

Equine Mobility Support Product Detail Sheet

Indications for use:

- Lameness
- Discomfort
- Lack of extension
- Swelling and inflammation, including heat in the injured area
- Resistance during everyday training, lessons, or competitions

Individual Ingredients:

- **Glucosamine** – is an important component of cartilage growth, maintenance, and repair. While research is ongoing in horses, meta-analysis of human clinical trials has confirmed the value of glucosamine in support of bone health. (Clegg et al. 2006, McAlindon 2000, Towheed 2005) In the horse, glucosamine has been implicated in regulation of matrix metalloproteinase expression, as important enzyme working in joint tissues. (Neil, 2005, Chan 2005) In practice, glucosamine is commonly used to support healthy joints, much the same way that glucosamine is used in humans.
- **Chondroitin Sulfate** – Is an important component of the extracellular matrix of connective tissue. Low molecular weight chondroitin sulfate is bioavailable in the horse, although to a limited degree. (Du 2004) While the mechanism of chondroitin sulfate action in joint health remains to be determined, it is an important component of compounds found in various functional components of the joint.
- **Flax Meal** – Contains significant levels of omega-3 fatty acids, specifically alpha-linolenic acid (ALA) and omega-3 fatty acids, which have been implicated in reducing the inflammatory response. Studies have shown that omega-3 fatty acids reduced inflammatory thromboxane and decreased endotoxin induced TNF production in horses. (McCann 2000, Morris 1991)
- **Wheat Germ Oil** – Rich source of vitamin E complex which is a powerful antioxidant. Vitamin E also helps maintain healthy joint tissue by maintaining the normal inflammation response.
- **Ginger** – Contains a broad spectrum of bioactive compounds. Several ginger compounds have well-documented effects on the inflammatory response. For example, 6-gingerol and 6-paradol have such activity, while 8-paradol and 9-shagaol have been shown to inhibit COX-2 activity. This action may explain ginger's historic uses. (Surh 1999, Tjendraputra 2001)
- **Cinnamon** – is used to mask, in part, the spicy ginger taste, improving palatability. It also makes a great smelling product.

References

- Clegg DO, Reda DJ, Hariis CL, et al. Glucosamine, chondroitin sulfate, and the two in combination for painful knee osteoarthritis. *N Engl J Med.* 2006; 354:795-808.
- McAlindon TE, LaValley MP, Gulin JP, Felson DT. Glucosamine and chondroitin for treatment of osteoarthritis: a systematic quality assessment and meta-analysis. *JAMA.* 2000; 283:1469-1475.
- Towheed TE, Maxwell L, Anastassiades TP, Shea B, Houpt J, Robinson V, Hochberg MC, Wells G. Glucosamine therapy for treating osteoarthritis. *Cochrane Database Syst Rev:* CD002946; 2005.
- Neil KM, Orth MW, Coussens PM, Chan PS, Caron JP. Effects of glucosamine and chondroitin sulfate on mediators of osteoarthritis in cultured equine chondrocytes stimulated by use of recombinant equine interleukin-1beta. *Am J Vet Res.* 2005; 66:1861-1869.
- Chan PS, Caron JP, Orth MW. Effect of glucosamine and chondroitin sulfate on regulation of gene expression of proteolytic enzymes and their inhibitors in interleukin-1-challenged bovine articular cartilage explants. *Am J Vet Res.* 2005; 66:1870-1876.
- Du J, White N, Eddington ND. The bioavailability and pharmacokinetics of glucosamine hydrochloride and chondroitin sulfate after oral and intravenous single dose administration in the horse. *Biopharm Drug Dispos.* 2004; 25:109-116.
- McCann ME, Moore JN, Carrick JB, Barton MH. Effect of intravenous infusion of omega-3 and omega-6 lipid emulsions on equine monocyte fatty acid composition and inflammatory mediator production *in vitro.* *Shock.* 2000; 14:222-228.
- Morris DD, Henry MM, Moore JN, Fischer JK. Effect of dietary alpha-linolenic acid on endotoxin-induced production of tumor necrosis factor by peritoneal macrophages in horses. *Am J Vet Res.* 1991; 52:528-532.
- Surh Y. Molecular mechanisms of chemopreventive effects of selected dietary and medicinal phenolic substances. *Mutat Res.* 1999; 428:305-327.
- Tjendraputra E, Tran VH, Liu-Brennan D, Roufogalis BD, Duke CC. Effect of ginger constituents and synthetic analogues on cyclooxygenase-2 enzyme in intact cells. *Bioorg Chem.* 2001; 29:156-163.