

## Navicular Syndrome

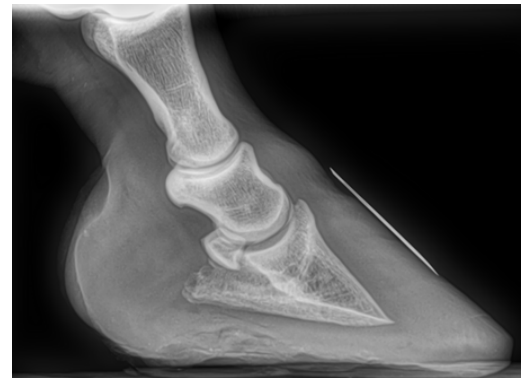
Navicular syndrome is a relatively common cause of forelimb lameness and the term is used to describe many different causes of pain from the navicular region – not just the navicular bone itself.

Most cases of lameness more associated with the bone can cause an intermittent, shifting, forelimb lameness that can affect both front feet. It is more commonly seen in middle aged horses often in irregular exercise, although is seen in younger horses as well.

There is a hereditary predisposition to this form of navicular syndrome, which can be exacerbated by poor conformation of limbs and hooves, or irregular shoeing often in irregular exercise. In addition, repeated concussion of hooves on hard surfaces can aggravate the condition.

### Anatomy

The navicular bone is located within the hoof capsule, just behind the pedal bone. Running behind the navicular bone is the deep digital flexor tendon (DDFT) - one of the main flexor tendons that starts as a muscle above the horse's knee joint and continues down the back of the lower leg as a tendon. It runs around the navicular bone to attach onto the pedal bone.



In order to prevent friction and tearing of the deep digital flexor tendon on the navicular bone, there is a navicular bursa, or synovial sac. This fluid within the bursa acts as a cushion between the two structures, and allows the DDFT to glide easily back and forth along the navicular bone. There are also ligaments which attach to the navicular bone acting to hold it in place within the hoof capsule.

### Predisposing factors

Certain predisposing factors can create abnormal forces in the foot region, such as stretching the time between shoeing. The horse's toes will become too long and heels too low, leading to an increased pressure between the bone and flexor tendon. This causes pain in the heel region of the hoof. In addition, increased concussion on horse's hooves, such as fast work on roads or frozen ground, can result in remodelling of the navicular bone and supporting ligaments which causes pain. Over time, continued concussive forces and remodelling results in degenerative changes of the bone.

Horses with heel pain tend to land toe-first in an attempt to unload the heels. Unfortunately this also leads to a vicious circle – it has been found that there is an increased tension within the DDFT in affected horses to enable the toe-first landing.

However this tension also increased pressure on the navicular bone causing more pain. They also may occasionally stumble and show a stiff shuffling gait with a high head carriage and rigid neck. When lunged on a circle, forelimb lameness will usually be seen in the limb that is to the inside of the circle

## Diagnosis

In order to diagnose navicular syndrome, first nerve blocks and then secondary bursal blocks with concurrent x-rays are usually needed. Blocking one foot may then shift the lameness to the opposite foot. We now know that the majority of cases of Navicular Syndrome are a combination of both bony and soft tissue injuries. An MRI scan is the only way to fully evaluate both of these.



These soft tissue injuries can cause a much more pronounced lameness, and can also just be in one leg – just like any acute tendon injury. However MRI scans have also shown that most cases of navicular syndrome aren't just the bone, or just the soft tissue – but rather a combination of both.

## Treatment

Special shoes and/or pads may be required for horses with low heels until they have grown to correct length. Eggbar shoes help to support the heel area and can correct the abnormal centre of gravity seen in horses with long toes and collapsed heels. Rolling the toe of the shoe can ease the breakover, therefore taking some stress off of the DDFT.

Remember that it will take time to gradually make changes to any horses hoof conformation. Expect it to be two-three months depending on individual hoof growth for lameness to subside.

Unfortunately the treatment for primarily bony lesions are completely different to soft tissue injuries. A horse with bony changes will benefit from corrective shoeing, regular exercise along with bursal medication and/or the use of Osphos. Oral anti-inflammatories help to keep the horse comfortable for the regular light exercise. When concurrent soft tissue injuries occur, the outlook is much worse and treatment is largely based around a period of strict rest to allow tendon or ligament injuries to heal

Some cases may require keyhole surgery (bursoscopy) to treat tears to the tendon. Conservative treatment can include shoeing with elevated heels, a fairly prolonged period of box rest and then a slow walking exercise program to treat the tendon injury. As with all conditions if you suspect any lameness chat to your vet and investigate it early to allow the best possible prognosis.

If you would like any additional information please call us on 01577 841010.