

# EQUINE PHYSICAL THERAPY and REHABILITATION

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# INTRODUCTION

- Horses are fantastic athletes, from the pony club horse to the racing Thoroughbred.
- As athletes, horses are under the risk of injuries and conditions related to their sport.
- Physiotherapists have a pivotal role as part of the equine sport medicine team, from assisting to manage the acute stage of injury to ongoing rehabilitation to ensure return to optimal performance



[http://www.wur.nl/upload/bf67bf60-1b3c-4dc6-b529-9cf9996023f0\\_shutterstock\\_10834456\\_paarden\\_rennen\\_renbaan\\_race\\_renbaan\\_jockey\\_LR.jpg](http://www.wur.nl/upload/bf67bf60-1b3c-4dc6-b529-9cf9996023f0_shutterstock_10834456_paarden_rennen_renbaan_race_renbaan_jockey_LR.jpg)

- Horse physiotherapy is different from human and canine physiotherapy from some aspects.
- The horse is treated in standing in the majority of situation; thus much of the musculoskeletal system is treated in the weight-bearing (WB) or partially weightbearing (PWB) postures.
- A horse can be lie down only under anesthesia, so it is not preferred
- Many techniques like manual therapy, soft tissue and skeletal mobilisation and manipulation, proprioceptive facilitation techniques, electrotherapy and exercise-based rehabilitation can be adapted and performed successfully



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# Rehabilitation of Musculoskeletal Disorders

- After a thorough clinical examination and motion evaluation, the first technique of rehabilitation of musculoskeletal disease is to provide controlled movement and stimulation of the affected areas.
- Owners can apply various mobilization techniques when the horse is cold (before exercising), warming up and warm.



[https://ontarioequestrian.ca/wp-content/uploads/2016/03/IMG\\_8819.jpg](https://ontarioequestrian.ca/wp-content/uploads/2016/03/IMG_8819.jpg)

## Before exercise

- Stretching exercises using prizes such as carrots to enable the horse to use its cervical and thoracic areas
- Massage of a qualified physiotherapist
- To walk forward, backward and on the number eight in the hand,
- Keeping the horse warm with a blanket or hot packs



<https://www.equisearch.com/articles/stretching-horses-has-health-benefits-20296>



<https://thehorse.com/149547/rehabilitating-horses-with-back-problems/>



<https://dressagetoday.com/instruction/preparing-the-young-dressage-horse-for-success>

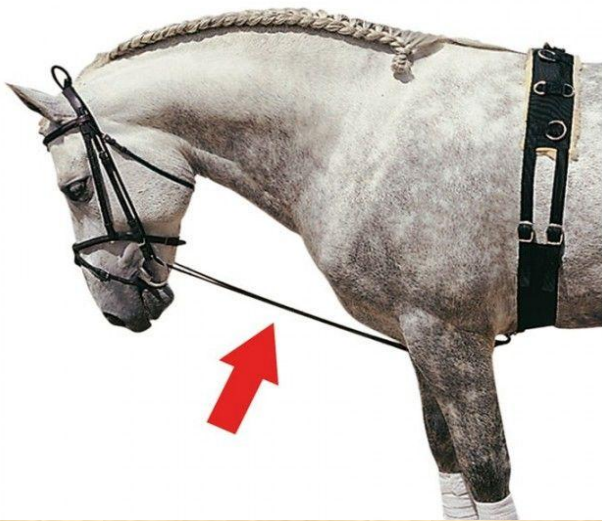
## When warming up

- Electrical stimulation from a veterinarian
- Applying weighted boots around the hind legs to improve proprioception (awareness of where a horse's foot is) and increase hip, knee, heel and ankle flexion



- Working on a sponge line with a training device such as side bridles, a Chambon, a Gogue or a Pessoa to encourage the horse to properly move and use its body.

