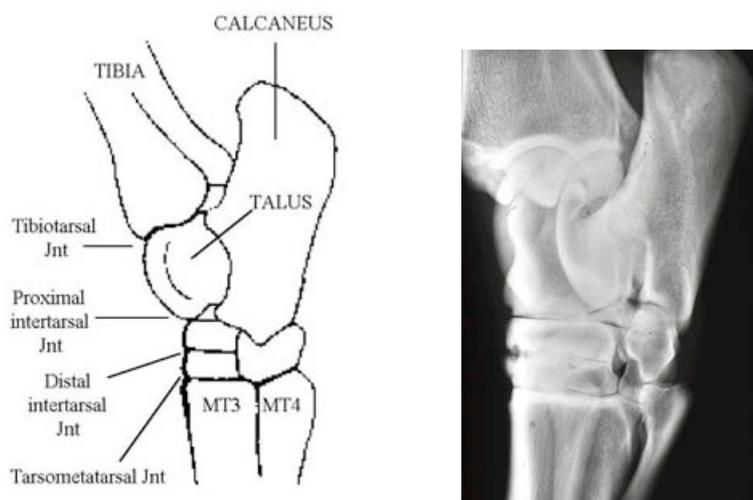


## BONE SPAVIN FACT SHEET

### *What is Bone Spavin?*

Bone spavin is osteoarthritis, or the final phase of degenerative joint disease (DJD), in the lower three hock joints. It usually affects the two lowest joints of the hock (the tarsometatarsal and the distal intertarsal joints), with the third joint, the proximal intertarsal, being the least likely to develop bone spavin (Fig. 1). The condition is most commonly seen in teenage to elderly horses, although it can also occur in younger horses less commonly.



**Fig. 1:** Anatomical diagram and radiograph (x-ray) of the equine hock joints

### *Causes of Bone Spavin*

- **Cartilage compression**

Excessive compression can cause, over time, the cartilage between the upper and lower surfaces of the lower tarsal bones to become compressed and eroded. The joint spaces then become smaller and new bone growth may occur.

