

Equine Water Treadmill Exercises

Equine Hydrotherapy Working Group

Publication date:
2020

This document version is the:
Publisher's PDF, also known as Version of record

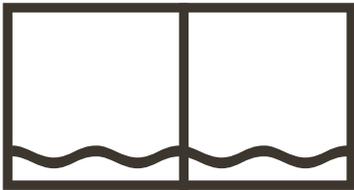
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Citation for published version (APA):
Equine Hydrotherapy Working Group (2020). *Equine Water Treadmill Exercises: A guide for users.*

Equine water treadmill exercise

A guide for users





Why use a water treadmill?

Water treadmill exercise has many potential benefits when integrated into a training or rehabilitation programme, including an increase in range of movement of lower limbs, increased lumbar flexion, decreased impact shock, and an opportunity to cross train (thereby reducing injury risk) in a controlled environment. The purpose of these guidelines is to help users achieve these benefits for their horses, whether they are using a water treadmill for training or to support a rehabilitation programme. The guidelines provide a consensus based on a combination of research studies and skilled user experience.

Key



Safety



Speed



Treadmill

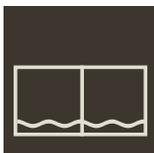


Water



Horse

General guidelines for new water treadmill users



Manufacturers will usually provide training regarding correct operation and cleaning of their machines, and may provide initial 'day 1' training regarding the introduction of horses. The best method of introducing horses to the machine can vary depending upon the type of horses being exercised, the type of machine and the environment in which the machine is used. It is good practice to seek help from an experienced user to supplement the manufacturer's training.



Horses should be suitably controlled. Horses can be worked in a headcollar or with a bit, either on a slip head or on a bridle. Whatever you choose to use should give adequate control of the horse overland whilst allowing the horse to work comfortably on the treadmill without restricting the natural movement of the head and neck.



Protective boots such as brushing boots or over reach boots are not commonly used for water treadmill exercise unless the entry/exit doors or ramps present potential hazards. Note that any equipment attached to the limbs has the potential to slip or become detached and spook the horse.



Most users wrap up the tail to keep it out of the water during exercise. This makes aftercare easier and may help keep the water clean.



It is recommended that all handlers wear appropriate Personal Protective Equipment for handling horses.



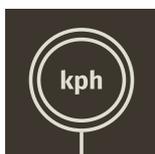
Loading and unloading procedures should be devised that either avoid or minimise the need for handlers to be in front or behind the horse whilst it is on the treadmill belt. Where possible, accustom horses to be led on and off the belt from the side.



A minimum of two handlers is recommended for safety. One person should be designated 'in charge' and this person should be responsible for the controls and keep the controls in reach throughout the session.



Ensure the horse remains straight. Be aware that horses handled from one side only will tend to bend towards the side of the handler. Keep an eye on straightness to optimise the quality of the session.



Appropriate belt speed varies according to the horse's size, stride length; joint ranges of movement, experience and capability. A good belt speed is one where the horse maintains position in the middle of the treadmill and has room for the head, neck and forelimbs to move without limitation. Ensure free movement of head, neck and forelimbs regardless of whether or not the treadmill is fitted with a breast bar or breast strap. Most horses will be comfortable walking in water at a speed below that of their walk speed overland. Find a comfortable walk speed for the horse on the dry belt (or with water below the fetlock) and as a general guide expect to reduce belt speed as water depth increases.

Introducing a horse to the water treadmill for the first time



All 'new' horses benefit from a structured period of habituation. The ideal scenario is three, short (up to 15 minute) sessions over three consecutive days. Aim to have the second session within the same week as the first session. Avoid introducing a horse if they will not be able to repeat the exercise within 14 days.



Always load according to the centre's standard operating procedures. A horse can be prepared for the first movement of the belt by gently asking them to step back and forth within the chamber; the belt can then be started as the horse is being asked to step forward.



Be aware that a horse may only notice the introduction of water once the water reaches above the level of the coronary band.



Most horses enjoy their session on the water treadmill but it is a new experience for the horse, so plenty of time should be allowed for the first session. If an owner has a highly strung horse there may be benefit to consulting a veterinary surgeon about potentially using light sedation to give the horse a relaxed first experience of the water treadmill without affecting its locomotion. Decisions regarding optimal management of the horse's first session on the water treadmill should be made following individual risk assessment for the specific horse.



For most horses, water depth can be increased slowly over the course of the first three sessions depending on the individual horse and its requirements for exercise. It would not be unusual for horses to only walk in fetlock depth water in the first session.



10-15 minutes walking in the water is sufficient for the first time. Try and finish the first session once the horse has achieved a period of relaxed, stable, rhythmical walking.



General good practice for water treadmill exercise



Ensure the horse is as clean as possible before exercise (either by brushing or washing) to help keep the water clean, paying particular attention to limbs and feet. Pick out the feet. Wash limbs off after exercise. Many users use a veterinary approved mild disinfectant to wash limbs off post exercise.



Dry the legs as much as possible after water treadmill exercise.



Horses can work shod or unshod on a water treadmill. Where fitted, check shoes are secure. Road nails may damage a treadmill belt. Any significant extensions to a shoe have the potential to influence the flight of the foot in water. If in doubt regarding suitability of shoeing, seek advice from your veterinary surgeon and farrier before exercising the horse. Pay particular attention to the condition of the feet if water treadmill exercise is used daily and/or the horse has pads fitted. Foot problems can occur if the frequency of sessions is such that the feet are never fully dry between sessions.



