

EXTRA STRENGTH JOINT CARE FORMULA

COMPOSITION

Each capsule contains:

JOINT CARE FORMULA

Glucosamine Sulfate	375mg
Boswellia bark resin extract standardized to 65% boswellic acid (Boswellia serrata)	60mg
White Willow Bark standardized to 25% Salicin (Salix alba)	50mg
Collagen Type II	30mg
Yucca root (Yucca schidigera).....	15mg
Devil's claw root (Harpagophytum procumbens)	15mg
Sarsaparilla root (Smilax sp).....	15mg
Feverfew leaf (Tanacetum parthenium).....	10mg
Bromelain 2400GDU/g	5mg

LUMANITE

Pantothenic Acid	5mg
Copper	350mcg
Manganese	750mcg
Selenium	13mcg

INDICATIONS

- Helps to relieve osteoarthritic symptoms.
- Factor in the building of healthy cartilage.
- Protects against the deterioration of cartilage from chronic joint diseases.
- Helps produce connective tissue.
- Antioxidant for the maintenance of good health.
- Effective in reducing joint pain.

DOSAGE

For optimal results take 2 caplets in the morning and 2 caplets every evening. Best taken with a meal. Keep in a cool dry place, out of reach of children. Do not exceed 9 capsules daily unless on the advice of your health care provider.

DURATION OF USE

No specified duration of use. No known limitations to duration of use.

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PHARMACOLOGY

JOINT CARE FORMULA**GLUCOSAMINE:**

Proper chemical name designated as 2-amino-2-deoxy glucose. It is an amino monosaccharide found within chitin, glycoproteins, and glycosaminoglycans. It is typically extracted from marine exoskeletons for commercial use. Synthetic glucosamine is also available. It is hypothesized that glucosamine acts as a precursor for the synthesis of glycosaminoglycans, thereby eliciting relief from arthritic pain. Glycosaminoglycans constitute the structural framework for articular cartilage. Osteoarthritis is characterized by a destruction of articular cartilage. Preliminary evidence has demonstrated an increased synthesis of glycosaminoglycans by chondrocytes with the addition of exogenous glucosamine. Animal pharmacokinetic data has demonstrated an absorption of 90% for glucosamine, which enters the portal circulation arriving at the liver. Much of the glucosamine is degraded within the liver, but animal models have demonstrated exogenously administered glucosamine reaching the articular cartilage of joints (Fleming 1998).

BOSWELLIA:

Contains 5-9% essential oil ((+)-alpha-thujene, (+)-alpha-phellandrene and alpha-pinene), 50-60% resin with mostly triterpenoid acids (boswellic acids, among others) and 10-25% mucilage. Extracts of the herb have demonstrated ability to act as a selective inhibitor of 5-lipoxygenase. Clinical efficacy has been demonstrated for ulcerative colitis, Morbus Crohn, and bronchial asthma (Wicht 2002). Boswellia's constituents have an anti-inflammatory action. Reports suggest that boswellia is effective in the management of arthritis. Boswellia inhibits pro-inflammatory mediators in the body, such as leukotrienes. As opposed to NSAIDs, long-term use of boswellia does not lead to irritation or ulceration of the stomach (Krinsky 2003).

COLLAGEN TYPE II:

A controlled trial conducted by Harvard University provides evidence that oral administration of small quantities of solubilized native heterologous type II collagen is both safe and can improve the clinical manifestations of active rheumatoid arthritis, also confirming that oral collagen is an easily administered nontoxic treatment for rheumatoid arthritis (Trentham 1993).

WHITE WILLOW:

White willow contains a variety of tannins, phenolic glycosides (salcortin, fragilin, tremulacin) and salicin. Salicin in willow may be converted to saligenin in the gastrointestinal tract and absorbed. Following absorption, it is metabolized to salicylic acid. Most of the pharmacologic activity associated with white willow appears to be related to its salicylate effects. Salicylates are antipyretic, analgesic, and anti-inflammatory. In addition, salicylates may inhibit platelet aggregation. At high dosages, they may demonstrate effects on uric acid excretion and glucose regulation. The tannins in willow have astringent properties on mucosal tissues (Krinsky 2003). 1.5-11% salicylates, which are salicyl alcohol derivatives have been identified and quantified. Phenols, flavonoids, and tannins are also present. Plant alcohols are absorbed, and metabolized in blood and liver to salicylic acid. Absorption from oral dosing has been demonstrated to exceed 86% (when high dosages are administered). Absorption of therapeutic dosages is much less. Mechanism of action stems from inhibition of cyclooxygenase, and subsequent decrease in inflammatory products from the biotransformation of arachidonic acid (Wicht 2002).

YUCCA:

Limited pre clinical investigation has been conducted on steroidal glycoside constituents present within the root. Otherwise, no pharmacological and/ or pharmacokinetic data available (Fleming 1998).

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PHARMACOLOGY

DEVIL'S CLAW:

Devils claw has been demonstrated to possess a variety of iridoid glycosides, phytosterols, triterpenes, phenolic acids, and flavonoids. The herb is typically standardized to contain not less than 1.2% harpagoside. Pharmacokinetic data has not been compiled regarding this herb. However, *in vitro* data, combined with animal models of inflammation have cumulatively suggested that the digestion (hydrolysis) products of harpagoside possess greater anti-inflammatory potential than the compound as present in the crude herb. Human studies have established significant efficacy for devils claw in the alleviation of pain from a variety of rheumatic conditions (Mills 2000).

