

Managing Joint Health

*Learn about joint treatments in the
equine athlete. Second in a series*

By Dr. Steve Fisch

LAST MONTH, WE DISCUSSED THE PROPERTIES OF a healthy joint vs. unhealthy joint as it relates to balanced joint health. We discussed different reasons a joint might become unhealthy and management methods that might help keep a joint healthier, give the equine athlete a longer and more productive career, and the importance of a complete lameness examination with the use of diagnostics to pinpoint the area and cause of the lameness or soreness.

This month, we assume that a complete diagnostic workup and lameness examination has been performed and that the source of lameness has been pinpointed to a certain joint or joints. With that information, the team of trainer, owner and veterinarian can use the most up-to-date information to decide on a course of therapy that is best for everyone involved, with the horse at the forefront of that equation.

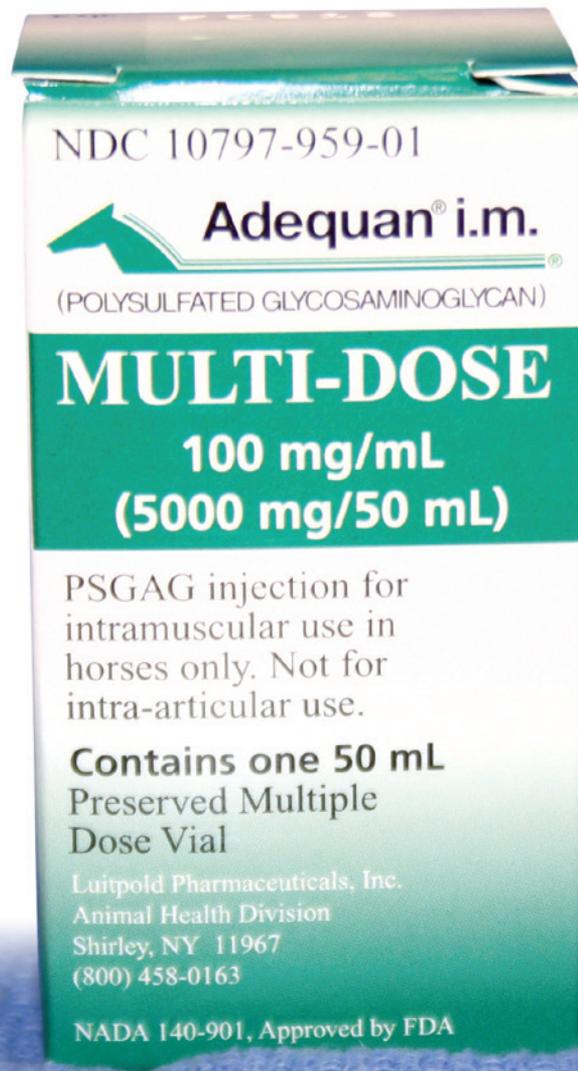
Prevention

PREVENTION IS ALWAYS A GOOD PLACE TO START on balanced joint health. Long-term soundness starts with genetics – when breeding, choosing horses with a history of soundness is a major step in preventing lameness.

The feet are the foundation of the boney column of the leg. Therefore, a balanced, correctly trimmed and shod foot goes a long way toward preventing abnormal wear and tear on joints by allowing the pressures on the joint to be in balance from one side to the other, instead of tight on one side of the joint and loose on the other. A joint above an unbalanced foot, such as one with an under-run heel/long toe configuration, will wear like a tire that is out of alignment.

Also note that certain training methods lend themselves to healthier joints.

To keep your horse healthy, explore preventative options, such as proper training and shoeing, as well as therapeutic medications such as Adequan.



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Preventive Supplements

THERE ARE A MULTITUDE OF JOINT SUPPLEMENTS THAT CLAIM TO do everything from dissolving chip fractures to promoting health by increasing the level of hyaluronate in the joint to removing OCD (osteochondritis dissecans) lesions. These supplements all fall under the class of medication known as nutraceuticals.

Nutraceuticals are not regulated by the FDA; therefore it is up to each company to make sure its product meets its claims. There are some companies that actually do research to test their product to a great degree, but many do not. Beware of the phrases “clinically tested” and “veterinary approved.” These phrases mean different things with different companies. Nutraceuticals are an area that you can spend your money wisely or you can totally waste it. Be sure to use a trusted product.

There are other medications that can help protect the joint. Polysulfated glycosaminoglycan, sold as Adequan, has been proven to go to the joint after an intramuscular injection. Depending on the horse’s training schedule, a weekly,

biweekly or monthly injection schedule might help maintain a balanced joint by helping the joint produce its own hyaluronate and decreasing enzymes and inflammation that are harmful to the joint. There are many forms of polysulfated glycosaminoglycan being sold, but these formulations might differ in properties such as pH and other factors that affect bioavailability. Adequan can also be used to treat an unhealthy joint by using a dose regimen decided upon by the veterinarian team. It can be injected intramuscularly, but can also be given intra-articularly (injected into the joint).

