

## Injectable joint treatments

Supplements designed for joint health are purported to decrease inflammation, increase mobility, provide the building blocks for articular cartilage synthesis, or otherwise contribute to the overall health of moveable joints. In addition to dietary supplements that are administered orally, joint supplements are also available for intravenous, intramuscular, and intra-articular (i.e., directly into the joint) administration. The use of each of these medications is associated with pros and cons. The decision of which product or combination of products is best will depend on the joint, the horse's function and timing before competition.

Hyaluronic acid is an important component of normal cartilage and synovial fluid. It is important in giving cartilage its resilience, enabling it to resist high pressures. Within the joint fluid, HA is responsible for lubricating the cartilage and synovial lining of the joint; facilitating joint motion with minimal friction, and due to its large size, it acts as a physical barrier to other proteins and inflammatory cells from entering the joint. Supplementation with sodium hyaluronate helps to replace HA lost as a result of joint disease and thereby restores lubrication of the joint, reduces inflammatory infiltrates and minimizes ongoing damage. Hyaluronic acid can be given IV or directly into the joint in combination with a corticosteroid, when the OA has been localised to a particular joint.

Pentosan stimulates the cells of the cartilage and joint membrane lining to increase production of collagen, HA and other GAGs; components of both cartilage and joint fluid. This has the effect of improving both cartilage and joint fluid quality. Pentosan also inhibits degradative enzymes associated with cartilage destruction, inhibits inflammation within the joint, and improves blood supply to the joint. Pentosan is given IM, treating every joint in the horse.

IRAP is an anti-inflammatory that is naturally produced in the horse, that works to block the release of one of the major inflammatory substances the body after an injury. By increasing the amount of IRAP in an injured joint, it has a more dramatic and quicker effect than the naturally-occurring process. IRAP is made from white blood cells in the horse's bloodstream. Blood is collected, and via a special incubation process, IRAP production is amplified. IRAP can be administered intravenously and also intra-articularly.

Intraarticular corticosteroids are the most effective drug in controlling inflammation. Provided corticosteroids are not used in large doses, frequently over large periods, or in an attempt to treat fractures, the beneficial effects of their use generally outweigh the deleterious consequences. Note: All corticosteroids are readily detected during routine swabbing procedures, and it is important to ensure sufficient time is allowed between administration and competition. Generally the longer the possible duration of response, the longer the withhold period.

Both HA and Pentosan show excellent results in clinical trials, and our own experience with both drugs support this. Occasionally we find that a horse may show a good response to one product, but a poorer respond to another, so individual variation can be an unknown. Given the huge range of oral joint supplements available (typically containing glucosamine, chondroitin sulfate, MSM and HA, there is also the question of whether these are more beneficial than injectable products. It is important to recognize that with oral supplements, proof of efficacy is generally lacking, and studies to show poor intestinal absorption of these products.