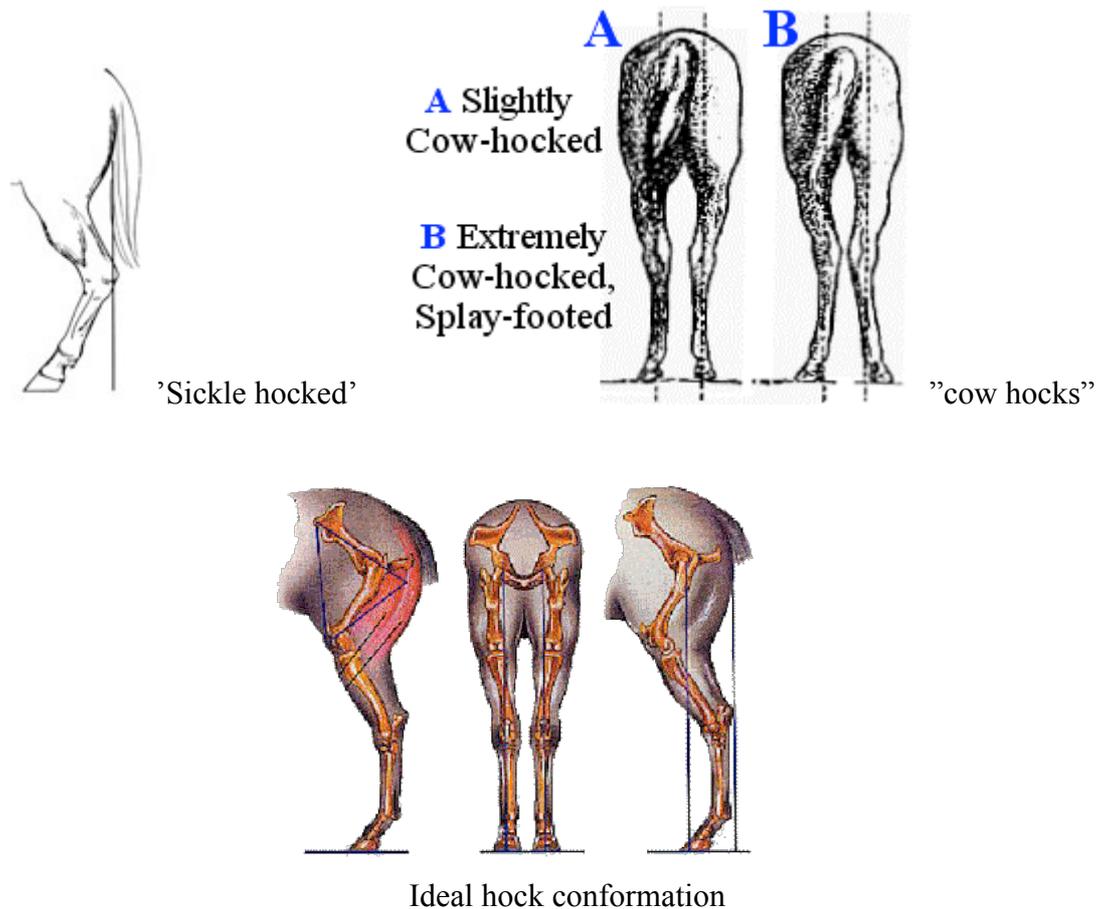
- **Uneven loading**

Uneven loading causes excessive compression of the cartilage and bone on one side, and strain in the joint capsule and supporting ligaments on the other side. When the joint is repeatedly overloaded, exostoses, or 'bone spurs', occur. Strain of the supporting ligaments can cause exostosis around the joint as well.

### ***Contributing factors***

- **Conformation**

There are several conformational defects that contribute to bone spavin. Conformations that cause uneven loading of the hocks, such as “sickle hocks”, “in at the hocks” and “cow hocks”, are especially noteworthy (Fig. 2). Poor trimming or shoeing can also contribute to bone spavin in any horse, no matter what their conformation.



**Fig. 2:** Various hock conformations. Cow and sickle hocks predispose a horse to bone spavin.

- **Activity**

Types of activities, such as dressage, show jumping, hunting and racing, which require much hock flexion or where there may be excessive concussive forces acting on the hock joints, may contribute to uneven or repeated loading of the lower hock joints, and thus bone spavin.

- **Other Factors**

"Juvenile spavin" is the occurrence of bone spavin in horses less than 3 years old. It usually occurs before the animal has done much work. While osteochondrosis lesions are the likely cause in some cases, this condition can also occur secondary to the distortion of the cuboidal bones which can occur in premature or dysmature foals.

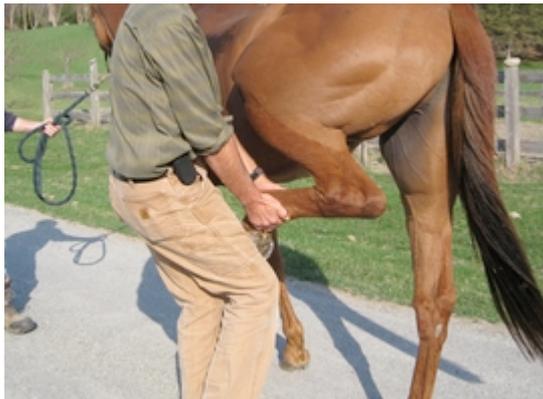
### ***Signs of Bone Spavin***

Initially, signs of bone spavin may include sporadic and vague hind limb lameness. This is often just assumed to be a “stiffness” which eases off following exercise. In some instances it may even be assumed to be due to possible back pain. Some horses may become uncomfortable on one lead in particular, or may demonstrate stiffness walking downhill. Horses being used for jumping often refuse to jump.

In many cases lameness worsens, becoming more obvious and consistent. Advanced cases may have a bony swelling on the hock, typically on the inside (medial aspect) of the joint. Lameness, although usually worse in one leg, is commonly bilateral.