Helping Heal Damage

JOINT DISEASE IS A PROCESS. IT CAN START WITH A LITTLE SYNOVITIS (inflammation of the joint lining) and general inflammation. This leads to pain, which leads to abnormal use of the limb, which leads to abnormal weight bearing on the opposite limb. This leads to a cascade of problems, including abnormal wear and tear on the opposite leg. This domino effect makes prevention such an important component of the treatment of joint disease.

Depending on the severity of the problem, rest is always part of a good therapeutic regimen for a horse with an unhealthy joint. In a very mildly inflamed joint, a little rest might be all that is needed to let the inflammation subside and the joint return to a healthy state of equilibrium. However, even the most mildly inflamed joints can usually benefit from anti-inflammatory therapy from non-steroidal anti-inflammatory drugs such as phenylbutazone and flunixin or firocoxib.

These medications can help stop the pain cycle and get the joint back in balance. The overall picture of the individual horse's situation should be part of the team's decision on how much rest and anti-inflammatory therapy is necessary before moving to more aggressive joint therapy. Related health concerns, such as the possibility of gastric ulcers being caused by the use of NSAIDs, need to be addressed as well. In many cases, early and aggressive therapy is more beneficial to the joint than the "wait and see" treatment route. Both have their place. All the facts have to be known to decide which course is best.

Joint Injections

IF MORE AGGRESSIVE JOINT THERAPY IS WARRANTED, THEN THERE are several methods of intra-articular treatment. In more advanced cases, intra-articular treatment will usually work faster versus more conservative therapy.

Corticosteroids are the most potent anti-inflammatory medications used to treat osteoarthritis. It has been found that lower doses in each joint work as well as high doses. Some steroids, such as triamcinolone, can have protective benefits at low doses by inhibiting the manufacturing of harmful substances in the joint. Steroids also have the advantage of being relatively inexpensive. However, at high doses, some corticosteroids can be harmful to a joint in the long term by inhibiting proteoglycan synthesis and negatively affecting the structural organization of cartilage.

Corticosteroids must be used judiciously. Random injections of joints with high doses of certain steroids may give a short-term benefit, but long-term, they can shorten the horse's career or at least cause him to drop to a lower class of performance.

Hyaluronate serves as the principal lubricant of the synovial soft tissues. HA has been documented to reduce pain and increase joint mobility, has anti-inflammatory and mild analgesic effects, and improves range of motion by increasing joint fluid viscosity.

Injecting a joint with HA also has the benefit of stimulating the joint's synoviocytes to produce their own HA. HA helps regulate the production of destructive enzymes in the joint. All these factors provide a protective response by the synovial membrane to joint inflammation. This is a good reason to inject HA into a joint that might be inflamed, especially in a horse that is performing at the highest level of competition. Very often, it is the horses that are performing at the highest level and giving it their all that have inflamed joints. Quickly decreasing the amount of inflammation in a joint slows the degradation process and improves joint health.

HA medications for intra-articular injection are made by several companies and vary widely in costs. Clinical experience says that the higher molecular weight HA preparations provide the most beneficial effect. This is comparable to the viscosity and weight of a motor oil. The more intensely the motor is used, the higher weight and better-grade oil the motor will require. The same holds true with HA. The "thicker" HA usually provides better results. The bad news is it usually cost more than the lower molecular weight HA products.

Using Injections

HA AND CORTICOSTEROIDS ACTUALLY WORK SYNERGISTICALLY when injected together. The joint quickly gets the anti-inflammatory effect of the corticosteroid. This "cools" the joint so that the destructive enzymes in the joint do not destroy the newly injected HA. The HA lubricates and this secondarily decreases inflammation and joint pain.

How long the injection lasts depends on the condition of the horse's joint and his competition schedule. In extreme cases, a horse might need a follow-up injection two to three weeks after the first injection. But routinely, a horse that is showing no lameness or pain probably does not need to be injected again so quickly. If the joint is in equilibrium and is

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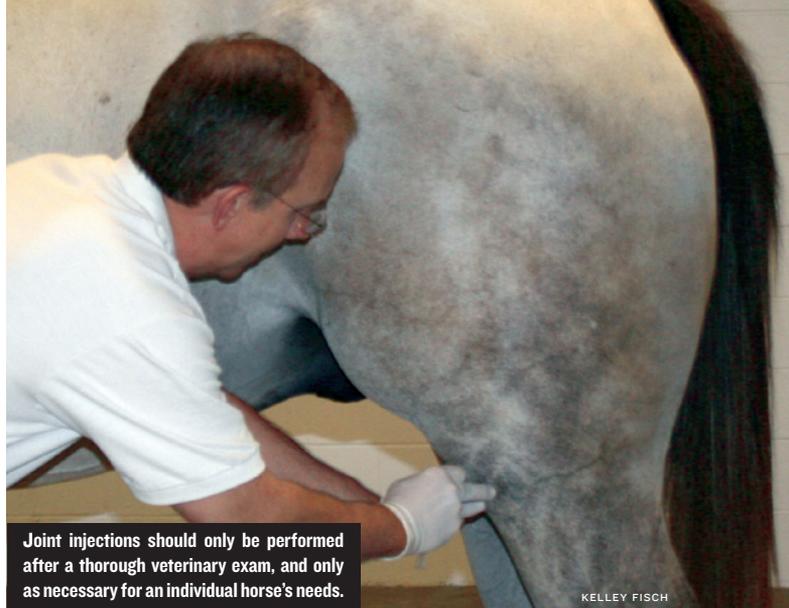