**Chambón Elástico de Goma**  
Side Rein 4010-K Black



<https://www.webshop.viva-iberica.com/ekmps/shops/rlust/images/basic-chambon-elasticated-side-reins-1157-p.jpg>



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## After warm up

- Working on different floors and slopes: "Up-hill running promotes engagement and abdominal wall contraction",
- "Down-hill running increases passive interaction and will be challenging for horses with sacroiliac joint disease.



<https://practicalhorsemanmag.com/health-archive/3-steps-to-stronger-stifles>



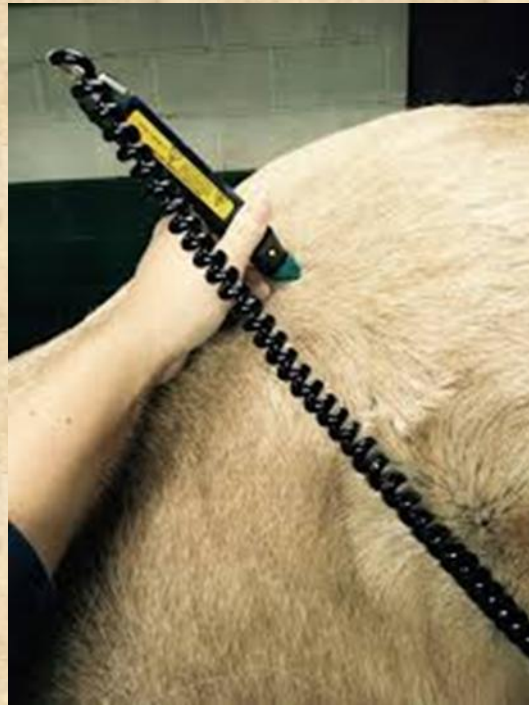
- Exercise on the hard ground is not recommended for patients with joint problems in the vertebra, as the hard ground will increase vibration.
- Soft and deep floors encourage the horse to lift its foot higher.
- Cavalettos can be used to induce conscious proprioception and greater hip and gluteal muscle function.



- Massage can increase blood flow and help identify muscle spasms.
- There are many massage techniques available, the owner or groomer can apply simple techniques.



- The laser can be used to stimulate specific trigger (myofascial pain) points and aid recovery.
- Electrotherapy can be used to stimulate nerves and reduce pain.



- Kinesiotape, applied to limit the movements of certain joints, can “relax and strengthen muscles, support ligaments, stimulate circulation and reduce inflammation, depending on how and where it is applied.

