

F&I Hydrotherapy evening - Tuesday 16th November 2021 at 7.30pm

**“The use of equine hydrotherapy in performance horses”**

Presented by Fiona Fitzgibbon BSc MIRVAP IEH

Organised by Mark Robinson BHSI

Fiona is the research and training manager for ECB equine spa and is based in Northern Ireland. She was the pioneer and manager for 2 years in Ireland's first purpose built equine rehabilitation centre with a water treadmill. Alongside her work for ECB she works as an equine hydrotherapist with international competition yards worldwide. Fiona specialises in the use of water treadmills for equine rehabilitation and performance.

Fiona began by providing background information on her experience within the industry. Fiona has worked in showjumping and eventing competition yards at international and olympic level. She has also worked in point to point, national hunt and flat racing yards. She had a point to point jockey licence for a season. She explained that she had a lot of experience with competition horses before she went into rehabilitation. Through understanding how hard it can be to maintain soundness in the competition horse and how difficult it can be to treat horses that have had an injury, Fiona's interest in rehabilitation through hydrotherapy was sparked. She also recognised that there were no such facilities in Ireland which is where she got the idea of bringing a water treadmill over to Ireland. Fiona has a degree in equine management which helped hugely in setting up the business and understanding the industry.

Fiona explained that there are lots of different types of hydrotherapy and that she will be speaking about the equine spa and water treadmill.

When hydrotherapy is used correctly it can:

- Speed up recovery times
- Help prevent injury
- Provide controlled exercise without the weight of a rider
- Provide mental stimulation
- Develop specific muscle groups
- Provide a safe, controlled environment to bring horses back into work
- Enhance performance
- Increase muscle development and joint range of movement

## Cold Hydrotherapy Spa



Fiona showed us the cold hydrotherapy spa and provided details on the different parts of this piece of equipment. She explained that the water is stored inside a tank and is kept at 2 degrees celsius. When you are cold hosing a horse usually the temperature coming out of the hose is around 12 degrees so the water in the spa is significantly colder. In the water are epsom salts and sea salt. The salt acts as a hypertonic poultice reducing

heat while having a natural healing effect on wounds. The water density also increases with salt concentration. There are filters in the spa which maintains the cleanliness of the water. There is chlorine put in the water to kill any bacteria and the water is tested daily for pH and chlorine levels to make sure it is safe for the horses.

Fiona explained that horses do not have to move on the hydrotherapy spa so it can be used at any stage of an injury as they are just standing still. It can be used for a multitude of injuries. The shock of the cold water induces a rush of blood and circulation to the limb. Water can be filled up to over the hock or knee. They avoid touching the belly as they do not want to give the horse hypothermia. They usually raise the water to above the knee/hock, leave it there for 10 minutes and then reduce the level of the water again. The pressure from the water exerted on the limb aids fluid and waste dispersal. Jets circulate and aerate the water which have a massaging effect on the lymphatic system which also encourages drainage. The combination of all of these factors creates a really good atmosphere for the healing of an injury. However, the spa can also be used to prevent injury as well as treat injury. A lot of people will use the spa after strenuous exercise.

Rehabilitation with hydrotherapy spas can be used for:

- Navicular Syndrome
- Laminitis
- Tendon and ligament injuries
- Suspensory desmitis
- Arthritis
- Soft tissue injuries
- Splint and bone bruising
- Fractures
- Swollen joints
- Abscesses
- Open wounds and skin infections



Fiona described how she acclimatises a new horse to the hydrotherapy spa. The legs are hosed from the knee and the hock down. The feet are lifted and the underside of their feet are washed. This keeps the spa really clean but it also desensitises the horse a little to the water as their legs are already wet. They then have a nappy put on which is used to catch any droppings. Fiona normally gives the horse a walk with the nappy on to let them get used to the feeling of it but explained it is not much different to the feeling of leg straps on a turnout rug. She then opens all the doors of the spa and lets them have a good sniff before walking them in really slowly providing treats as bribes. Once in Fiona walks them out again so they don't feel like they are trapped. Once they have done this a few times she then puts a little bit of water in and turns the bubbles on before repeating the process. Once happy the horse is led on to the spa, the doors are closed and the water is slowly built up. With first timers the water is usually raised to fetlock height for 5 minutes before being drained and the horse led off. Fiona explained that depending on the temperament of the horse she will use a chain, a bridle or a chifney for control. She may also put earplugs in nervous horses as the machine can be a bit noisy. Fiona explained that a lot of horses that are used to the spa just stand and fall asleep, surprising to her as the water is really cold.

### **Equine Water Treadmill**



Fiona explained that the equine water treadmill is used at a different stage in the rehabilitation process. The treadmill is a workout but can achieve amazing results when used correctly. The ECB treadmill that Fiona has most experience with has a computer system that allows you to control the speed, incline, height of water, temperature of water and has many safety features in case of a problem. The spa also has a filtration system to maintain cleanliness. Most horses will wear a nappy, like with the spa. However,

some horses do not like wearing the nappy while they are walking so a droppings catcher is used instead.

