

# Learn about laminitis

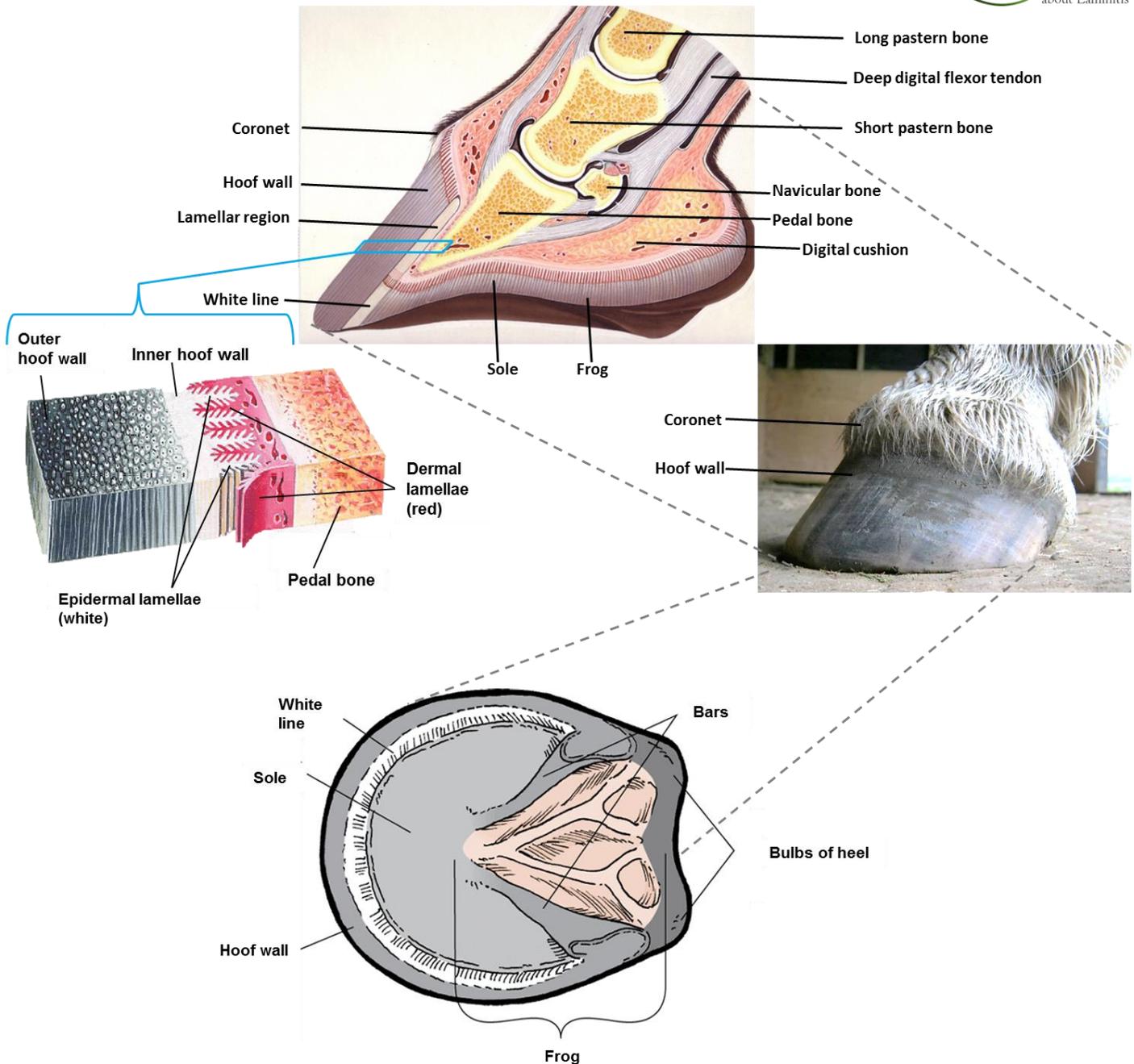
## Chapter 1 – What is laminitis?

Laminitis is one of the most **devastating and debilitating** diseases that can afflict **any** equine. It is of particular significance because it poses a threat to all horses and ponies. Laminitis is a complex disease of the equine foot and although researchers have started to slowly piece together the puzzle of how and why it occurs, the **exact trigger factor(s)** for the disease **remain unclear**. All too often euthanasia on welfare grounds is the only means to alleviate the unrelenting foot pain associated with the disease; despite the best efforts of veterinarians, farriers and owners.

The lamellar region of the foot is a specialised structure of the skin in which the 'sensitive' dermal skin layer (containing blood vessels and nerves) resembles the leaves of a book (lamellae). These **dermal lamellae** interlock (interdigitate) with corresponding series of leaf-like **epidermal lamellae** on the internal surface of the hoof wall (*Fig. 1*). These 'insensitive' epidermal lamellae are so-called because they lack blood vessels and nerves. It is this all-important **interlocking** of the dermal and epidermal lamellae that help **suspend** the pedal bone within the hoof capsule, and it is this interface between lamellar structures where laminitis strikes. Laminitis occurs when the lamellar interface is '**weakened**' due to systemic disease, hormonal imbalances and/or mechanical trauma - resulting in instability of the pedal bone within the hoof, potential inflammation and excruciating pain.

In severe cases, the damaged lamellae may become so weakened that they are no longer able to suspend the pedal bone in its normal position. Permanent anatomic change occurs as the pedal bone 'rotates' and/or 'sinks' within the foot; crushing soft tissues, damaging blood vessels and nerves and adversely affecting hoof horn growth. The feet are now considered to have undergone **chronic laminitic changes**, where a full recovery is no longer possible, leaving the horse with **permanent foot impairment** requiring careful ongoing management to prevent further degenerative changes and pain.

The devastating fact about laminitis is that by the time that clinical signs of pain and lameness are noticed, irreversible damage within the hoof may already have begun. Animals that have had laminitis previously are also **more susceptible** to having further **recurrent episodes**, or suffer **chronic pain** from degenerative changes within the foot initiated by the disease. Laminitis is truly a disease where **prevention** is far better than cure and we all have a role to play in finding ways to prevent the disease from occurring to the welfare benefit of our horses and ponies.



**Fig. 1** Anatomy of the healthy foot showing the internal structures (above) and a solear view (below).

**DID YOU KNOW?** The direct translation of the word 'laminitis' is inflammation of the laminae of the foot. However, this is not strictly correct as laminitis is known to be caused by a number of interacting factors, of which inflammation is but one. Also, the term 'laminae' is often used interchangeably with the term 'lamellae', with lamellae being the anatomically correct term and one that we will be using throughout.

Coming soon - we will take a closer look at the potential clinical signs associated with laminitis.