

TECHNICAL DATA SHEET



Immune & Inflammation Support **JOINT™**

Joint™ formula has been scientifically and clinically developed to facilitate the greatest opportunity for positive and effective patient outcomes in arthritic conditions. Regular use of Mountain Peak Nutritionals® **Joint™** formula will alleviate pain and inflammation in previously affected joints. **Joint™** formula's ingredients work together to maximize the body's ability to decrease inflammatory response and promote cartilage regeneration. After reviewing many clinical studies and interpreting the scientific data we decided to include 1500 mg of glucosamine sulfate as a daily recommended dosage. We don't include chondroitin sulfate because of its extremely large molecular size (16,900 daltons), which only allows for an absorption rate of 8-18% (of orally administered chondroitin sulfate) (4). Glucosamine sulfate has an absorption rate over 90%.

Supplement Facts

Serving size: 4 capsules

Servings per container: 30

| Amount per serving | | %DV |
|--|---------|-------|
| Vitamin C (Polyphenol-C™ Blend (E-PCA-35)) | 75 mg | 125% |
| Zinc (Monomethionine) | 30 mg | 200% |
| Copper (Bisglycinate Chelate) | 1.5 mg | 75% |
| Manganese (Citrate) | 20 mg | 1000% |
| Glucosamine sulfate | 1500 mg | * |
| Boswellia serrata (resin) extract (65% boswellic acid) | 750 mg | * |
| Bromelain (2400 GDU/gm) | 400 mg | * |
| Devil's claw (root) extract (Harpagophytum procumbens) (2.5-3.5% harpagosides) | 100 mg | * |
| Turmeric (rhizome) (Meriva®) | 100 mg | * |
| Collagen (Type II) | 50 mg | * |
| Ginger (root) extract (Zingiber officinale) (5% gingerol) | 50 mg | * |

* Daily Value not established.

Other ingredients: L-Leucine, silicon dioxide, capsule (gelatin, purified water)

Glucosamine sulfate contains trace amounts of shellfish.

Meriva® is a trademark of Indena S.p.A



INGREDIENTS:

Glucosamine (Sulfate)

Glucosamine is an amino sugar, which is a constituent of cartilage proteoglycans. It is derived from marine exoskeletons or produced synthetically (we use the variety sourced from marine exoskeletons). Glucosamine is required for the synthesis of glycoproteins, glycolipids, and glycosaminoglycans (also known as mucopolysaccharides). These carbohydrate containing compounds are found in tendons, ligaments, cartilage, synovial fluid, mucous membranes, structures in the eye, blood vessels, and heart valves. In osteoarthritis, glucosamine stimulates metabolism of chondrocytes in the articular cartilage and of the synovial cells in the synovial tissues. There is evidence that glucosamine has a disease-modifying effect, stopping or slowing the progression of osteoarthritis (1). Preliminary research suggests that glucosamine inhibits protein N-glycosylation and cytokine-stimulated production of mediators of inflammation and cartilage degradation (2). Some researchers think the sulfate moiety in glucosamine sulfate might be responsible for its effect on osteoarthritis. Sulfate is required for articular cartilage glycosaminoglycan synthesis. If the sulfate is the active moiety of glucosamine sulfate, theoretically glucosamine hydrochloride would be less effective (3). We use 1500 mg of glucosamine sulfate per serving which is the amount clinical studies recommend for maximum daily benefit.

Boswellia Serrata

Boswellia (also known as Indian Frankincense) is an Ayurvedic herb from a large branching tree found throughout India and Nepal. It has an extensive history of use for connective tissue and joint support. The major constituents are boswellic acids (pentacyclic triterpenic acids) and essential oils. These plant acids have been found to display potent anti-inflammatory properties and be beneficial in suppressing the proliferating tissue found in inflamed areas of soft connective tissues such as joints, tendons, and ligaments (5). Boswellic acids inhibit 5-lipoxygenase and leukotriene synthesis, and inhibit leucocyte elastase, which are the likely mechanisms for its anti-inflammatory properties. Boswellia extract, standardized to contain 65% boswellic acids, promotes healthy joint, connective tissue, and colon function primarily through maintaining normal leukotriene levels (6).