SARSAPARILLA:

Used for skin diseases, rheumatic complaints, and kidney diseases (as a diuretic). Steroid saponins have been identified and isolated from the herb (Fleming 1998).

FEVERFEW:

Sesquiterpene lactone parthenolide remains the constituent of active research interest, present at 0.06–0.6% of the herb. Proposed mechanisms of action include generalized inhibition of inflammatory pathways, as well as stabilization of platelets, inhibiting platelet release of inflammatory mediators (Mills 2000).

BROMELAIN:

A proteolytic enzyme obtained from the pineapple plant. Pharmacokinetic analysis in rats revealed 40% of bromelain reached the blood within one hour after administration. Antiinflammatory mechanism appears to be mediated via inhibition of the bradykinin pathway. Bromelain may also be capable of selective modulation of thromboxane and prostacyclin production (Czap 2002).

LUMANITE**PANTOTHENIC ACID:**

There is evidence that pantothenic acid may be helpful in the management of some with rheumatoid arthritis. The mechanism of this putative effect is unclear. Activated granulocytes play a role in the inflammatory response by production of reactive oxygen species. Pantothenic acid, in the form of calcium D-pantothenate, was found to significantly inhibit the release of myeloperoxidase from granulocytes *in vitro*, as well as to inhibit the production of reactive oxygen species by these cells. This effect of pantothenic acid as well as its antioxidant effect, may account, in part, for the putative action of pantothenic acid in rheumatoid arthritis (Hendler 2001).

COPPER:

Copper is an essential trace mineral in animal and human nutrition. Copper bracelets have been worn by many in an effort to ameliorate symptoms of arthritis. A study of this found that some of those who had worn the bracelets for prolonged periods and then discontinued wearing them became significantly worse, compared with controls who wore placebo bracelets that also appeared to be made of copper. The subjects in this study suffered primarily from osteoarthritis. There was evidence that copper from the bracelets, dissolved in sweat, was absorbed through the skin (Hendler 2001).

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PHARMACOLOGY

MANGANESE:

Our bodies contain only a very small amount of manganese, but this metal is important as a constituent of many key enzymes. The chemical structure of these enzymes is interesting: large protein molecules cluster around a tiny atom of metal. Manganese plays a particularly important role as part of the natural antioxidant enzyme superoxide dismutase (SOD), which helps fight damaging free radicals. It also helps energy metabolism, thyroid function, blood sugar control, and normal skeletal growth. Because manganese plays a role in bone metabolism, it has been suggested as a treatment for osteoporosis. Manganese has also been suggested for the treatment of muscle strains and sprains, rheumatoid arthritis, and tardive dyskinesia.

SELENIUM:

Supplemental selenium can help protect some against Kashin-Beck Disease, a form of arthritis. There is some preliminary evidence that selenium might alleviate articular pain and morning stiffness in some with arthritis (Hendler 2001).

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MECHANISM OF ACTION

The product adopts four unique approaches to the management of joint pain. The first is the aspect of structural support, achieved via glucosamine sulphate. This agent has reproducibly demonstrated a high magnitude of both safety and efficacy in human clinical trials. The second approach stems from herbal anti-inflammatory constituents. Such agents have both traditional and clinical evidence supporting both safety and efficacy. The third approach stems from the administration of the oral enzyme preparation, bromelain. This agent has also demonstrated efficacy and safety in alleviating joint pain. The fourth component of this approach is a selected combination of minerals. LUMANITE's minerals selected primarily for their efficacy in reducing arthritis pain, also aid in the formation of healthy connective tissue, and act as a natural antioxidant. Through the combination of these various therapeutic systems, a very high measure of efficacy can be expected from the product.

CONTRAINDICATIONS

Do not use if you have gastric or duodenal ulcers.
Do not use if you have shellfish allergies
Do not use if you are pregnant or breastfeeding.

DOSAGE

For optimal results take 2 caplets in the morning and 2 caplets every evening. Best taken with a meal. Keep in a cool dry place, out of reach of children. Do not exceed 9 capsules daily unless on the advice of your health care provider.

ADVERSE EFFECTS

Gastrointestinal discomfort may occur.
If gastrointestinal upset occurs, reduce dosage. If gastrointestinal upset persists, discontinue use.

DRUG INTERACTIONS

There exist various "theoretical" possibilities for interaction with medications, but none have been objectively reported. However, due to extremely narrow therapeutic window of certain pharmaceutical preparations, some precautions must be noted. Most notably, the product should be avoided by individuals taking blood thinning medications. It is recommended that consultation with a physician is conducted prior to commencing any natural health product.

REGULATORY STATUS

The product is in the process of receiving a "submission number" from the NHPD (Natural Health Products Directorate), and is currently awaiting its NPN (natural product number).

NON-MEDICINAL INGREDIENTS

Microcrystalline cellulose, magnesium stearate, silicon dioxide, di-calcium phosphate anhydrous.

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