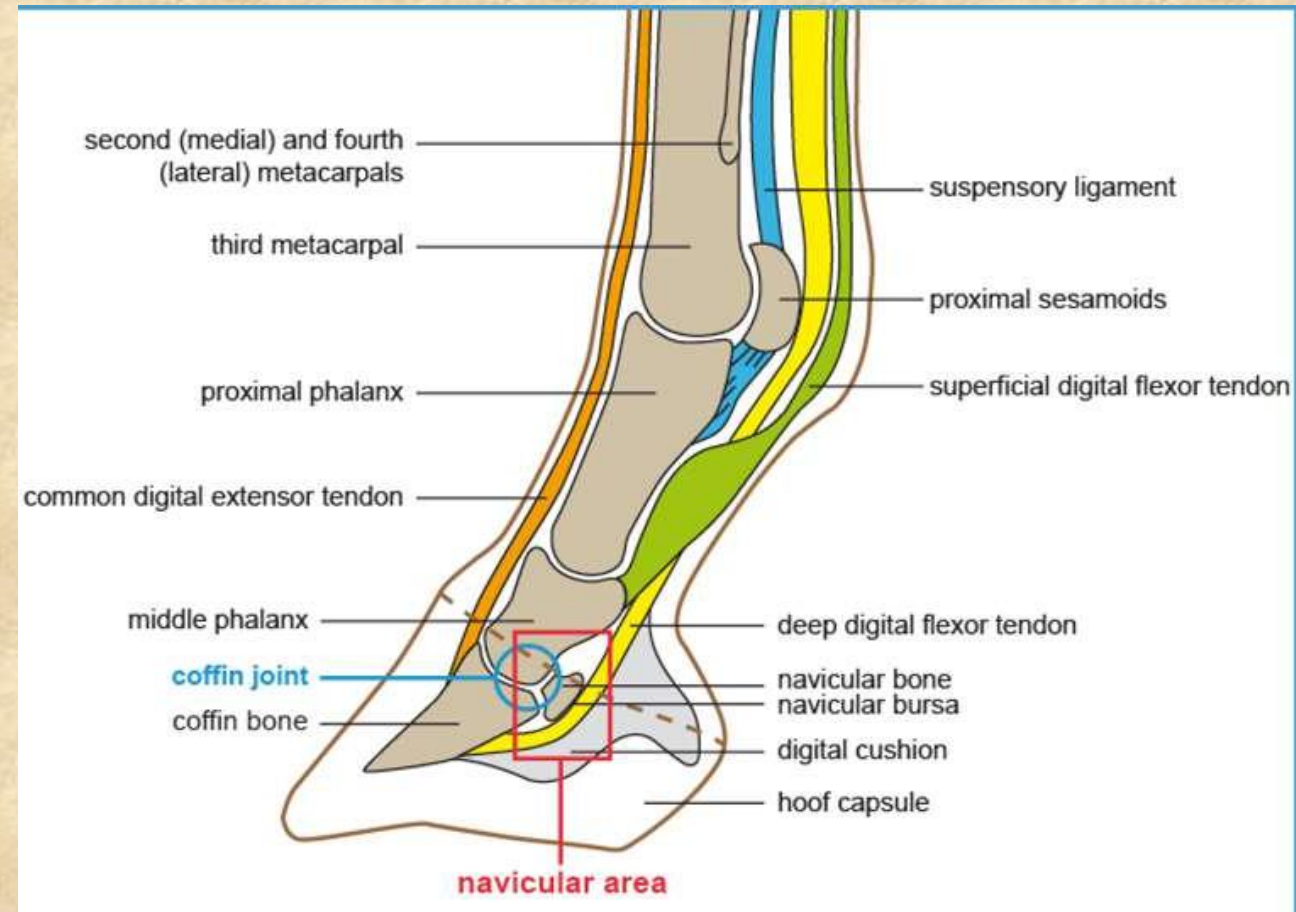


- Therapeutic ultrasound can increase blood flow, relax muscles and stimulate trigger points.
- Shock wave therapy can help treat myofascial pain and muscle spasms.
- Magnetic therapy can increase new blood vessel formation.
- Hydrotherapy, including underwater treadmill use and swimming, helps the horse to strengthen its muscles without overloading their limbs.



# Rehabilitation of Tendon Injuries

- Strain-induced tendon injury of the tendons and ligaments is commonly occurred in the equestrian athletes.
- Superficial digital flexor tendon (SDFT) is the most commonly injured tendon
- Less commonly injured ones; deep digital flexor, interosseous tendon and accessory ligament of the deep digital flexor tendon



- In chronic tendon injuries:

- Exercise should be restricted to walking from onset of clinical signs
- However, prolonged immobilisation may contribute to further detrimental changes
- Keep the horse in a small paddock or yard, where they can mobilise in a limited way
- Decide to start exercise according to clinical and ultrasonographic examination
- Loading to the tendon should be increased gradually; in early, middle, late stages

- In early stages

- ✓ Standing/walking on varying surfaces, such as springy grass and sand, will increase the loading.
- ✓ Progressing walking into trotting.
- ✓ Walk/trot on a lunge or circle will load different parts of tendon.

- In middle stages

- ✓ Progression of in-hand exercise to variable terrain, gentle gradients.
- ✓ Ridden work at trot; straight line then circle – weight of rider will increase tendon load.
- ✓ Graduate into canter; straight line then circle.



