

## What is Navicular Disease?

Navicular disease is a common cause of lameness in the horse, specifically the Quarter horse, but can affect any breed. The navicular bone is a small, fan shaped bone located in the heel of each foot, right at the level of the heel bulbs. Horse with navicular disease or syndrome, typically will have a short strided forward phase of the stride as well as increased pain to the heel region when hoof testers are applied. Typical diagnostics completed are nerve blocks to help isolate the pain the heel region as well as x-rays to evaluate the integrity of the navicular bone. In today's day and age, MRI's are becoming a new method of evaluating the bone and surrounding tissue as is ultrasound exams. When evaluated with x-rays, many of these horses demonstrated bone loss or lysis of the navicular bone, which indicates bone degeneration. Causes of navicular disease are only theories at this point and in my eyes are very similar to those associated with laminitis. Those include conformational flaws, poor shoeing habits, repetitive trauma to the heel region, altered blood circulation to the heels as well as nutrient deficiency. One thing that is becoming clear as a potential underlying cause is oxidative stress, but there is much research still needing to be completed in this area.

Navicular disease can be a devastating diagnosis with a long term poor prognosis. It has been noted to end careers and even lead to euthanasia due to uncontrolled pain. Typical therapies include the use of non-steroidal anti-inflammatories (NSAIDs) such as bute, medications that alter blood circulation (isoxsuprine, Trental®), regional bursal injections of steroids to relieve pain and inflammation and as a last result, denerving of the affected limb in the heel region. Other non-invasive therapies include various shoe applications, designed to help reduced strain to the heel region.

Timbercreek Veterinary Hospital, PC has evaluated a small group of navicular horses, evaluating them for signs of oxidative stress using the FRAS-4 device. In the small group sampled, all affected horses demonstrated some degree of elevated d-ROM (free radicals) and a reduced antioxidant potential in most cases. This is indicative of oxidative stress. The question remains as to whether the oxidative stress is secondary to the navicular degeneration or is the oxidative stress the primary cause of the condition. The answer to that question may come with time and more research trials, however, it was noted that these horses responded favorably to the use of Cur-OST®.