

Tendon Injuries



Flexor tendon injuries are relatively common in horses. Superficial digital flexor tendon (SDFT) injuries are particularly common in eventers and racehorses, but can occur in any horse through field injury or over-exertion. The primary defect is a central rupture of tendon fibres resulting in bleeding and swelling. A tendon injury need not be career ending as most are treatable, but prompt diagnosis and early, appropriate treatment can prevent catastrophic breakdown and reduce the risk of recurrence.

Clinical signs

Clinical signs may vary according to the severity and age of the injury. Signs may include:

- heat, swelling and pain over the tendon;
- lameness – variable, usually only mild to moderate, even in severe injuries;
- a bulge or bow on the back surface of the tendon when viewed from the side;
- distension/filling of the tendon canal behind the fetlock (windgall);
- slight sinking of the fetlock in severe injuries.

DIAGNOSIS

Ultrasound scans are performed around a week after injury to allow accurate evaluation of the damage. Scans performed immediately following injury may underestimate the severity. The structures affected and the severity of the lesion is assessed to help formulate a treatment plan and give a prognosis. The location, cross sectional size and length of the lesion are recorded, along with the degree of fibre disruption compared with the opposite leg, which should also be scanned for signs of milder injury.

Scans will usually be repeated at 8-12 week intervals, usually before the workload is changed and can be compared with previous scans to assess healing.



**TENDON INJURIES
DIAGNOSIS AND
ASSESSMENT USING
ULTRASOUND**



**ULTRASOUND SCAN SHOWING
A LARGE CORE LESION IN
THE SUPERFICIAL DIGITAL
FLEXOR TENDON**

Key points

- characterised by heat, swelling and pain at the back of the leg between the knee/hock and fetlock;
- lameness is variable and not present in mild cases;
- in the acute phase initial therapy is cold hosing, box rest and anti-inflammatories;
- ultrasound scan after 1-2 weeks is essential to assess the extent of the damage and provide a prognosis and formulate a treatment plan;
- controlled exercise is vital to encourage re-alignment and elasticity in the healing tendon fibres;
- tendons are slow to heal (often 12-18 months) and form stiff scar tissue, so are prone to re-injury (nearly 50%);
- stem cell therapy has been shown to reduce the recurrence rate from about 50% to nearly 25% (see over).



Treatment

- **Rest** The mainstay of treatment is rest and controlled exercise. An initial period of box rest will be followed by a controlled exercise rehabilitation regime. Horses with suspected tendon injuries must be rested until they have been assessed by a vet. Controlled exercise in the recovery phase improves the fibre alignment and quality of repair.
- **Cold hosing** 15-20 minutes 3-4 times a day for the first 10-14 days, to reduce the inflammation and provide pain relief.
- **Bandaging** A compression bandage may be recommended in the early stages.
- **Anti-inflammatories** Anti-inflammatories (such as phenylbutazone) are used to reduce inflammation and discomfort in the first 14 days. Topical gels can also be used.
- **Stem cell therapy** Stem cells have the ability to mature into any cell type and theoretically can grow into new tendon cells for improved healing. Stem cells are collected from bone marrow in the sternum (breast bone) or pelvis. They are then cultured in a laboratory until they have increased in number to between 10-40 million. The sterile solution is then couriered back to the veterinary practice where they are injected, under ultrasound guidance, directly into the area of injured tendon. This process should be completed within about the first month following injury.

PROGNOSIS

The prognosis for return to athletic function depends on the size and severity of the injury and the quality of repair.

In most cases a period of about 12 months out of competition is required. The repaired area of tendon, composed of scar tissue, is less elastic and the tendon will be at an increased risk of re-injury. Periodic monitoring ultrasound scans are recommended to identify changes and allow the moderation of work level prior to re-injury.

PREVENTION:

- maintain good foot balance;
- avoid fast work in unfit horses;
- keep horse at optimum weight;
- keep fast work to short distances and slow down when horse is tiring;
- avoid excessive fast work on soft ground;
- ultrasound tendon monitoring for horses in high level work.



ULTRASOUND GUIDED STEM CELL INJECTION

WEEK	EXERCISE
1	Ultrasound Examination implant cells
2	Box rest; maintain bandage
3	10 minutes walking; replace bandage with stable bandage
4	15 minutes walking; maintain stable bandage
5-12	20 minutes walking; maintain stable bandage <i>repeat ultrasound examination</i>
13-16	40 minutes walking and five minutes trotting daily
17-20	30 minutes walking and 10 minutes trotting daily
21-24	30 minutes walking and 15 minutes trotting daily <i>Repeat ultrasound examination</i>
25-26	25 minutes walking and 20 minutes trotting daily
27-28	20 minutes walking and 25 minutes trotting daily
29-30	15 minutes walking and 30 minutes trotting daily
31-32	10 minutes walking and 35 minutes trotting daily
33-48	Introduction of canter work; gradual return to full work
48+	Treat as normal



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