- In late stage (36 weeks +)
  - ✓ Use of slopes and speed work
  - ✓ Jumping horses – slopes, poles and cavalettis should be introduced
  - ✓ Reduction in fence height may limit risks for SDFT injury but not affect accessory ligament or interosseous tendon



<https://premierequestrian.com/wp-content/uploads/2019/08/horse-jumps-liverpool-PolyWrap-poles-89JS-standards-Todd-Minikus-1210x800.jpg>



[https://www.horseriding.org.uk/wp-content/uploads/bfi\\_thumb/horse-riding-jump-stands-35jg5nwcihcgl8eyjbln9m.jpg](https://www.horseriding.org.uk/wp-content/uploads/bfi_thumb/horse-riding-jump-stands-35jg5nwcihcgl8eyjbln9m.jpg)

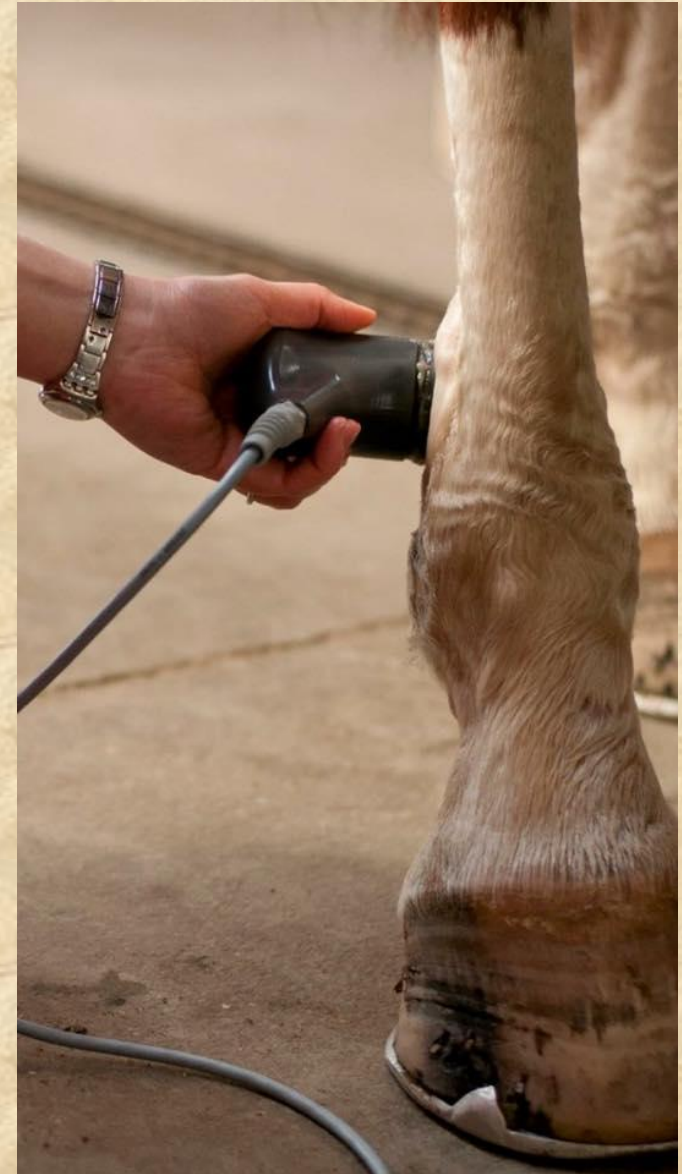


<https://c8.alamy.com/comp/PFR1PE/girl-on-horse-going-down-a-slope-PFR1PE.jpg>

- It is better not to allow horses with severe tendon injury to do gallop until 6 months post injury, but preferably 9–12 months
- Deep transverse friction massage
- If there is inflammation > cryotherapy
- Ultrasound, laser, pulsed electromagnetic field or extracorporeal shockwave therapy may be beneficial in the treatment of muscle and tendon lesions



[https://www.rossdales.com/assets/page-images/\\_facebook/Laser-therapy.jpg](https://www.rossdales.com/assets/page-images/_facebook/Laser-therapy.jpg)



<https://www.equtrasound.com/wp-content/uploads/2016/04/therapy-ultrasound-for-horses.jpg>