Research on the benefits of water treadmills have shown it can:

- Increase joint mobility/range of motion
- Muscular strength
- Enhance endurance
- Improve straightness
- Improve balance
- Strengthen back and abdominal muscles
- Develop specific muscle groups while removing concussion from the lower limbs
- Create a controlled safe environment particularly when bringing a horse back into work
- Strengthen the top line
- Develop core strength

Fiona explained that when it comes to trying to achieve these benefits each case is different. Horses heal at different rates and injuries occur for different reasons. When rehabilitating you have to look at the whole horse bearing in mind they may suffer from multiple conditions. For example they may have a lower limb injury but have secondary back pain. They have to treat the whole horse, not just the obvious injury. This needs to be taken into consideration when planning individual programs. These programs are continually monitored and reviewed. Fiona constantly assesses the gait, the posture and the temperament the whole way through every session.

Horses with the following conditions have been successfully rehabilitated:

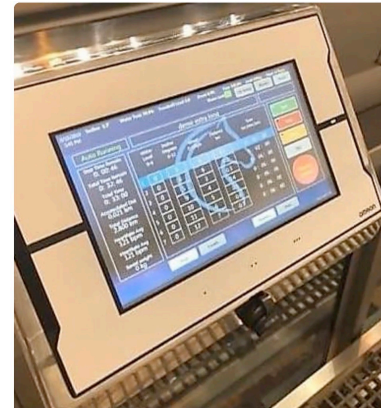
- Laminitis
- Tendon / ligament injuries
- Kissing spine
- Splints / bone bruising
- Navicular syndrome
- Suspensory desmitis
- Sacroiliac pain
- Arthritis
- Abscesses
- Soft tissue injuries

Fiona explained that she has to be very careful with water height and speed when rehabilitating horses. She does not normally use any incline on the treadmill for rehabilitation.

Acclimatising a new horse to the water treadmill is similar to the spa. Legs are washed and they open up all the doors giving the horse lots of time to acclimatise. First timers are always controlled with a bridle, chifney or a chain to keep the horse and handler safe. Fiona then showed us a video of this process. She will usually have 3 - 4 handlers with first timers. Once happy the doors are closed and the horse stays on the treadmill.

Fiona showed us in the video how she uses a second lunge line clicked on to the offside of the horse so in effect she is long reining the horse on the treadmill. This helps to keep the horse straight which is very important as most horses will keep their head towards the handler. Fiona then fills the treadmill with water to fetlock height and encourages the horse to move forward and back and get used to the feeling of moving on the treadmill belt. The belt is then started at a very slow pace to give the horse a chance to process and start to walk but then it is moved to walking pace fairly quickly as most horses will get uncomfortable if the belt is moving too slow. The maximum time they will do on a first session is 10 minutes.

Fiona showed us a photo of the computer screen on the treadmill and explained how the computer allows her to input individual programs for up to 100 horses. This will store belt speed, water height, incline, session length and recovery or workout. It also means that another member of staff can treadmill the horse and Fiona will know exactly what type of session the horse has received. The maximum amount of time any horse will be on the treadmill for is 20 minutes. Fiona compared the water treadmill as like doing a straight line of cavaletti for 20 minutes when explaining the intensity of work the horse is doing.



When devising programs Fiona will take into account the following variables:

- Horse age
- Medical history
- Conformation
- Temperament
- Discipline
- Fitness level
- Current workload

As much as the treadmill is amazing it can also do a lot of harm if used incorrectly. Many international yards have their own treadmill and using it up to 3 times a week can be very beneficial. If you have a local treadmill that you can use once a week it can be a great addition to your training program. However if used once a month it may not show much benefit. Fiona explained that many international riders who are going away to foreign shows may leave the horses that remain at home at a hydrotherapy centre for exercise on a water treadmill which allows these horses to remain in work, maintain fitness and develop strength.

There must be a team involved in the process. Fiona explained the importance of the:

- Hydrotherapist
- Farrier
- Veterinarian
- Physiotherapist
- Chiropractor
- Dentist
- Trainer
- Nutritionist
- Rider

When using the treadmill Fiona explained the importance of the core muscles. She is looking at their posture, agility and suppleness. Core strength reduces the risk of injury. The better control the horse has over its joints and limbs the safer it is. A

weak core can lead to poor balance and poor performance. This is why Fiona long reins the horses on the treadmill. She wants the horses, relaxed, soft, engaging the hindquarters, stretching the neck down and lifting through its back. They should be tracking up evenly and moving straight. The sides of the treadmill are made of glass so you can view and observe the horse while working from all angles and constantly monitor.

If the belt is too fast the horses can lose their posture, their straightness, their activity and can get quite stressed. If the belt is too slow they can get a bit agitated, cheeky and not work correctly. If the water is too high they hollow their frame, lift their head and neck and get quite anxious. Fiona explained that there are lots of different factors that can change their posture for good and for worse.



