



# WOUNDS

## THERE ARE 2 MAIN CATEGORIES OF WOUNDS:

### I. OPEN/FULL SKIN THICKNESS WOUNDS

**A. Incisions** have regular cutaneous margins with a clean cut to the skin edge. They can range from mild to extremely painful depending on the involvement of other structures such as tendon sheaths, joints and bone. Any incision would should be assessed for depth, direction of penetration, presence of fluid from the wound and residual foreign bodies. There are two types of incisions - intentional such as surgical incision with a scalpel blade or accidental involving a sharp object such as glass or sheet metal.



*Hock Incision*



*Incision into the digital tendon sheath*

**B. Lacerations** are the most common open wound encountered and have irregular cutaneous margins and often a jagged appearance to the skin edges. Quite often they are extremely painful and are associated with extensive damage and bruising to the underlying tissue.



*Degloving*



*Star picket laceration to hind quarters*

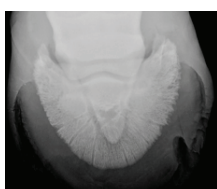


*A laceration that also involved a loss of tissue is called an avulsion*

**C. Puncture** wounds involve a sharp object penetrating through the skin or hoof which can introduce dirt/manure/debris. Depending on the location, the contamination can involve the skin, synovial structures, tendons/ligaments, muscles and subsolar tissue. The size of a puncture wound can belie the severity of the injury and correctly identifying the structures involved and the depth of penetration is vital. Punctures into synovial structures such as joint and tendon sheaths, can often show little or no lameness in the first 24-48 hours giving a false sense of security about the severity of the wound. Any puncture wound should be examined by a vet to ensure appropriate treatment (and even referral for surgery) is immediately actioned.



*Puncture wound into the tendon sheath at the back of the pastern*



*Puncture wound into the sole of the foot and pedal bone*



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## 2. CLOSED/PARTIAL THICKNESS WOUNDS

**A. Abrasions** are injuries to the superficial skin layer caused by friction (rubbing) and are characterised by serum oozing from the wound with a small amount of haemorrhage. They are often extremely painful as nerve endings in the epidermis are exposed.



### IMPORTANT

Please seek veterinary advice for any wound especially those on the lower limb and in conjunction with a lameness.

**B. Contusions** are associated with bleeding and destruction of tissue within and beneath undivided skin. These are best thought of as bruises from kick injuries or fence accidents. Haematomas are considered extreme contusions and commonly occur in the pectoral and hindquarter muscles.



There is a high probability that every horse owner will experience and manage a wound at some stage a horse's inherent flight response to noxious stimulation means that running, jumping or shying occur frequently without consideration of the surrounding environment. Some wounds will be minor and easily managed without veterinary intervention, however some wounds will require immediate veterinary attention and management for months afterwards. Wound assessment and classification is a useful skill for owners to develop and being able to relay this information will assist in prioritising an immediate consult if needed.

Most equine wounds involve the lower limb where there is limited protective muscle coverage. From the knees and hocks down there is simply a covering of skin over vital structures such as tendons, ligaments, joints and bones. For this reason, wounds on the lower parts of the legs tend to be more life-threatening than those occurring higher up on the body.

## HEALING OF LOWER LIMB WOUNDS IS PROBLEMATIC DUE TO A MULTITUDE OF FACTORS.

### 1. Contamination

The closer proximity to the ground means that contamination with dirt/mud, manure and urine can occur at both the time of injury and also repetitively during the healing process.

### 2. Poor Vascularisation

In comparison to the upper body, the lower limbs are poorly vascularised resulting in slower rates of healing due to reduced overall blood flow volumes. Additionally, if a major limb vessel is damaged as part of the injury, there can be a further reduction and tissue hypoxia is a commonly encountered. The full extent of this blood flow disturbance may not be evident until 5-7 days post injury when extensive skin sloughing can occur.

### 3. Immobilisation

Wounds in this location can be difficult to suture due to the skin damage and contraction of edges (and loss of skin in avulsion cases) post injury. There is a 4-6 hour window of opportunity in which a wound can be stitched after an injury occurs, however most wounds are not found within this period and as a result devitalised (cold) tissue is commonly encountered and is not suitable for stitching. Even if a wound can be stitched, wound breakdown is common as immobilisation of the affected area is a challenging task as not all horses are amenable to restrictive bandaging and box rest. As a result, most lower limb wounds heal by granulation (second intention healing) which can be a long and expensive process.