- In acute tendon injuries, there should be a short period of immobilisation followed by controlled and progressive mobilisation
- Protect, rest, ice, compression, elevation
- In early stage (up to 72.hour, mostly 48.hour) application of cold may minimise inflammation and limit the action of proteolytic enzymes
- A compression or elastic bandage should be used around the affected tendon, but care should be taken to avoid impairment of circulation
- Provide the animal with non-slip surfaces, adequate confinement and resting surfaces

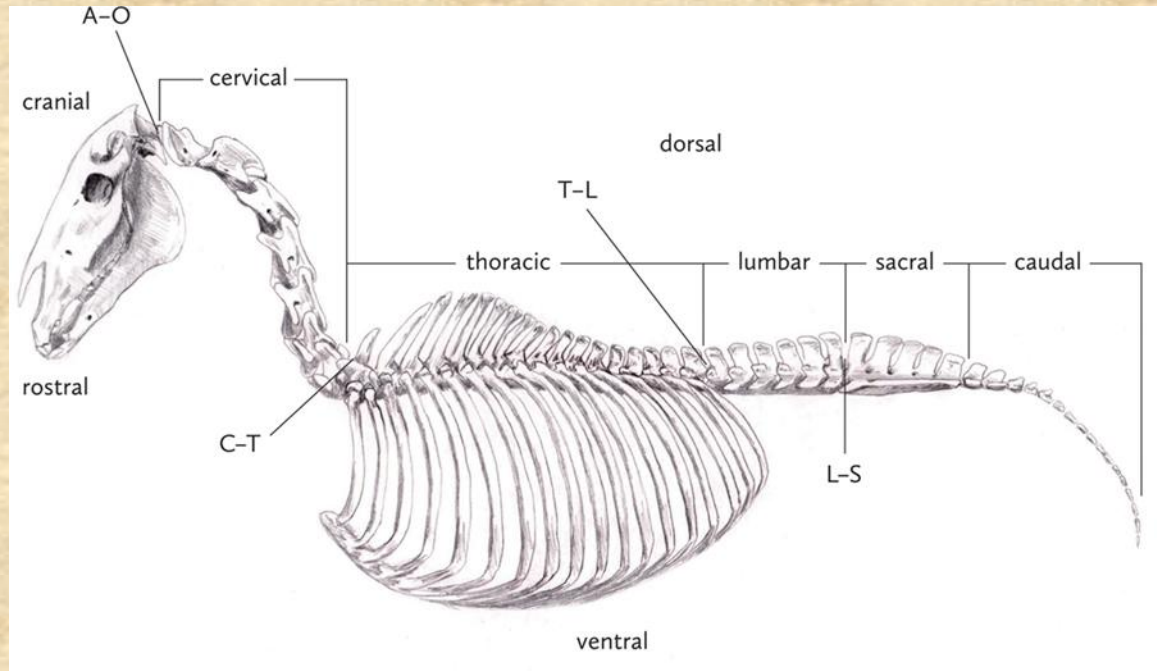


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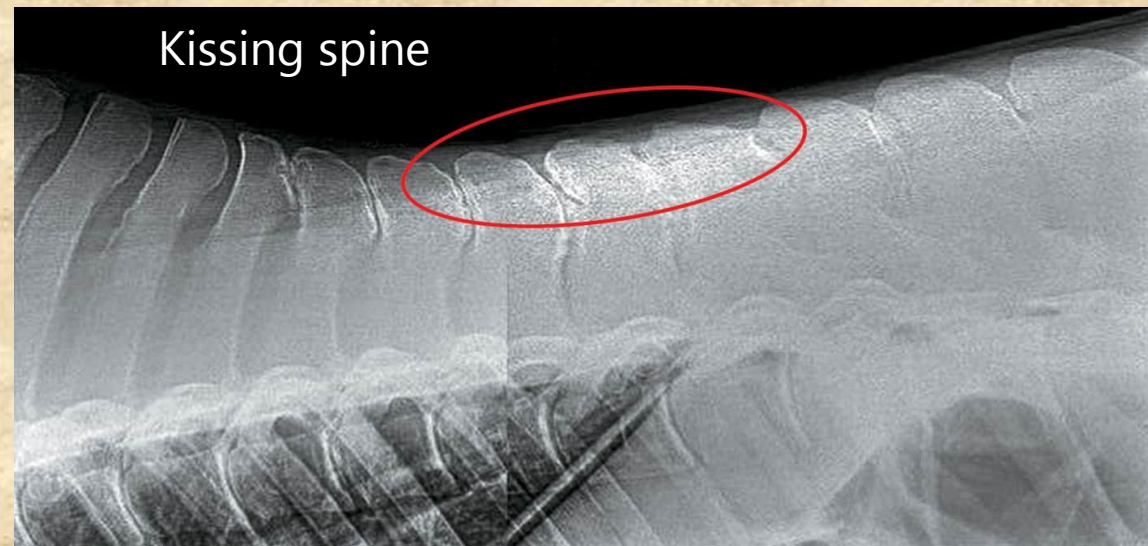
- In chronic stage 1 (3-5 days) as pulsed (non-thermal) ultrasound, low-dose laser or pulsed electromagnetic field therapy (PEMF) at the lowest setting
- In chronic stage 2 (5-21 days) within the first 2 weeks following injury (severity dependent), it is best to adhere to relative rest incorporating pain-free activity and range of motion (ROM), then stretching
- Exercising with NMES
- Heat, cyclical hot/cold, laser, ultrasound, PEMF
- Gradually increasing the exercise level

# Rehabilitation of Equine Back Pain

- Horses may experience musculoskeletal pain and injuries anywhere along the axial skeleton consisting of the skull, columna vertebralis, sternum, and costa.
- The backbone of the horse, the main scaffold rod of the axial skeleton, consists on average of 54 interlocking bones or vertebrae



- Many horses with 'sore' backs have been 'cured' by repositioning their head at exercise.
- Severe problems are very incapacitating and give rise to obvious clinical and X-ray findings.



[https://thehorse.com/wp-content/uploads/2018/02/KissingSpines\\_CourtesyJackieHill.jpg](https://thehorse.com/wp-content/uploads/2018/02/KissingSpines_CourtesyJackieHill.jpg)

- Back pain in horses can originate from: the skin (eg saddle sore), ligaments (eg sacroiliac strain), vertebrae (eg overriding dorsal spinous process or "kissing spine") or muscles
