

# Practical Rehabilitation and Physical Therapy for the General Equine Practitioner



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## KEYWORDS

• Equine • Rehabilitation • Sports medicine • Physical therapy

## KEY POINTS

- Physical treatment and rehabilitation play major roles in recovery and maintenance of the equine athlete, and many therapeutic measures are accessible by the veterinarian in general practice.
- The basis for any treatment regimen is an accurate diagnosis with measurable outcome parameters.
- The general practitioner may readily use treatments from the electrophysical modality group and make recommendations for appropriate rehabilitation exercise.
- Consulting with specialist veterinarians trained in equine rehabilitation therapy or physical therapists trained in equine therapy is necessary for making appropriate treatment decisions.

Physical treatment and rehabilitation of horses is a major contributor to a successful outcome of surgical or medical therapy. It may also be the primary therapy when a horse is competing under *Federation Equestre Internationale* or other competition regulations that prohibit the use of medications.

Application of these techniques requires knowledge of indications, methods of treatment, and end points. For the general equine practitioner, rehabilitation therapy should be collaboration with a veterinarian or physical therapist trained in equine techniques. A veterinary technician trained and certified in an equine rehabilitation therapy program is also a useful resource.

The basis for any treatment regimen is an accurate diagnosis. Using lameness as an example, the practitioner must clearly identify the specific anatomic location, tissue injury, and other ancillary factors that are contributing to the gait abnormality. High-quality imaging is necessary to make the diagnosis and is used to monitor the response to treatment. For example, characteristics of the injured tissue, such as

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cross-sectional area, fiber pattern, and echogenicity, should be recorded for ultrasonographic evaluations. Other measurements may be made at the injury site and recorded for future use during rehabilitation. Examples include circumference of a swollen injury site, range of motion/degrees of flexion measured with a goniometer, and response to deep palpation over an injury site (subjective assessment or objective measurement using algometry). A complete diagnosis may require referral to an equine imaging center that has computed tomography, magnetic resonance, or scintigraphy imaging capabilities.

This article reviews common therapeutic modalities accessible to the equine practitioner.

## THERMAL THERAPY

One of the most accessible and time-tested methods of physical treatment is thermal therapy (**Table 1**). Heat or cold may be administered to horses using many modalities and can range from simply applying water from a hose to cooling tissues with compression using therapeutic boots.

### *Cold Therapy*

The major physiologic benefits of cold therapy are reduced local circulation, tissue swelling, and pain sensation.<sup>1,2</sup> These benefits are most effective early in the period following injury or surgery. The primary effect of local cold application is to constrict blood vessels and reduce tissue temperature. Reduced blood flow will reduce edema, hemorrhage, and extravasation of inflammatory cells. Cold reduces tissue metabolism and may inhibit the effect of inflammatory mediators and slow enzyme systems. Cyclical rebound vasodilatation is another response to cold therapy. After a minimum of 15 minutes of cold therapy that results in tissue temperatures from 10°C to 15°C, cycles of vasoconstriction and vasodilatation occur. Vasodilatation associated with cold therapy may help further resolve tissue edema. Analgesia is a significant effect of cold therapy.

Cold therapy is indicated in acute musculoskeletal injuries and following surgical procedures to reduce edema, slow the inflammatory response, and reduce pain. It is particularly effective during the first 24 to 48 hours after injury or surgery. Cold immersion of the distal limbs is also effective in reducing severity of laminitis by

**Table 1**  
Thermal therapy indications, methods, and physiologic responses

Therapy Type	Indications	Methods of Application	Responses to Treatment
Cold	<ul style="list-style-type: none"> <li>Acute injury (first 24–48 h)</li> <li>Pain reduction</li> </ul>	<ul style="list-style-type: none"> <li>Ice water immersion</li> <li>Ice surface application</li> <li>Cold packs</li> </ul>	<ul style="list-style-type: none"> <li>Restricts blood flow</li> <li>Reduces metabolism</li> <li>Reduces activity of inflammatory enzymes</li> <li>Reduces pain</li> </ul>
Heat	<ul style="list-style-type: none"> <li>Chronic injury (after 72 h)</li> <li>Enhance tissue stretching</li> <li>Enhance healing response</li> </ul>	<ul style="list-style-type: none"> <li>Warm water from hose</li> <li>Hot packs</li> <li>Leg sweat</li> <li>Therapeutic ultrasound</li> </ul>	<ul style="list-style-type: none"> <li>Increases blood flow</li> <li>Increases metabolism</li> <li>Increases activity of tissue enzymes</li> <li>Relaxes muscle spasm</li> <li>Reduces pain</li> <li>Increased tissue extensibility</li> </ul>

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