



Water Works: Equine Conditioning Techniques

The Educated Horseman: Management Series



Physiological conditioning is one of the key factors in obtaining peak performance in horses. Ensuring your horse is conditioned prior to competition, it is important to reduce the chance of injury and increase your opportunity for success. Basic conditioning principles require addressing multiple physical systems, including the respiratory system, cardiovascular system, muscular anatomy and the fitness of tendons, ligaments and bone.

Typical conditioning protocols for these physical systems are three to four months of slow, long-distance work followed by an additional one to two months of speed and skill training, depending upon discipline. Traditional methods of conditioning include mechanical walkers, treadmills and riding programs. Underwater treadmills and swimming programs, however, have recently become more affordable and available to the equine community.

Underwater or partially submerged treadmills combine the buoyancy of a swimming pool and the mechanical advantage of a treadmill. Two types of underwater treadmills are available. One is an in-ground unit, in which the horse walks into a treadmill that is already submerged. The other is an above-ground unit, in which the horse walks into a fiberglass tank that contains a treadmill, and then water is added. Both types of submerged treadmills are used primarily in rehabilitation.

The benefit of an underwater treadmill is that the water increases the animal's buoyancy, thereby reducing the amount of stress placed on the horse's legs and back by up to 45 percent. Research has shown that horses exercised on an underwater treadmill have an increased stride length and decreased stride frequency. This suggests that the water increases resistance and provides an effective method to increase cardiovascular, respiratory, muscle and tendon conditioning. However, although underwater treadmills are appropriate for horses returning to conditioning following an injury, they are not as effective for uninjured horses because their speed and slope settings are limited.

Swimming is an excellent conditioning activity that allows a horse to exercise in a completely buoyant environment reducing the weight-bearing activity. Swimming

has been part of conditioning programs since the early 1970s. Recent research indicates that having horses swim for five to eight minutes can increase a horse's heart rate from 34 beats per minute to 175 beats per minute, similar to the 200 beats per minute experienced by breezing a horse on the racetrack.

It is estimated that swimming a horse for 15 minutes is similar to hand-galloping a horse for five miles. Although swimming is a great conditioning technique for fitness and rehabilitation, it is not recommended for horses with back or rear limb injuries. Horses must arch their neck to breath while swimming, which in turn hollows their back out and compresses their spine. Horses also must rely heavily on their rear legs to propel them through the water, which can potentially worsen any lameness issue.

Advances in technology continue to offer unique opportunities for conditioning horses during the rehabilitation and performance phases of their careers. No one exercise can replace a traditional well-planned conditioning program; however, underwater treadmills and swimming are two additional ways to reach the level of physiological fitness and conditioning needed to increase your chances for success in the show pen.

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