

Shockwave

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Extracorporeal Shockwave Therapy (ESWT) in Equine Practice

EWST is a non-invasive procedure used extensively in equine sports medicine practice for treatment for tendinitis, desmitis, osteoarthritis, deep muscle pain, and wound healing. ESWT machines use a transducer to generate pulsatile acoustic waves known as shockwaves. Shockwaves are transferred through tissue until

impeded by changes in tissue density such as a soft tissue/bone interface, at which point forces from the shock wave are imparted to the tissue.

As an equine general practitioner, the most common questions I hear from owners about ESWT regard how shockwave works and whether the treatment is effective for a specific musculoskeletal condition. Research into its healing mechanisms have shown that ESWT


increases growth factors (specifically IGF-1, VEGF, and TGF- β), which signal for increased vascularization and tissue remodelling. ESWT promotes new bone formation and recruits bone marrow stromal cells by unknown mechanisms. ESWT has not been linked to pain relief in studies evaluating its efficacy as a treatment for navicular syndrome and proximal suspensory desmitis; however, there is anecdotal evidence for its effectiveness in pain management.

Many equestrian sport regulation bodies have placed restrictions on ESWT prior to competition because of the potential for pain relief following treatment. Conflicting results found in the current research available can be partially attributed to the lack of standardized treatment protocols and set points for defining a successful outcome used in these studies.

ESWT may be indicated for a variety of tendon and ligament injuries in the horse, therefore an accurate diagnosis is required to be able to target a specific lesion. In preparation for the procedure, horses are sedated, and the skin over the area of interest is clipped, cleaned, and ultrasound gel is applied. The number of impulses per treatment varies within 1000-2000, with the energy level set between 0.2-0.4mJ/mm².

Most vets recommend three treatments at 2-3 week intervals, but this may vary depending on the condition and severity.

ESWT is one of many therapeutic options available, and other forms of rehabilitation and pain management techniques are often used in concert as part of a comprehensive rehabilitation program.

Image caption: Dr. Ryan Shoemaker DVM DACVS, boarded surgeon at Delaney Veterinary Services, performing ESWT on a horse's shoulder. 



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