Check the horse for any cuts/abrasions as even water which looks clean may carry microbes which could lead to infection. For this reason horses should not undergo water treadmill exercise within four days of joint injection. Examine limbs closely for any signs of conditions such as mud fever which might be exacerbated by submersion. Daily immersion in water may also reduce the integrity of the skin and delay wound healing.



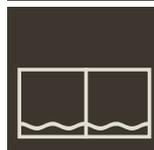
Throughout the session, keep your attention on the horse and note the movement pattern and changes in movement pattern as far as possible/practical during exercise. Base your decisions regarding speed and water depth based on the responses of the individual horse.



Even small adjustments in speed and/or depth may have a significant effect on the horse's movement. Be prepared to make alterations within an exercise session depending on the horse's responses.



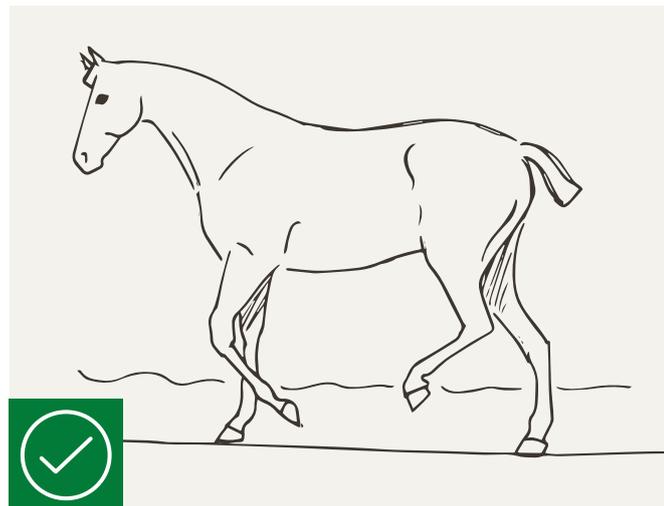
Best practice for water management is specific to each model of water treadmill. Follow your manufacturer's advice regarding water cleanliness. Where chlorinated water is used, operators should consider undertaking specific training in pool water management.



Monitoring movement on the water treadmill

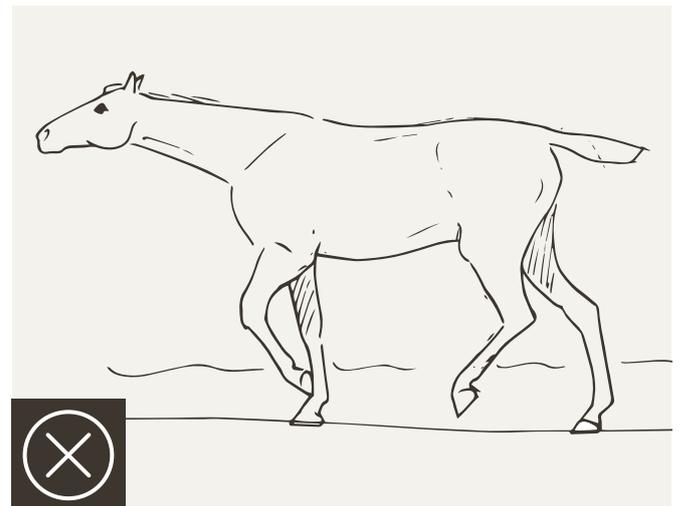
- The horse should move with a similar posture to overland locomotion; the face should be slightly in front of the vertical, with a ventroflexed (rounded) lumbar spine and the hind limbs stepping well underneath the body.
- There should be a regular rhythm to the footfalls.
- The head should be relatively still, with no excessive horizontal or vertical movements of the head or head tossing.
- The horse should be straight and not 'hanging' to one side or rolling from side to side.
- The hind limbs should be placed in the path of the forelimbs, and not increasingly to the midline of the body as the water depth is increased.
- The horse should be able to easily maintain position on the belt.
- A flat or overly extended posture – nose poking, neck outstretched, lumbar spine lowered with hind limbs trailing should be avoided.

Aim for quality of movement as indicated above. If movement quality is not attained or reduces within a session, you should consider decreasing the speed, water depth, or duration of the session.



General comments for integrating water treadmill exercise into your training or rehabilitation programme

- Water treadmill exercise provides straight line, unridden, controlled exercise and these features alone may complement your horse's normal training programme.
- Water treadmill exercise is not recommended as the sole or primary means of exercising a horse unless the horse has a specific injury that warrants it. In such instances this will normally be for a limited time period only.
- As water depth increases, drag force (limiting forward movement of the limbs) increases. Drag will also increase the faster the horse swings the limb, i.e. as stride frequency increases.
- As water depth increases, the impact shock of the limbs is reduced. As a rough guide, water up to the level of the stifle reduces impact shock by 30%.
- Water treadmill exercise in walk or trot does not normally produce high heart rates in the horse (i.e. heart rates above 150 beats/min) and does not normally make horses 'blow' or sweat in the same way fast work would. Oxygen consumption has been found to reach approximately 20% of maximum oxygen consumption with water at the height of the stifle. This does not mean the horse has not 'worked'. Whilst the heart rates observed may be similar to overland walking (or trotting if trotting in water), horses may still experience fatigue in certain muscle groups. Think of a water treadmill exercise session as equivalent to a challenging ground schooling session.



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This document provides guidelines to assist in the use of Equine Water Treadmills. It is the responsibility of the user to ensure they have taken appropriate advice from the manufacturer and utilise their professional judgement and experience when using a water treadmill. None of the contributors take any responsibility for the application of these guidelines by users.



With thanks to:

