

Lameness is undoubtedly one of the main reasons to call the vet, so if you've never had a horse who has gone lame for any length of time, you've been extremely lucky! Probably the most common cause of chronic lameness and poor performance in horses, ponies and donkeys in the UK is osteoarthritis. But while it's a degenerative condition that can't be cured, there is much that can be done to help manage it and prolong affected horses' working lives.

What is osteoarthritis?

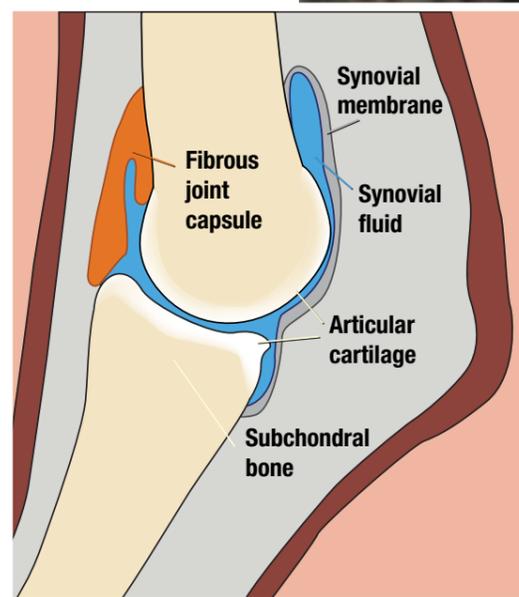
Osteoarthritis (OA), or degenerative joint disease (DJD), is characterised by inflammation and progressive degeneration of joint cartilage and the development of new bone, resulting in joint pain and loss of normal function. Virtually every joint in the body can be affected, including those of the jaw, neck, back and pelvis, so the condition should not be considered exclusive to the limbs.

The primary role of any joint is to allow the smooth articulation of two adjoining bone surfaces, while at the same time providing both the strength and the resilience necessary to withstand the forces and shocks generated during movement and weightbearing. It is the presence of articular cartilage covering the subchondral bone (the area of bone just below the cartilage) that allows the two surfaces to glide over one another with virtually no friction, even when under substantial loading.

In cases of osteoarthritis, however, there is progressive deterioration and erosion of this articular surface and remodelling of the underlying bone, leading to loss of normal joint function and gradual joint destruction.

How horses get arthritis

In the majority of cases, osteoarthritis is caused by low-grade, repetitive trauma, which can occur as a result of poor conformation, poor action or simply 'wear and tear' over a long and strenuous athletic career. Occasionally, however, a one-off traumatic incident, such as a fracture, will also result in osteoarthritis if there is damage to the cartilage or subchondral bone of the joint.



Photos: Bob Atkins, Steve Bardens

Arthritis

– medicate and mobilise

Could arthritis be affecting your horse's performance?



Paul Smith BVM&S
CertEP MRCVS from
Westmorland
Veterinary Group
tells you everything
you need to know

The main cause of chronic lameness and poor performance in horses in the UK is osteoarthritis

Signs of trouble



Pain is one of the hallmarks of osteoarthritis and is the major cause of lameness associated with the disease, but the degree of pain does not necessarily indicate the severity of the joint damage. Articular cartilage is

unique in that it doesn't have any sensory innervation, so cartilage erosion can progress 'silently' for a long time and horses can have advanced changes before you or your

instructor detect that there is anything wrong.

Horses with degenerative joint disease will often appear stiff, requiring longer to warm-up for ridden work. Their athletic performance may also deteriorate or they may appear lethargic, with failure to track-up properly. There could be more specific signs, such as swelling of the affected joint or the appearance of bony lumps adjacent to it (see left), or you may notice a reduction in the range of motion of the limb.

Often, farriers begin to report resentment to shoeing due to the discomfort of having the diseased joint flexed for prolonged periods of time.



Pinpointing the pain

Osteoarthritis can often be suspected based on the horse's history and clinical symptoms alone, but in many cases further investigation is necessary to confirm the diagnosis and assess the extent of the changes in the affected joint.

Physical examination

For the majority of lameness investigations, veterinary surgeons follow a systematic approach, starting with an initial physical examination of your horse, followed by analysis of his gait. This usually involves assessment of your horse at walk and trot in a straight line, as well as on the lunge, on both firm and soft surfaces. Flexion tests, where specific joints are flexed with moderate pressure for 40 to 60 seconds, may be performed to try and localise the source of lameness to a particular joint, but responses can be variable and potentially misleading.

Osteoarthritis is often a bilateral (two-sided) condition, but lameness in the opposite limb may not be obvious until the joint in the more severely affected limb is desensitised.

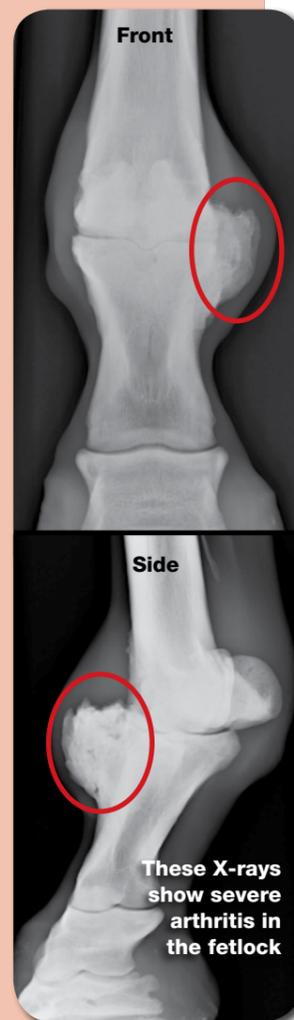
X-rays

Once the source of lameness has been identified, it is necessary to try and assess the degree of structural damage to the joint. Traditionally, this is done by obtaining X-rays of the area. The advantages of using X-ray are that it is widely available, non-invasive, cost-effective and relatively quick to perform.

However, because articular cartilage cannot be seen on X-rays, early arthritic lesions may go undetected if there are no changes in the subchondral bone. It is also worth pointing out that visible radiographic changes do not always equate to clinically significant disease. This is why injecting local anaesthetic into the joint should be used in combination with X-ray, to confirm whether or not the joint is causing the pain.

More advanced techniques

There are a number of other, more advanced imaging techniques available to detect early or more subtle lesions. These include scintigraphy (bone scan), magnetic resonance imaging (MRI) and computed tomography (CT). These methods are useful in cases where there is a decline in performance without overt lameness. However, the costs involved and more limited availability may be prohibitive. It is common practice to image the same joint in both limbs, regardless of the technique used, because osteoarthritis is so often a bilateral problem.



During a lameness investigation, a vet will analyse your horse's gait

Joint blocks

A commonly used technique in the diagnosis of osteoarthritis is the injection of local anaesthetic into the affected joint. If the joint injected is the source of the horse's discomfort, then the local anaesthetic should alleviate the lameness, causing the horse to appear much more comfortable when he is next trotted up.

Treatment limitations

The major limiting factor in the successful rehabilitation of any joint after injury or disease is the inability of articular cartilage to regenerate and repair effectively. Damaged articular cartilage is usually replaced by fibrocartilage, which has inferior biomechanical properties and is often not resilient enough to withstand use in the competition horse.

As such, osteoarthritis is widely regarded as an incurable condition, but fortunately there are now a wide range of treatment options available. The two

main goals in the management of equine osteoarthritis are to relieve pain and to arrest, or at least slow, progression of the joint degeneration. Sadly, in some horses the joint deterioration is so severe that it cannot be managed medically or by conventional surgical techniques, and in such cases euthanasia may be considered.

If one limb has osteoarthritis, it's likely that the opposite limb will have it, too

Medicinal options

Medications used in the treatment of osteoarthritis can be broadly divided into two groups...

- symptomatic agents, such as phenylbutazone (bute) and Suxibuzone (Danilon), used for their pain-relieving properties.
- disease-modifying agents, such as glycosaminoglycan compounds, corticosteroids and potentially nutraceuticals (supplements), such as glucosamine and chondroitin.

Nonsteroidal anti-inflammatory drugs (NSAIDs) are incredibly useful for their ability to reduce the pain and inflammation associated with joint disease. They are widely used and bute has played a key role in the management of osteoarthritis for over 40 years. Moderate doses are well-tolerated over long periods, although it is important to be aware that high doses can lead to toxicity, affecting the digestive tract and kidneys.

Corticosteroids, such as methylprednisolone (Depo-medrone) and triamcinolone (Adcortyl), are the most potent anti-inflammatory agents used in the treatment of osteoarthritis and are normally injected directly into the affected joint. Corticosteroids have been associated with laminitis, but provided they are not used in large doses or frequently over long periods, the beneficial effects generally outweigh the risks and can result in improvement for up to six months.

Hyaluronan, also referred to as sodium hyaluronate or hyaluronic acid (HA), is a glycosaminoglycan compound, and an important component of articular cartilage and joint fluid. Although the specific mode of action of hyaluronan in joint disease is uncertain, it is thought to have modest analgesic and anti-inflammatory effects.

