

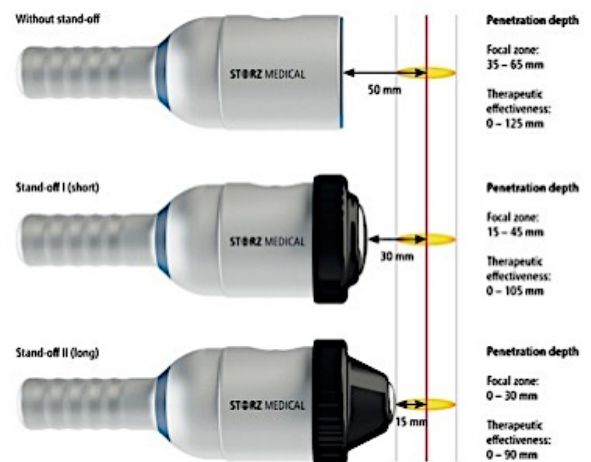
## Extracorporeal Shockwave Therapy (ESWT)



Shockwave therapy is a very useful tool in equine sports medicine and rehabilitation that can help treat acute, subacute and chronic conditions. A shockwave is a very high pressure wave that creates micro damage in the structures it is applied to. This micro damage is enough to kick start the healing process by increasing circulation, increasing growth factor levels and decreasing inflammatory mediators. For this reason, this therapy is considered pro-inflammatory and is most useful in the subacute and chronic stages of healing,

although there are certain conditions (like an acute back spasm) that can be treated earlier in the healing process. Analgesia is a side-effect of this therapy, which can be helpful in the management of painful conditions. However, due to the analgesia that it causes, there are regulations for its usage before competition. For horses showing FEI, shockwave should not be applied 5 days prior to competition; Equine Canada restricts its use for 4 days prior to competition, and USEF rules state it should not be used 3 days prior to competition.

There are two general categories of shockwave machines: radial shockwave machines and focused shockwave machines. The main difference between these two categories is the depth of penetration of the pressure wave. A radial shockwave gets absorbed in the first 30 mm (3 cm), while a focused shockwave can penetrate up to 125 mm (12.5 cm) making this the preferred type of machine for use on horses. Penetration is also impacted by the use of a stand-off, which means that by knowing the depth of the target tissue, you can more accurately treat the area desired.



Many injuries can benefit from ESWT, including:

- Tendinitis and desmitis (inflammation or tearing of tendons and ligaments)
- Insertional desmopathies (tearing of the bone-ligament interface); Proximal Suspensory Desmitis being a common example of this.
- Navicular Syndrome (caused by diverse injuries in the foot); can be done between the heels and through the frog (must be paired and soaked prior application)
- Kissing spines, Sacroiliac disease, acute muscle spasm, and other back pathologies.
- Osteoarthritis

Treatment protocols vary depending on the lesion being treated but will usually include 3-4 treatments with 10-21 days of separation to allow for the biologic effects to take place in the tissues. There are certain contraindications for this therapy, including treatment over the abdomen, thorax and reproductive organs, as well as treatment over active growth plates in young horses due to the risk of premature closure. Although shockwave therapy is relatively safe, it is also important to know that ESWT is a dose-dependent therapy, which means that using too much energy can create damage in some tissues. Tendons and ligaments are more susceptible to damage by using dosages that are too high, so care must be taken when treating these areas.