- Vertebral and pelvic fractures manifest with reluctance on the animal's part to move, and every indication of severe crippling pain associated with gross muscle wasting.
- Any form of treatment calls for close veterinary supervision; all cases eventually require muscle stimulation and rehabilitation.

- The 'problem back' is the one producing some signs of discomfort and reduction in performance ability, but without obvious clinical findings.
- These types of back are almost certainly a result of **ligament strain** and associated **muscle problems**.
- Soreness and discomfort in the back have occurred as a result of a problem in a limb causing the horse to work out of balance, the uneven stresses falling on the back.
- The answer is to find and cure the limb problem, and then the back will recover.



- The cause of back pain can be;
  - incorrectly fitting or poorly maintained saddle
  - pain elsewhere, causing the horse to alter its action, so putting abnormal stresses on the back
  - falling, slipping up
  - twisting, turning abruptly
  - jumping awkwardly



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<https://keyassets.timeincuk.net/inspirewp/live/wp-content/uploads/sites/14/2019/03/Kate-Hardt-screenshot-920x518.png>

- Treatment for back pain in horses include a multimodal approach
- Rest is essential, ranging from weeks to months.
- More specific treatment will depend on the diagnosis and includes:
  - painkiller,
  - physiotherapy, eg heat, ultrasound, electrotherapy, manual therapy (massage), PEMFT,
  - infiltration into area of pain, eg. anti-inflammatories
  - surgery in cases of painful “kissing spines” and some fractures
  - controlled exercise
  - acupuncture

- If there is an exact back problem, reduce the pain, stimulate the appropriate muscle groups, re-educate the movement pattern, check the saddle fit and find the cause.