When using hyaluronate in joint injections, it is important to pay attention to the molecular weight – generally, the higher it is, the higher quality it is.



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It is vital to clean the area prior to joint injections.



Joint injections should only be performed after a thorough veterinary exam, and only as necessary for an individual horse's needs.

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healthy from being injected, there is little indication that injecting the joint again two weeks later will be beneficial, just because he has a show or race to compete in.

How often is normal? Again, it depends on the use of the horse and the condition of the joint. Some horses get injected every two years, some every two months. There is little or no benefit from injecting a healthy joint. It is always better to pay attention to the joint for signs of inflammation and decreased performance level to decide if it is time for an injection versus just having the horse on a set injection schedule.

My clients often ask whether injecting a joint once will cause the horse to always need injections afterward. That a joint was injected is not what might require it to be injected again in the future. That the joint is not in healthy equilibrium is what causes the need to be injected. The joint does not get addicted to joint injections. Actually, a well-timed injection in a properly diagnosed joint will often be the only time the joint gets injected. It is the joints with chronic problems that need to be injected more often.

IRAP

ONE OF THE PRODUCTS OF INFLAMMATION IN A JOINT IS A protein molecule known as interleukin-1. A relatively new treatment tool that equine veterinarians have is interleukin receptor antagonist protein, aka "IRAP," which blocks the interleukin's ability to attach to the joint cells and cause damage. Made from the horse's own blood, IRAP is incubated for 20-24 hours with chromium-coated glass beads. It is then put in a centrifuge and the serum is filtered. The filtered IRAP is then injected directly into the affected joint. The joint is normally injected weekly for three weeks and then as needed. IRAP many times works well in a joint that is no longer responding to HA and steroids. It is also a good choice if overuse of steroids is a concern.

Platelet-Rich Plasma

PLATELET-RICH PLASMA IS ANOTHER TOOL FOR TREATING joint disease. Platelets are one of the three main types of blood cells. They are filled with beneficial growth factors that help repair tissues. PRP is commonly used to treat tendon and ligament injuries and is being used more and more to treat joint disease by injecting the PRP directly into the joint. This procedure can be done within a couple of hours. The blood is collected in special tubes and the platelets are concentrated

with a centrifuge. Since sterility is very important when injecting joints, PRP should be prepared only in a controlled laboratory setting.

Acupuncture

THE CHINESE HAVE USED ACUPUNCTURE TO TREAT JOINT DISEASE for more than 4,000 years. Acupuncture is based on keeping the body in balance. The premise is that all disease and pain is caused by a blockage of energy (chi) flow. There are 12 main meridians, plus the governing and conception meridians, in the body. These meridians all have certain points on them. Acupuncture releases the blocked energy by the use of needles at these points. When the blocked energy is released, the inflammation subsides.

Therapeutic Goals

THE MAIN GOALS OF JOINT INJECTIONS, PREVENTATIVE THERAPY and all other types of joint therapy should be to minimize pain, improve mobility and to stop or prevent the advancement of any damage to the joint. Injecting a horse with serious joint damage such as fractures and serious cartilage damage could make the horse sound long enough to compete, thereby making him more susceptible to sustain more and potentially life-threatening injuries. Injecting the joints of a horse with injuries that might be considered career-ending is not safe and should not be done. This is why the team approach, while always keeping a horse's welfare at the forefront, is important.

Obtaining an accurate diagnosis and understanding of the problem at hand is always the first step in the treatment of joint disease and keeping those joints in balance. 

Always consult your American Association of Equine Practitioners-member veterinarian for diagnostic and therapeutic advice regarding your horse.



This is the second in a two-part series on joint injections. Dr. Steve Fisch owns AVS Equine Hospital, a full-service equine hospital and reproductive center in Tallahassee, Florida, where he and son Dr. Joe Fisch are a referral hospital for performance-related lameness. Dr. Steve Fisch is also a racehorse owner and a member of the AQHA Racing Council. For his efforts in bringing American Quarter Horse racing back to Florida, he was the recipient of the 2010 Gordon Crone Award. To comment, write to jrnlracing@aqha.org.