The affected limb usually lands toe-first, wearing down that foot faster than the other. The affected limb usually has a shorter, lower arc than the other foot, as the horse is trying to reduce the painful flexion of the joint, so the leg appears to drag.

Performing a flexion test of an affected limb often produces a temporary worsening of the lameness. Such a response to a flexion test would be supportive, but not diagnostic, of bone spavin. A flexion test involves holding the hock in forced flexion for 30-60 seconds before trotting the horse away immediately.



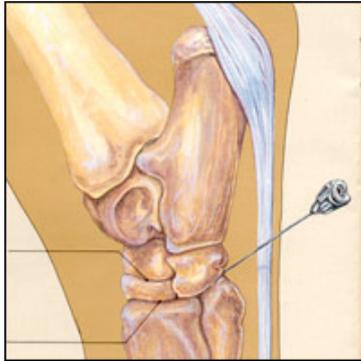
**Fig. 3:** Hindlimb flexion test

### ***Diagnosis of bone spavin***

A provisional diagnosis of bone spavin should usually be supported by further investigation in order to confirm the diagnosis. This has to be done in a logical, progressive fashion in order to make an accurate diagnosis.

#### **1. Intra-articular local anaesthesia**

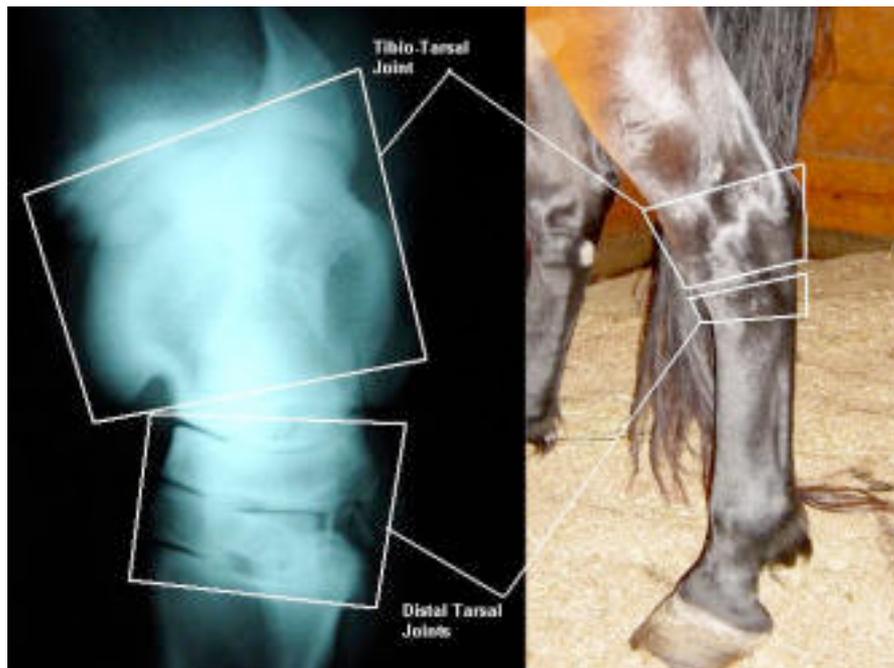
Anaesthesia of an affected joint is a more definitive way of confirming the presence of pain arising from that joint (Fig. 4). Introduction of 3-5ml of local anaesthetic into a joint should abolish, or at least significantly lessen, the lameness. This technique is not absolutely specific, as the distal pouches of the tarsometatarsal joint are immediately adjacent to the suspensory ligament. This means that anaesthetic in the tarsometatarsal joint can occasionally desensitize pain arising from suspensory ligament, giving the false impression that joint pain has been abolished. All injections into joints should be performed under sterile conditions.



