paw PURE ANIMAL WELLBEING By BLACKMORES

PAW OSTEOADVANCED®
CLINICAL JOINT SUPPORT CHEWS

PAW OsteoAdvanced® is a triple action anti-inflammatory chew containing a combination of natural ingredients proven to reduce inflammation, and key nutrients to support and nourish osteoarthritic joints.

BENEFITS:

- Specifically formulated with ingredients that may help to relieve the symptoms of osteoarthritis in dogs
- Curcumin, *Boswellia serrata* and green lipped mussel provide anti-inflammatory support for arthritic joints in dogs
- Glucosamine and chondroitin support healthy joint cartilage
- Boswellia supports overall joint health and mobility
- Palatable fish and chickpea chew that is easy to give as a daily supplement

WHEN TO RECOMMEND:

- Ideal for dogs with clinical symptoms of osteoarthritis, such as lameness, stiffness, altered mobility, and joint discomfort
- As part of a multi-modal treatment plan e.g. as an adjunctive for medicated pharmaceutical pain relief for dogs to aid in reducing usage over the long term

Each PAW OsteoAdvanced® chew contains:
Green lipped mussel 500mg, Glucosamine hydrochloride 500mg, Chondroitin sulphate 169mg, *Curcuma longa* phospholipid complex 100mg (equivalent to curcuminoids 20mg) and *Boswellia serrata* resin extract 40mg (equivalent to boswellic acid 27mg)

Dosage:

Dog's body weight (kg)	1 - 9.9	10 - 19.9	20 - 39.9	40+
Daily Dose	½ a chew	1 chew	1-2 chews	3 chews

Administration: Feed chew(s) daily based on bodyweight

Size: 300g Tub (Approx. 60 x 5g chews)

Warnings/Safety:
- For animal consumption only
- For veterinary supply only
- Use with precaution in pregnant or lactating animals
- This product contains seafood
- This product is not an alternative treatment for acute joint inflammation
- Always read the label and follow directions for use

EDUCATION

Glucosamine and chondroitin are key nutrients for joint health

Chondroitin sulphate is part of a family of naturally occurring compounds known as glycosaminoglycans (GAGs): long sugar polymers that are structural elements between the protein filaments of cartilage and connective tissue.[1] Chondroitin sulphate is the most prevalent GAG. It appears to protect articular cartilage by supplying it with the substrates required for repair, and by inhibiting enzymes in synovial fluid that lead to cartilage destruction.

In addition, chondroitin sulphate nourishes chondrocytes and increases the fluid content of the extracellular matrix[2], acting as a shock absorber, and transporting nutrients into the cartilage.[3] In several clinical trials, this GAG has shown the potential to stabilise, or even reverse the pathology of osteoarthritis.[4] Its therapeutic effect is gradual in onset, but can last for months after ceasing treatment, or with intermittent dosing.[5,6]

Glucosamine is a chondroprotective that stimulates the production of GAGs, as well as preventing their degradation.[7] It may also stimulate synovial production of hyaluronic acid, which is responsible for the lubricative and cushioning properties of synovial fluid.[8,9] Furthermore, glucosamine may have anti-inflammatory benefits[10] and as such, has been the subject of extensive human and animal studies as a treatment for osteoarthritis symptoms.[11,12]

Green lipped mussel (GLM) has numerous benefits

As a whole seafood, GLM is a rich natural source of lipids, multiple trace minerals, vitamins A, B group, D and E, mucopolysaccharides, and essential amino acids. However, its lipid and protein components are considered the most valuable for therapeutic activity.[13] GLM contains the marine omega–3 polyunsaturated fatty acids also found in krill and oily fish such as salmon and tuna, namely EPA (eicosapentaenoic acid) and DHA (docosahexanoic acid). However, unlike fish oil which is usually standardised to contain EPA and DHA combined with glycerol as triglycerides, GLM extracts have a higher percentage of EPA and DHA as free fatty acids.[14] In addition, some GLM extracts contain significant amounts of the relatively rare omega–3 fatty acid ETA (eicosatetraenoic acid).[15]

ETA is thought to be an inhibitor of both the cyclooxygenase (COX) and lipoxygenase (LOX) 'pain pathways', and reduces inflammation by blocking the proliferation of eicosanoids.[16] In a study with rats, ETA-rich GLM was found to be a more powerful anti-inflammatory than other omega–3 fatty acids,[17] and when compared to the NSAIDs ibuprofen[18], naproxen,[19] and piroxicam[20], it performed similarly or better than these in inhibiting inflammation and/or in arthritis scoring.

Curcumin and boswellia work synergistically to reduce inflammation[21]

Curcumin is a compound found naturally in turmeric, and is known to have potent antioxidant, anti-inflammatory, antiseptic, and anticancer properties. It has been shown to reduce pro-inflammatory cytokines, namely tumour necrosis factor-α and interleukin-1β in canine joints affected by chronic osteoarthritis.[22] Curcumin has also been shown to reduce pain associated with osteoarthritis in dogs.[23]

Boswellia serrata is a traditional plant-based supplement used for its anti-inflammatory and anti-rheumatic properties. A study by Reichling et al. showed that when boswellia resin extract was administered to dogs with radiographically diagnosed osteoarthritis, it resulted in a statistically significant reduction in the severity of typical clinical signs such as lameness, local pain, and stiffness in as little as two weeks.[24]

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