

Joint pain usually has more than one component, e.g., cartilage stress from overuse or other factors leads to dysregulation of inflammatory factors and this, in turn, can lead to blood vessel infiltration of the cartilage, etc. This protocol addresses various possible components of joint health and provides natural approaches to supporting the body's own corrective mechanisms. The individual components below can be combined as a protocol for more complete support.

Ultra Omega-3 (Molecularly Distilled)

Omega-3 Fatty Acids (FAs) found in fish oils are widely recognized for a variety of health benefits. The most important omega-3 fatty acids are eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA). Studies have demonstrated that omega-3 FAs are important in numerous signaling pathways. Most notably, EPA is a precursor of certain prostaglandins and leukotrienes, molecules that are involved in modulating inflammatory responses. These two classes of signaling molecules are critical for the maintenance of cardiovascular health and immune system function. Moreover, long-chain omega-3 fatty acids from fish oil decrease the production of inflammatory cytokines and eicosanoids. These fatty acids act both directly (by replacing arachidonic acid as an eicosanoid substrate and by inhibiting arachidonic acid metabolism) and indirectly (by altering the expression of inflammatory genes through effects on transcription factor activation) (8).

Even at levels of intake that do not significantly modulate cytokine levels, omega-3 fatty acids can positively influence plasma concentrations of soluble vascular cell adhesion molecule-1 and soluble E-selectin, factors important to endothelial function (9). Recent clinical studies have emphasized the beneficial impact of omega-3s on serum lipid metabolism. The FDA allows the claim that the consumption of omega-3 fatty acids may reduce the risk of coronary heart disease.

Cautions and interactions

Omega-3 fatty acids may interact with aspirin or warfarin. In addition, omega-3 fatty acids may interact with cholesterol-lowering statin medications. Omega-3 fatty acids may be used as a dietary supplement if taking certain medications, including cyclosporine, and may interact with topical corticosteroid treatment.

Glucosamine/Chondroitin/MSM

This formula combines three of the most popular and effective nutrients for supporting joint health in one dietary supplement. The glucosamine and chondroitin are both 100% sulfate-bound, hence provide the most studied forms of these nutrients. In addition, the formula includes methylsulfonylmethane (MSM), an organic form of sulfur found in all living organisms.

Positive clinical trials showing the benefits of glucosamine sulfate have involved large numbers of subjects (1 - 3, 5 - 6). Recent meta-analyses have suggested that the combination of glucosamine and chondroitin is most likely to prove helpful to individuals with moderate-to-severe joint issues (4). MSM, as a source of organic sulfur, long has been used by athletes and others to supply a substrate for the regeneration of connective tissues. It has been the subject of promising clinical work (5 - 6).

Cautions and interactions

The only side effects reported with chondroitin sulfate usage appear to be mild gastrointestinal incidents. Similar adverse reactions have been reported with glucosamine and MSM, yet both of these compounds also are often suggested as supporting GI-tract health and function. It was feared that glucosamine might adversely affect insulin sensitivity, but clinical trials have disproven this.

The use of MSM can lead to the occurrence of an abnormal resonance in the *in vivo* brain proton MR spectrum as well as in the *in vitro* cerebrospinal fluid NMR, hence should be revealed prior to undergoing these/related diagnostic tests.

These statements have not been evaluated by the FDA. These products are not intended to diagnose, treat, cure or prevent any disease.

OsteoBoron™

OsteoBoron™ is a patented natural complex of food source boron identical to boron complexes found in fruit, vegetables, and nuts. It is also safer and more bioavailable than other forms of boron. Boron is an important trace mineral for bone and joint health throughout life, as well as for the development and maintenance of healthy bone density (7). OsteoBoron™ is a superior form of boron that has been the subject of clinical studies demonstrating its efficacy in the support of healthy joints.

Cautions and interactions

There are no known interactions with OsteoBoron™.

Celadrin® Joint Liposome Lotion™

Celadrin® is an all-natural fatty acid complex that has been shown to provide support for healthy joints. As demonstrated in clinical studies, Celadrin® Joint Liposome Lotion supports healthy joint mobility, as well as overall joint function without dangerous side-effects. Scientific studies have shown that Celadrin® Joint Liposome Lotion is safe, well-absorbed, and easily utilized by the body (10, 11).

Cautions and interactions

There are no known drug interactions with Celadrin®.

Additional Support

MSM, Curcumin, D-Flame™, Calcium and Magnesium
Additional organic sulfur can be obtained with MSM capsules. MSM has been shown to be extraordinarily safe and to provide numerous benefits.

Curcumin is a plant source of powerful antioxidants and free radical scavengers. However, the benefit to joint health may not be antioxidant-dependent. Researchers are probing the mechanism(s) by which curcumin inhibits the growth of synovial adherent cells.

D-Flame™ is a synergistic blend of herbs that can reduce the occasional minor pain resulting from over-exertion or stress. Therefore, D-Flame™ is an all natural product that can be part of a nutritional program for pain management. In addition, Protocol for Life Balance™ D-Flame™ contains a potent combination of herbal ingredients that contribute to heart health, joint comfort, and balanced inflammatory response.

Calcium and Magnesium supply two minerals noted as being of primary significance to bone and joint health.

References available at www.protocolforlife.com

Ultra Omega-3 (Suggested: 4 softgels or 1 tsp. Liquid Omega-3 daily)	_____ X _____
Glucosamine & Chondroitin w/ MSM (Suggested: 3 daily)	_____ X _____
OsteoBoron™ (Suggested: 2-4 daily)	_____ X _____
Celadrin® Joint Liposome Lotion™ (Suggested: apply as needed)	_____ X _____
Additional Support Products:	
MSM (Suggested: 1 three times daily)	_____ X _____
Curcumin, 95% Extract (Suggested; 1-2 daily, with meals)	_____ X _____
D-Flame™ (Suggested: 2-4 daily)	_____ X _____
Calcium and Magnesium (Suggested; 1,000/500 mg daily)	_____ X _____

Please note the instructions, cautions and interactions on each product package, and begin each new product separately, in turn. Use only under the supervision of a qualified health practitioner.