Fiona then showed a variety of videos with water at different levels and explained how it affected the movement of the horse. The theory is the higher the water the more activity you get, however, in practice this is not always the case depending on the individual horse. The water at a height to the base of the hock is where they normally get the best range of movement however not all horses can work with this depth of water. Water above the knee or hock puts a lot of pressure on the spine and sacroiliac so is not suitable for many horses. The movement of the horse is constantly being assessed according to what is normal for that horse. Fiona explained that any change can be potentially be picked up as a little niggle before it develops into something bigger and this can be fed back to other professionals. The water is good at showing any signs of instability or weakness.



We then seen a video of a horse walking from behind and from above. The horse in this video was wearing an equi-band attached around the hind limbs and then on to a roller. Fiona explained that this horse moved very wide behind. The band encourages the horse to sit behind and engage his hind limbs while also providing proprioception to have a slightly narrower stance. In this video we could see all the muscles soft and moving comfortably. Fiona also pointed out how great it can be to get a horse moving like this without a saddle completely free from restriction. It can also be great way to relax sore muscles if a saddle hasn't been fitting correctly and build up muscle in this area. Fiona described a study in which back templates where taken of horses over a course of 4 weeks using the water treadmill. Results showed much more muscular development and also improved symmetry.



Fiona went through a number of case studies of a variety of horses with before and after photographs showing some quite remarkable improvements in muscular development and symmetry.

### Case study

Dressage Horse  
 Age: 16  
 Level: Advanced  
 6 treadmill sessions  
 Speed: 3.5 km/h  
 Incline: 4 degrees  
 Water height: Mid cannon  
 Session length: 20 minutes  
 Equipment used: Double ropes

### Image shows:

Increased muscle developed of the:

- Gluteal muscles
- Biceps femoris
- Hamstrings
- Lateral digital flexor muscles



### Case study

Racehorse  
Age: 5yo  
Level: Raced 10 days prior. P2p  
6 treadmill sessions  
Speed: 3.6 km/h  
Water height : Fetlock to mid cannon  
Incline: 2 degrees  
Session Length: built up to 20mins  
Equipment used: Double ropes

### Image shows:

Increased muscle development in:

- Gluteal Muscles
- Hamstrings
- Biceps Femoris
- Lateral digital Extensor muscles



### Case Study

Racehorse  
Age: 5yo  
Level: Racing NH  
Water treadmill 6 session p/w  
Water height: fetlock to mid cannon  
Speed: 3.8  
Incline: Built up to 4 degrees  
Session length: 20 mins  
Equipment used: Double ropes

### Image Shows:

Increased muscle development:

- Trapezius muscle
- Latissimus dorsi
- Pectoral
- Deltoid
- Gluteals
- Bicep Femoris
- Tensor Muscle
- Improvement to the muscling of the brachiocephalicus



### Case study

Racehorse  
Age: 7yo  
Level: P2P  
6 Treadmill sessions p/w  
Speed: 3.8 km/h  
Water height: Fetlock  
Incline: None  
Equipment used: Double Rope

### Image shows:

Increased muscle development in:

- Trapezius muscle
- Latissimus dorsi
- Triceps
- Deltoid
- Extensor muscles
- Gluteals
- Biceps femoris
- Improvement of the muscling of the brachiocephalicus





When to recommend treadmill use:

- Improve horses core strength
- Improve balance and straightness
- Increase stride length
- Change of environment for the horse
- Safe controlled exercise when coming back from injury
- Can be safer than starting back to ridden work
- Rider injury
- Rider away at international shows
- Horse injury

Fiona explained that just this year the Institute of Equine Hydrotherapists (IEH) has been set up. This is a sub group of the Institute of Registered Veterinary and Animal Physiotherapy (IRVAP). Hydrotherapy is currently a non-regulated industry and the IEH will set the standards for professionalism and clinical proficiency in equine hydrotherapy. IRVAP's code of practice is implemented and adhered to by all members of the IEH and Fiona encouraged everyone to look for a member of IRVAP when choosing an equine hydrotherapist. Fiona is on the board of IEH.

A list of approved hydrotherapists can be found at:

[www.irvap.org.uk/institute-of-equine-hydrotherapists](http://www.irvap.org.uk/institute-of-equine-hydrotherapists)

Finally Fiona showed a few quotes from international riders in a variety of disciplines with their thoughts on the benefits of hydrotherapy. While many elite riders have their own water treadmills installed for their private use there are now many drive in centres available throughout the UK for public use.

Fiona has provided references and documents to studies on water treadmills and equine spas. If anyone would like access to these please contact Mark Robinson via email: [markrobinsonuuj@yahoo.co.uk](mailto:markrobinsonuuj@yahoo.co.uk).

I would like to take this opportunity to say a massive thank you to Fiona Fitzgibbon for a a very informative evening. Her knowledge and enthusiasm left us all inspired. Also huge thank you to Judith Murphy FBHS for help in organising the evening and hosting the talk on zoom.

Report by Mark Robinson BHSI