Hyaluronic acid can be given intravenously (into the vein) or injected directly into the joint, and when used in combination with corticosteroids it has been shown to give a better and longer-lasting effect than corticosteroids alone.

IRAP (Interleukin-1 Receptor Antagonist Protein) is a relatively new treatment for osteoarthritis which harnesses the regenerative and anti-inflammatory properties of the horse's own white blood cells. About 50mls of blood is collected from the horse and incubated in a special syringe designed to promote the production of potent anti-inflammatory proteins by the white blood cells. After 24 hours, the serum and the proteins it contains is separated from the cells before being injected directly back into the affected joint. Several doses can be harvested and frozen for repeat administration at weekly intervals.

Other treatments, such as an intravenous infusion with tiludronic acid (Equidronate) or intramuscular injections of polysulphated glycosaminoglycans (Adequan & Cartrophen) can be prescribed, tailored to your horse's particular needs. Some horses need a one-off treatment, while others may require more frequent injections.

Surgical options

Occasionally, keyhole surgery (arthroscopy) may be necessary to fully visualise the inside of the joint and to assess the full extent of the cartilage damage. This is especially true in horses with no obvious changes on radiography. An additional benefit of surgical exploration is that it also allows the removal of any loose fragments of bone and degenerate cartilage.

For horses with arthritis in low-motion joints, such as the pastern or lower hock joints, joint fusion (arthrodesis) can be performed to resolve lameness and preserve athletic function. This is where the cartilage is destroyed and the bones either side of the joint fuse together to form one.

Fusion of the lower hock joints may occur naturally by continuing work and/or intra-articular corticosteroids, however, this process is usually lengthy and fusion may not occur. The process can be enhanced by injecting ethanol or by drilling the joint to remove some of the cartilage and encourage bony union.

Fusion of high-motion joints, such as the coffin, fetlock or knee, can be performed, but is generally restricted to salvage animals for breeding purposes or for pasture retirement.



Keep him mobile

As well as medical treatment, little tweaks to your horse's management regime can make all the difference...

Exercise



Prolonged periods of exercise, or that which puts excessive strain on joints, such as lunging or repetitive work, should be avoided. But regular light to moderate exercise is beneficial in improving the range of joint motion and muscle tone.

Managing sore muscles

Horses with hindlimb pain often have back and pelvic muscle soreness, whereas those with forelimb problems often have neck and shoulder muscle pain. Massage, heat and acupuncture may help relieve sore muscles, as can stretching exercises and longer warm-up periods.



Turnout



Turning your horse out is preferable to stabling, which generally results in increased stiffness and pain.

Weight management

Body weight should be reduced to minimise mechanical stress on the joints.

Remedial farriery

Correcting any hoof imbalances and easing breakover by shortening and rolling the toe may help in horses with osteoarthritis.

Joint supplements

Glucosamine and chondroitin form the building blocks of cartilage and several studies have demonstrated a beneficial effect when administered orally to horses with osteoarthritis. Joint supplements are not considered pharmacological agents and as such are not subject to the same rigorous quality controls, so if you are going to use them, it is prudent to purchase one made by a reputable manufacturer.

Complimentary therapies

There are a wide variety of complimentary therapies that are used in the treatment of chronic arthritic pain in horses. These include, but are not limited to, physiotherapy, acupuncture, extracorporeal shock wave treatment, magnetic therapy, transcutaneous electric nerve stimulation (TENS), therapeutic ultrasound and laser therapy. But of these, few have been subjected to scientific scrutiny and much of the evidence surrounding their use in horses is anecdotal.



Always use feed supplements made by a reputable manufacturer

It's difficult to predict how a horse is going to respond to treatment, as each case is different

Did you know?

'**Bone spavin**' refers to osteoarthritis of the distal hock joints in the lower part of the hock.

'**Bog spavin**' refers to fluid distension of the tarsocrural joint (the main joint of the hock), which may or may not be caused by osteoarthritis.

'**High ringbone**' refers to osteoarthritis of the pastern joint.

The **fetlock** is the joint most commonly affected by osteoarthritis in the horse, possibly because it is one of the smaller joints and bears the full weight of the animal over a small area during each stride.

Osteoarthritis of the pastern (high ringbone) and lower hock joints (bone spavin) occurs most commonly in older horses, in contrast to osteoarthritis of the knee or fetlock which is often seen in younger animals.

Looking to the future

The prognosis for horses with osteoarthritis is dependant on the severity of the disease process as well as the individual horse's tolerance to pain. It is difficult to predict how a horse is going to respond to treatment and what level of work they will be able to attain. But quite often, with the help of a balanced exercise regime, medication and rest as appropriate, it may well be possible for your horse to return to a reasonable level of athletic performance.

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