Devil's Claw

The medicinal part of Devil's claw is the tuber that contains iridoid glycoside constituents including harpagide and procumbide, but primarily harpagoside. Devil's claw is used for osteoarthritis and other inflammatory conditions because iridoid glycoside constituents seem to have an anti-inflammatory effect (7). Research indicates that harpagoside inhibits both the cyclooxygenase (COX) and lipoxygenase inflammatory pathways (8). Devil's claw seems to inhibit COX-2 (but not COX-1) and nitric oxide synthetase, a modulator of inflammation (9).

Curcumin (Turmeric)

Turmeric's major active constituents are curcuminoids including curcumin (diferuloylmethane), a yellow pigment. Its anti-inflammatory activity appears to inhibit cyclooxygenase-2 (COX-2) prostaglandins, and leukotrienes (10). The body's absorption of curcumin is rather weak when ingested orally (11). Our formula contains Meriva® which uses phytosome technology to combine curcumin with phosphatidylcholine. Pharmacokinetic comparison studies show Meriva® to have up to a 20-fold improvement in bioavailability, versus a standard 95% turmeric extract (12).

Bromelain

Bromelain is a general name for proteolytic enzymes obtained from the stem and fruit of the pineapple. Bromelain inhibits the production of kinins and fibrin, which promote the inflammatory process (13). Bromelain has been clinically shown to reduce pain and inflammation associated with arthritis, trauma, and sports injury (14).

Ginger

Ginger contains active constituents known as gingerol, gingerdione, and shogaol. These constituents seem to have a variety of pharmacological properties including antipyretic, analgesic, antitussive, anti-inflammatory, sedative, weak antifungal, and other properties (15). The active constituents gingerol and shogaol are used for inflammatory conditions like arthritis by inhibiting cyclooxygenase (COX) and lipoxygenase pathways (16). We used a ginger root extract that is standardized to contain 5% gingerols and 3% shogaols.

Vitamin C

Vitamin C is a very important nutrient in the formation of collagen. Collagen contains about one-third glycine and one-third proline and hydroxyproline. Vitamin C is required for the hydroxylation of proline in collagen synthesis. Hydroxyproline is almost exclusively associated with collagen (17). In a University of Sydney research study, Vitamin C has been shown to increase collagen and proteoglycan production (18) and at the University of California,

San Francisco, a study showed the synthesis of glycosaminoglycans increased 30-90% when Vitamin C was added to the culture (19). Oxidative stress mediated by reactive oxygen species (ROS) has been implicated in tissue degeneration of osteoarthritis. Antioxidant nutrients such as Vitamin C and Vitamin E are well known to reduce or prevent oxidative stress. A Boston University study showed that osteoarthritic patients with high intake of Vitamin C may reduce the risk of cartilage loss and progression of the disease (20).

Manganese

Manganese is an essential nutrient that acts as a cofactor in the formation and maintenance of connective tissue and bone. Manganese is found in high amounts in the synovial fluid that provides cushioning in weight-bearing joints (such as knee, hip and ankle). Manganese citrate is a highly bioavailable form of manganese.

Zinc and Copper

Zinc is better absorbed when is copper present. Zinc and copper have been found to be deficient in patients with rheumatoid arthritis, according to researchers at the Albany NY Medical College, and supplementation may be appropriate (21). Reactive oxygen species (ROS) and other pro-oxidant agents can aggravate arthritic inflammation. The zinc and copper containing enzyme super oxide dismutase (SOD) can interact with and neutralize these free radicals, thereby reducing the inflammatory response (22).

Patients: Consult with your healthcare professional for the proper dosage and use of this formula.

For more information about this and other Condition Specific Formulas® please visit our website at:

[www.mountainpeaknutritional.com](http://www.mountainpeaknutritionals.com)


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