Devil's Claw
The most useful part of Devil's claw is the tuber, which contains iridoid glycoside constituents including harpagide and procumbide, but primarily harpagoside. Devil's claw is used because iridoid glycoside constituents seem to have a metabolic effect to support joints and connective tissues (7). Research indicates that harpagoside may support cellular function (8) (9).

Turmeric (Meriva®)
Turmeric's major active constituents are curcuminoids including curcumin (diferuloylmethane), a yellow pigment. Its reported activity appears to work with the chemicals released by the body (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 phosphatidyl-choline. 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 has been shown to reduce inflammation associated with exercise over-exertion and sports injury (13).

Ginger
Ginger contains active constituents known as gingerol, gingerdione, and shogaol. These constituents seem to have a variety of beneficial properties. The constituents gingerol and shogaol are used for joint support by working at the cellular level (14). We used a ginger root extract that is standardized to contain 5% gingerols and 3% shogaols.

Type II Collagen
Type II collagen is excellent for cartilage health and addressing joint mobility with a daily 40 mg dosage. Collagen Type II makes up 50% of cartilage protein, and as levels of this type of collagen decrease with normal aging, Type II collagen helps replace this lost cartilage protein.

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 (15). In a University of Sydney research study, Vitamin C has been shown to increase collagen and proteoglycan production (16) and at the University of California, San Francisco, a study showed the synthesis of glycosamino-glycans increased 30-90% when Vitamin C was added to the culture (17). Oxidative stress mediated by reactiveoxygen species (ROS) has been implicated in tissue degeneration. Antioxidant nutrients such as Vitamin C and Vitamin E are well known to reduce or prevent oxidative stress. A Boston University study showed that patients with high intake of Vitamin C may reduce the risk of cartilage loss (18).

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 present with copper. Zinc and copper supplementation may be appropriate for patients with deficiencies (19). The zinc and copper containing enzyme super oxide dismutase (SOD) can interact with and neutralize free radicals and reactive oxygen species (ROS) (20).

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

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

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