

## TENDON AND LIGAMENT INJURIES

What does “doing a tendon,” or “bowed tendon” in a horse mean? What is the difference between tendon injuries and ligament injuries, which are more common in people?

### Tendons

Tendons are the strap-like elastic structures that link muscles to bone usually enabling the muscles to move joints. Most are short and rarely damaged but the flexor tendons of the horse are some of the biggest of any animal and make up most of the bulk of what we feel when we palpate behind the horse’s cannon. Each tendon is made up of lots of straight fibres running lengthways- like a rope but without the twist. This sheer size is what makes them more prone to injury and their relatively poor blood supply makes them slow to repair.

There are two flexor tendons: the superficial digital flexor tendon (SDFT), which runs closer to the skin, and the deep digital flexor tendon (DDFT), which runs deep to the SDFT. As the flexor tendons run over the back of the pastern and fetlock, there are surrounded by a fluid-filled sheath, known as the digital flexor tendon sheath. This fluid filled structure reduces friction as the tendons change direction in the lower limb.

### Tendon injuries

Tendons are most commonly injured through repetitive-strain but can also be damaged by a single awkward landing of a limb. More rarely they can be damaged by a direct blow (usually from another limb) or from a wound. If the wound involves the tendon sheath it will cause an infection in this structure that could be career or even life ending if not dealt with quickly and appropriately. The degree of damage is variable, from damage to a few fibres to complete rupture.

### Signs

- Lameness
  - Most horses are slightly lame and this generally resolves with a few days of rest
  - More severe injuries or infections of the tendon sheath can result in severe lameness
  - If a tendon is completely ruptured the fetlock may dropped or the toe may be off the ground
  - There may be no evidence of lameness with mild injuries
- Pain and Heat
  - These can also be very variable
- Swelling
  - Can vary from mild to severe

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### Diagnosis

Not every swollen limb has a tendon injury but it is important to call your vet immediately to discuss a new swollen leg. Experienced clinical examination will often be diagnostic, but an ultrasound examination is necessary to confirm which structure(s) are affected, the and degree of damage. We usually recommend a single scan 7 days after the injury (for followers of football they scan *every* day until day 7- useful information can be obtained earlier but the 7-day scan is most useful for prognosis). Tendons can also be damaged within the hoof and this cannot be seen with ultrasound but can be assessed on MRI.

### Treatment

All cases require initial anti-inflammatory treatment, a prolonged period of rest, followed by a restricted exercise plan with repeat ultrasound scans to check healing is progressing. Tendons typically repair with a scar, which is less elastic than the original tissue. Therefore, the repair tends to be weaker than the original tissue and can be prone to reinjury.

Treatments used to reduce healing time, while improving strength of the repair (“regenerative therapy”) still have not been fully evaluated in horses, particular in non-race horses. Treatments that show promise include injection of growth factors (Platelet rich Plasma) and stem cells.

### Ligaments

Ligaments are the slightly less elastic structures that connect bones to other bones, or other soft tissue structures. This includes supporting joints.

### Ligament injuries

Damage to ligaments can also be related to repetitive strain but is probably more commonly the result of sudden overload, such as an awkward landing. There may be heat, swelling and pain but often this is more subtle than for a tendon injury. An exception is ligament rupture, which can result in severe lameness.

Common ligament injuries include:

- Accessory (Check) ligament desmitis
- Proximal suspensory ligament desmitis
- Collateral ligament desmitis (Injury of the strap ligaments either side of joints)

### Diagnosis

Clinical signs are often more subtle and if there is not a warm, painful or swollen area then a lameness exam making use of nerve blocks, X rays, ultrasound and sometimes advanced imaging such as MRI is necessary.

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### **Treatment**

Treatment varies depending on the injured ligament, and may be similar to the management of an injured tendon. However, some ligament injuries, such as proximal suspensory desmitis, may benefit from surgical treatment.