Therapeutic effect of SWD

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The benefits include pain control, accelerated tissue healing, decreased joint stiffness, and, if applied in conjunction
with stretching, increased joint range of motion (ROM). Because diathermy can increase the temperature of large areas of deep tissue, its use is indicated when one is trying to achieve the clinical benefits of heat in deep structures such as the hip joint or diffuse areas of the spine.

Effects on Inflammation

The dilatation of arterioles and capillaries results in an increased flow of blood to the area which increases supply of oxygen and nutritive material. This increased flow of blood enhances the supply of more antibodies and white blood cells. The dilatation of capillaries increases the exudation of fluid into the tissues and this is followed by increased absorption which along with the increased flow of blood through the area assists in the removal of waste products. These effects help to bring about the resolution of inflammation.

Effects in bacterial infections

Inflammation is the normal response of the tissues to the presence of bacteria, the principal features being vasodilatation, exudation of fluid into the tissues and an increase in the concentration of white blood cells and antibodies in the area. Heating the tissues augments these changes and so reinforces the body's normal mechanism of body dealing with the infecting organisms; therefore short wave diathermy is of value in the treatment of bacterial infections like boils, carbuncles and abscesses.

Relief of Pain

Mild degree of heating is found to be effective in relieving pain, presumably as a result of a sedative effect. It has been suggested that pain may be due to the accumulation of waste products in the tissues due to metabolism and that the increased flow of blood through the area assists in removing these substances. Strong superficial heating probably relieves pain by counter-irritation, but it is unlikely that the heating of the skin produced by short wave diathermy is great enough to have this effect. When pain is due to inflammatory
processes, resolution of the inflammation is accompanied by relief of pain. Short-wave diathermy assists in bringing about the resolution of inflammation, and so indirectly helps in relieving the pain.

Effects on muscle tissue

The heating of the tissues induces muscle relaxation, so short-wave diathermy may be used for the relief of muscle spasm associated with inflammation and trauma, usually as a preliminary in conduction with the movements. Increased efficiency of muscle action should also aid the satisfactory performance of active exercises.

Traumatic conditions

The beneficial effects of short wave diathermy on traumatic lesions are similar to those produced in inflammation. The exudation of fluid (followed by increased absorption) and the increased flow of blood through the area assist in the removal of waste products, while the improved blood supply makes available more nutritive materials, so assisting the healing processes.

Recent injuries should be treated with the same caution as acute inflammation, as excessive heating is liable to increase the exudation of fluid from the damaged vessels. Stiff joints and other after-effects of injury require stronger doses, the treatment being a preliminary to the exercise which is usually the essential part of the treatment.

Reducing healing time

To promote the healing of a wound or injured tissue, an increased blood supply to the tissues may be of benefit, provided that the vascular responses to heat to the tissues are normal.

Soft Tissue Healing

Nonthermal PSWD has been shown to increase the rate of soft tissue healing in both animal and human subjects.

Nerve Healing

Acceleration of peripheral nerve regeneration in rats and cats, and of spinal cord regeneration in cats, in response to the application of PSWD has been reported.

Bone Healing

Animal studies have shown acceleration of bone healing after application of PSWD.

Osteoarthritis Symptoms

Several studies have evaluated the effectiveness of PSWD for improving symptoms of osteoarthritis.