**Fig. 4:** Diagram showing a needle inserted into the tarsometatarsal joint

## 2. X-ray (radiography)

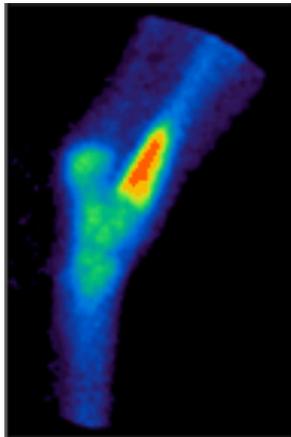
It is usually necessary to take four different X-rays of the hock, all from different angles (Fig. 5). Typical radiographic changes include bony spurs, new bone, bone destruction and/or narrowing of the joint space or even fusion of the joints.



**Fig. 5:** Lateral radiograph of a normal hock joint

### 3. Scintigraphy

Scintigraphy (bone scan) can help in complicated cases to differentiate between suspensory origin desmitis and bone spavin (Fig. 6).



**Fig. 6:** Scintigraphy of the hock showing a “hot spot” (red area), a site of likely bone “inflammation”.

#### *Treatment of Bone Spavin*

Bony changes of the lower hock joint are irreversible. It is possible, however, to manage the problem and thereby slow the progression of the bone spavin, ease the pain, and control the lameness. Surgery is an option for horses that do not respond to conventional treatments.

- **Medications**

Non-steroidal anti-inflammatory drugs (NSAIDs), such as equipalazone (bute) may help improve the lameness in the horse. However, it is important to note that high doses of NSAIDs given long term can cause kidney damage, as well as gastric ulcers. NSAIDs are also illegal in competition, so it may be necessary to stop treatment with NSAIDs several days before the horse competes.

Corticosteroid injections into the lower hock joints may solve the lameness of the horse for several weeks or months. Unlike other joints, the drugs can be repeatedly injected into the lower tarsal joints as needed. Again, it is important to check association rules to see if corticosteroids are permitted or not in competition, so that they may be discontinued before the horse competes.

Other joint medications, like hyaluronic acid and polysulfated glycosaminoglycans (PSGAGs), may help alleviate the pain if the horse has mild bone spavin. However, they are less useful for treating moderate or severe cases.

- **Shoeing**

Proper shoeing is critical in the management of a horse with bone spavin. Shoes most helpful for these horses include shoes that assist in breakover (like a square or rolled toe, or shoes with wedge pads). Shoes with heel support may also help horses with bone spavin, such as egg bar shoes.

- **Exercise and work**

It is best for a horse with bone spavin to be exercised daily. Preferably, this should be ridden or driven work, as lunging exercise places uneven stress on the joint. Pasture turnout may not be beneficial if the horse does not move much.

It is best to decrease the intensity of the workload for a horse with bone spavin. However, even with careful management, bone spavin will progressively get worse, and the animal may not be able to continue at the level of competition it was first used for once the lameness is consistent. However, many horses can still be successful in a less-strenuous career. Frequent, light exercise is much better than no exercise at all, and a change of career may prolong the horse's useful life.

- **Surgery**

Bony fusion of the joint (arthrodesis) may end the lameness, as the joint has then become stable. However, this may take many years, or never occur. In these cases, surgery may be an option.

Surgical options include destruction of the joint cartilage with a drill bit and possibly filling the holes with bone grafts or chemical arthrodesis, where a caustic substance is injected into the joint to destroy the cartilage. After both procedures, the horse will be lame for weeks or months, until the joint has fused.

Exercise can help accelerate the fusion of the bones, so exercise on anti-inflammatories is usually prescribed following surgery.

### ***Prognosis for Bone Spavin***

The prognosis for bone spavin varies, depending on several factors including:

- Particular joints involved
- Number of joints affected
- Severity of the bony changes within these joints
- How quickly the horse's condition is worsening
- What the horse is used for

Most horses cannot continue at a high-level of competition for long. However, many horses can continue happily for use as a trail or pleasure horse, or for light work.

***If you are worried your horse has bone spavin or is lame, please phone the Dick Vet Equine Practice on 0131 445 4468 and ask to speak to one of our vets.***