs and isokinetic exercises only, and the fifth group was only receiving isokinetic exercises. Of these five therapies, Isokinetic exercises with the use of shortwave diathermy gave the greatest results for reduction in pain and improved functional mobility of the women studied. TENS use as a modality also provided greater mobility function in combination with isometric exercises. Muscle strengthening and stability increased with the combination of warmth of the deep tissues and isokinetic exercise compared to service hot packs and isometric exercises.

2.


Cold and heat are common types of modalities for management of pain with musculoskeletal disorders. This study showed there is evidence of using shortwave diathermy as a form of deep heat to aid in short term pain relief when increasing the functional use of a musculoskeletal injury during therapy.

3.


This study showed how joint mobilization and injuries of the wrist and elbows improved by 75% for flexion and extension after using low-watt pulsed shortwave diathermy. Restoration of joint
mobility was increased, decreasing pain, soreness and muscle spasms. The subjects of the study were able to return to functional activities with increased movement.


After having ACL surgery, there is an association with not regaining the last 5-10 degrees of flexion and extension. Hot packs warm the surface area of the tissues. However Shortwave diathermy works to heat the tissues deeper under the surface allowing for increased blood flow at the injury sights. In this trial, the warmth of the tissues using a coil shortwave diathermy and a selected set of exercises immediately following the SWD had positive results to regain the full ROM of the knee in rehabilitation. Shortwave diathermy helps increase the range of motion by increasing the blood flow to the injured area allowing for more movement and maximizing extension and flexion of the collagen and musculoskeletal area for healing.


This study focused on the safety concerns when using shortwave diathermy (SWD). SWD requires a minimum of 1 m is the required distance for safe use from other shortwave diathermies in the same area. SWD produces heat by microwave radiation. Excessive radiation exposure can occur from different metal objects in the area that may reflect the radiation. Even that of a person's wire rim glasses may deflect the radiation and injure the eyes of the patient. Another concern of using SWD is that people report heat sensation differently. A person's water content, fat content, muscle tissue, bone density, and sensory awareness can all be factors in safely administration and treatment use of shortwave diathermy.


In the United Kingdom, physical therapist are utilized for assessments of low back pain and neck pain. The results after 6 months of this study showed that using shortwave diathermy was not any more beneficial than using other modalities for treatment. 350 participants were divided into three subgroups: 1) advice and exercise, 2) advice, exercise and manual therapy, 3) advice, exercise and pulsed shortwave diathermy.

In this study there was no therapeutic benefit of using Pulsed shortwave diathermy as a treatment for osteoarthritis (OA) of the knee. Stiffness and pain were improved, however did not show that this effected the overall functional performance of the patients. 103 patients with a range age of 66- 80 years old with osteoarthritis were used in this study. The treatments were 20 minutes long/three days a week for three weeks. One group was thermal, one athermal, a third group as a sham shortwave diathermy. A WOMAC Osteoarthritis Index was used in this study. The final results of this study did not show any significant improvement of the osteoarthritis condition of the knee.


Frozen shoulder can result from an unknown cause or an injury that restricts the movement of the shoulder. Usually the process of a frozen shoulder occurs over a 1 to 3 year period. A quasi-experimental study showed that steroids in combination of another modality can decrease pain, increase range of motion, and increase functional activities that improve the patient's quality of life. Short-wave diathermy was shown to be more beneficial than home exercises. Both steroid injections and physiotherapy like short-wave diathermy was statistically better for results in treating frozen shoulder than physiotherapy alone.


To measure the pain of a trigger point, a pressure algometer was used on the subjects. Shortwave diathermy was shown to be more effective than moist heat in relieving pain in both sensitive and moderate trigger points. Moist heat worked well on sensitive trigger points but did not offer as much relief on moderate trigger points.
10.


Pulsed shortwave diathermy therapy is being studied for treatment of the thigh to decrease pain and increase healing. The purpose of the study was to understand the pulse repetition rate required for proper treatment. A relationship between skin temperatures and patient subjective sensations was found. Understanding the effects of increased pulse repetition rates to increase the temperature of the skin can result with safe application of pulsed shortwave diathermy in clinical practice.

11.


The use of shortwave diathermy was effective in treating pain for rotator cuff tendinopathy. 92 Participants filled out the QuickDash (Disabilities of the arm, shoulder and Hand Questionnaire) as a measurement to compare shortwave diathermy to subacromial corticosteroids. This single-blind randomized clinical trial after 24 weeks showed shortwave diathermy was just as effective as corticosteroid treatments.

12.


A random survey was gathered comparing 11 different modalities used by 100 specialist in rehabilitation medicine and 100 rheumatologists. The results showed an agreement between the rheumatologists and rehabilitation therapists that heat and cold therapies should be avoided when a patient has a cognitive, sensory deficit, or poor vascular circulation. The differences between rheumatologists and rehabilitation centers are which treatment works best for each individual.

13.

Shortwave diathermy was studied through a postal survey. What they found was that Ultrasound and Tens treatment was the treatment of choice. Shortwave diathermy (SWD), Continuous Shortwave diathermy (CSWD), Pulsed Shortwave diathermy (PSWD) are all common modalities used in Ireland. Safety is an important consideration when using this modality. Shortwave diathermy exposes a risk to others in the area. The radiation from shortwave diathermy can reflect off of metal items in the environment within 1 meter of the treatment area causing an unwanted higher radiation amount. Each modality was beneficial for specific management of certain conditions. For example: CWSD was beneficial for osteoarthritis and rheumatoid arthritis. PSWD was good for soft tissue injuries, swelling, and acute inflammation. What they found different in this study was the variety of duration and frequency of treatments. Each modality was rated on its effectiveness.


In this study, contraindications and safety procedures reduce the use of therapeutic diathermy in Southern areas of England and London. SWD may help with temporary pain reduction and increase the temperature of the tissue, but the safety and concerns of the outside environment, effects on staff and other people lower the application of the SWD for treatment. Many safety procedures were not followed. Concerns included administering SWD in areas where there was electromagnetic interference, such as metal chairs, heaters, and metal cabinets.


Shortwave diathermy treatments were measured after 10, 20, and 30 applications using ultrasonography. Shortwave diathermy was found to be effective in thinning the synovial fluid around the knee in people who have osteoarthritis. The warming of the tissues improved circulation, decreased pain and inflammation, thereby increasing mobility of the knee.