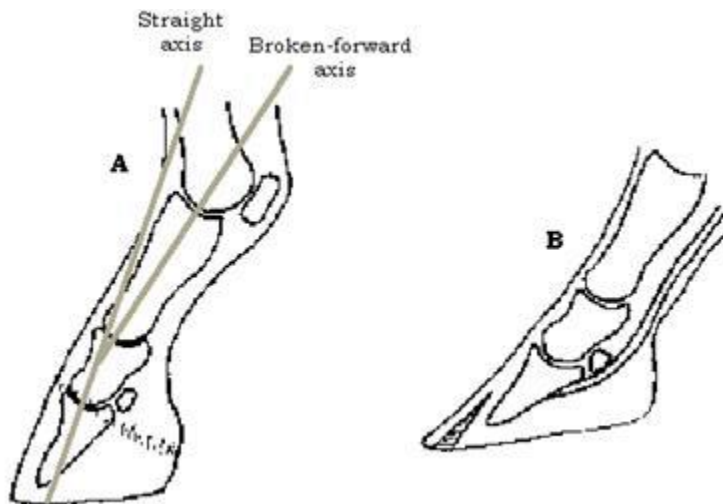


## Why is a Deep Digital Flexor Tendon Tenotomy done?

Flexural deformity of the distal interphalangeal joint is characterised by a shortening of the DDFT musculotendinous unit. It can be present at birth or acquired at later stage of growth (1-6 months) or as a result of chronic laminitis. One or more limbs may be affected at the same time. The goal of the procedure is to realign the coffin bone relative to the ground for a sound foot.

DDFT contracture results in the deep flexor muscle fibres having an abnormal degree of persistent contraction. This shortens the overall length of the muscle belly therefore creating a shorter distance from origin of the structures to the respective insertion points at the base of the coffin bone. This significantly restricts the ability of a horse to comfortably rest heels of normal length on the ground resulting in a broken forward hoof pastern/elevated toe or "club foot".



True DDFT contracture is independent of any lamellar pathology however DDFT contracture may also be as a result of chronic laminitis. In the equine world some people believe that DDFT tension is responsible for third phalanx (P3/coffin bone) rotation while others believe that it does not contribute significantly to it.

As it relates to laminitis DDFT tenotomy is the most finically feasible salvage procedure currently available.

It is indicated with regards to laminitis when:

1. There is rotation of the distal phalanx more than  $12^{\circ} \leq 30$  days of the disease.
2. There is distal displacement of the extensor process up to 1 cm during the first week of the disease.
3. The animal has significant laminar damage or chronic laminitis and is unresponsive to standard treatments e.g. forms of foot support & heel elevation.

This procedure helps relieve the pain and also the progression of laminitis by decreasing the angle and hence, the stress and pressure of the lamellae pulling off the dorsal aspect of the hoof capsule.

Table showing Dr. Redden grading system for Club foot.

Table 1 Club foot grading system according to Redden	
Grade	Description
I	Dorsal hoof wall angle is 3°–5° greater than the opposing foot angle, fullness through coronary band as a result of partial luxation of P2-P3
II	Dorsal hoof wall angle is 5°–8° greater than the opposing foot angle, growth rings compressed dorsally, heel does not contact the ground when normally trimmed to the plane of the frog
III	Dorsal hoof wall is dished; growth rings at the heel are twice the width of those at the dorsal hoof wall, radiographic evidence of flaring and/or osseous resorption at tip of P3
IV	Pronounced dished appearance with $\geq 80^\circ$ angle of the dorsal hoof wall, the coronary band distance from the ground at the heel the same as at the toe, radiographic changes include extensive P3 demineralization and possible rotation

From Redden RF. Hoof capsule distortion: understanding the mechanisms as a basis for rational management. *Vet Clin Equine* 2002;10:442-62

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