

Support for Joint Health

Developed and reviewed by the clinical, chiropractic, and naturopathic members of the Standard Process team

Joint Structure and Function

Synovial joints — like those of the knee, shoulder, and hip — are freely movable and defined by the presence of synovial fluid in a cavity that sits within the fibrous articular capsule. The bones that make up synovial joints are encased in hyaline cartilage. Ligaments provide strength and stability to the joint.

The synovium is the membranous inner layer of the articular capsule that provides lubrication for the smooth movement of bones. It regulates the production of synovial fluid: an ultrafiltrate of blood that enables the exchange of nutrients between the blood and the joint capsule through passive diffusion. Healthy synovium is well vascularized and contains lymphatic vessels and nerves. This ensures the delivery of critical nutrients to cartilage, the removal of waste products, and pain signaling to the brain.

The hyaline (articular) cartilage that encases bones within synovial joints provides cushioning, absorbs force, and reduces friction during movement. Because cartilage is avascular, it depends on synovial fluid to obtain nutrients. Synovial fluid also acts as a shock absorber, which helps prevent joint degeneration under repetitive forces. Hyaluronic acid is an important component of synovial fluid; it attenuates inflammation and preserves articular cartilage while providing both elasticity and flexibility.

Pain, stiffness, and joint dysfunction can occur as a result of overuse, trauma, and inflammatory processes driven by health conditions such as metabolic dysfunction or autoimmune processes. Damaged cartilage and joint ligaments are common concerns. In degenerative conditions, hyaluronic acid concentration is decreased in the synovial fluid, leading to a reduction in viscosity. A hallmark of inflammatory joint conditions is a thickening of the synovium; this can be visualized by magnetic resonance imaging (MRI).

Lifestyle and nutrition interventions can provide the nutrients and co-factors needed for the healthy structure and function of joint tissue, and support the healthy resolution of inflammatory conditions that impact joint health.

Supportive Lifestyle Practices

- Support healthy body composition in your patients to protect against premature breakdown of joint cartilage. Research shows that overweight individuals who lose 5-10% of their body weight have reduced cartilage degeneration in their knees over four years.¹ Increased muscle mass can protect joints by absorbing a portion of the force from lifting, bending, and sports-related movement.²
- Encourage patients to move frequently throughout the day. Regular movement increases the production of synovial fluid, stimulates the lymphatic system, and promotes the removal of waste products from the joint capsule.³

Whole Foods Nutritional Recommendations

- Recommend that patients limit refined grains and foods high in simple sugars. When patients suffering from chronic knee inflammation adhered to a low-carbohydrate diet for twelve weeks, their perceived pain decreased, and oxidative stress markers were also reduced.⁴
- Encourage patients to eat foods rich in omega-3 fatty acids like salmon, tuna, sardines, and mackerel. Omega-3s play a role in chondrocyte and cartilage homeostasis. They also serve as precursors for resolvins and protectins which are lipid mediators of the inflammatory process.⁵
- Encourage consumption of collagen-rich foods like bone broth, organ meats, and skin-on chicken. Collagen is needed for healthy cartilage formation.⁶ Bone broth, for example, contains glucosamine, chondroitin, and proline — key building blocks for healthy cartilage.
- Recommend consumption of manganese-rich foods such as nuts, seeds, beans, and leafy greens. Manganese is needed for collagen synthesis and tissue repair.⁷

Dietary Supplement Regimen



Ligaplex® II

Suggested Use: **2 capsules twice per day**

Ligaplex® II is a connective tissue and joint support supplement that maintains connective tissue health.*

- Provides essential nutrients to support the skeletal system and facilitate movement*
- Nutritional compounds for support of proper formation and maintenance of skeletal tissues*
- Contains a combination of key ingredients from Cardiotrophin PMG®, Ostrophin PMG®, Manganese B12™, Super-EFF®, and Cataplex® E
- Excellent source of vitamin A, vitamin B₁₂ and manganese



Boswellia Complex

Suggested Use: **1 tablet, 2-4 times daily**

Boswellia Complex contains Boswellia, Celery Seed, Ginger and Turmeric. These herbs have been traditionally used in herbal preparations to:

- Maintain and support healthy joints*
- Support healthy circulation*
- Provide antioxidant activity*



Glucosamine Synergy®

Suggested Use: **1 capsule three times per day**

Glucosamine Synergy® combines glucosamine, *Boswellia serrata*, and manganese to help maintain healthy joint function.*

- Maintains healthy connective tissue*
- Supports the body's normal connective tissue repair process*
- Supports joint health*
- Contains many of the same ingredients as Ligaplex II, with the added benefit of glucosamine and boswellia for relieving discomfort in the affected areas after strenuous exercise*
- Excellent source of manganese



Tuna Omega-3 Oil

Suggested Use: **2 softgels twice per day with meals**

Tuna Omega-3 Oil helps bridge the gap in dietary omega-3 intake and supports the body's natural inflammatory response function.*

Assessment of Joint Health

In Office/Physical Exam

- Visualize and palpate the joint and surrounding tissue; identify red, swollen, warm, or tender areas
- Perform relevant orthopedic tests and assess active and passive range of motion
- Consider imaging such as X-ray or MRI
- Western Ontario and McMaster Universities Arthritis Index (WOMAC) Questionnaire
- Key lab studies: C-reactive protein (CRP) and markers of autoimmunity

REFERENCES

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