

## CLINICAL EVIDENCE



### Effectiveness of Glucosamine

Three randomized trials compared glucosamine sulfate taken by mouth to a placebo. The use of glucosamine resulted in better outcomes. These studies found that 8 of 10 patients taking glucosamine versus 2 of 10 on the placebo, had reduced pain and tenderness after 6 to 8 weeks (Pujalte et al 1980). Crolle and Estes (1980) found that 4 of 15 patients on glucosamine sulfate were free of symptoms after 3 weeks, but none of the 15 patients on the placebo showed improvement. In the larger study by Rovati (1992), 52% of patients taking glucosamine and 36% in the placebo group reported improved symptoms after 4 weeks

### Effectiveness of Chondroitin

In a 3-month randomized trial of 127 patients with knee osteoarthritis, 83 patients took 1,200 mg/day of chondroitin sulfate, either in divided doses or at one time. Patients in both chondroitin groups had less pain and more mobility in their knee joints than those who received a placebo (Bourgeois et al 1998). In a randomized, 3-year trial of 119 patients with osteoarthritis of the finger joints, the group that received 400 mg of oral chondroitin sulfate 3x/day had no progression of osteoarthritis in their finger joints, while the placebo group showed evidence of continuing degeneration (Verbruggen et al 1998).

### Effectiveness of Hyaluronic acid

In people over 60 years of age with osteoarthritis of the knee, an injection of hyaluronan (Hylan G-F 20; Synvisc®) proteoglycan solutions into the knee joint provided rapid and significant pain relief and improvement of function (Adams et al 1995; Lohmander et al 1996; Wobig et al 1998). In one randomized trial, patients initially received 3 injections in 1-week intervals. When compared to NSAIDs, the hyaluronan-injected patients did as well as patients taking NSAIDs after 12 weeks and significantly better after 26 weeks (Adams et al 1995).

### Effectiveness of Cissus Quaranularis

Sixteen patients with various types of fractures were treated with sixteen patients with various types of fractures were treated with Cissus (Indian J Med Sci 1963). This treatment was given in addition to the standard treatment of fractures, e.g. complete immobilization. As per radiological observations, the results showed clinically that 80% of the cases achieved excellent results and the remaining case results were good (40%-53% reduction in healing time in 14 cases). It was also observed that the injured bones surrounded by muscles showed an additional benefit as the Cissus may help in the early formation of collagen fibers leading to earlier calcification and callus formation.



## FLEX Advanced Joint Formula

### Supplement Facts

Serving Size: 3 capsules  
Servings per container: 30

	Amount / Serving	%DV
Calcium Ascorbate	23mg	3%
Magnesium Chelate	7.5mg	2%
Zinc Ascorbate	7.5mg	50%
Copper Chelate	2mg	100%

#### Healing Acceleration Complex

Glucosamine Sulfate (derived from shellfish)	750mg	*
Chondroitin Sulfate	375mg	*
MSM (Methyl-Sulfonyl-Methane)	375mg	*
Cissus Quadrangularis 20:1	250mg	*

#### Synovial Booster Complex

Hyaluronic Acid	25mg	*
Cetyl Myristoleate	15mg	*

#### Anti-Inflammatory Complex

Yucca Extract 4:1, Cats Claw, Boswellia Extract, Turmeric, White Willow Bark extract, Bromelain, Devil's Claw	512mg	*
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\* Daily Value Not Established

**Other Ingredients:** Gelatin. Contains ingredients derived from shellfish. Contains No milk, egg, peanut, tree nuts, fish, soy, wheat, yeast, glutens, starch or preservatives.

**Suggested Use:** Take one capsule three times a day with meals for the first 45 days. Then you can reduce to a maintenance dosage of one capsule two times daily with meals.

**Stacking Option:** For improved pain relief and health, stack with **OmegaZyme** and **VM Plus**.



#### References

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\* These statements have not been evaluated by the FDA.  
The product is not intended to treat, cure or prevent disease.

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# FLEX

## Advanced Joint Formula

Promotes Optimal Joint Health

Helps Alleviate Pain & Stiffness

Improves Joint Lubrication

Reduces Inflammation





by **John Scott, CISSN, CNS, SPN**  
Developer of John Scott's Nitro

*"I understand what an athlete needs because I am one."*

**Flex™** is an advanced, all-natural joint formula designed for superior repair, recovery and health of the complete joint. The health of an athlete's joints can have a dramatic effect on performance. **Flex's** unified design helps maintain peak performance and healthy, pain-free, well-lubricated joints. Scientific research has shown that the cutting-edge ingredients in Flex reduce both osteo and rheumatoid type conditions via the synergistic effect of the Healing Acceleration, Synovial Booster and Anti-Inflammatory complexes, and supporting nutrients. This complete, unified approach to joint health helps keep you training hard and pain-free.

Over the last decade, scientists have proven that numerous compounds have been clinically effective for combating and rejuvenating joint deterioration. In other words, they help your body avoid joint injury and can assist your body's

healing process should you ever become injured. **Flex** contains an optimal mix of thirteen of the most powerful, research proven, healing compounds including Glucosamine sulfate, Chondroitin sulfate, MSM, Cissus Quadrangularis, Hyaluronic

acid, Cetyl Myristoleate and an herbal anti-inflammatory complex to help speed recovery and provide some immediate pain relief. Start protecting yourself now. Prevention is the key to maintaining healthy joints and **Flex** helps you sustain consistent, pain-free performance. You wouldn't wait until the wheel fell off your car to maintain it would you?

Don't wait, start protecting yourself now. You wouldn't wait until the wheel fell off your car to maintain it would you? Prevention is the key to maintaining pain free joints. One easy to swallow **Flex** pill helps you sustain consistent, pain-free performance.

## THE SCIENCE OF JOINT HEALTH

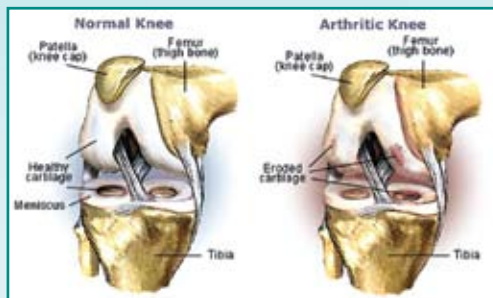
Healthy joints are an integral part of optimal performance. However, the harder you train, the more you stress your joints! This affects every type of athlete because injuries rob you of hard-earned gains, seriously limit your progress and can cause chronic pain.

The body generally cannot replace cartilage components as fast as they are damaged by sports or the aging process itself. Like an engine without enough oil, the damaged cartilage becomes rough and begins to wear down faster and faster. This process continues with time until little or no cartilage is left in the affected joint, resulting in arthritis. Osteoarthritis, also called degenerative joint disease, is the most common type of arthritis. It is associated with a breakdown of cartilage



in joints. Cartilage is a firm, rubbery material that covers the ends of bones in normal joints. Its main function is to reduce friction in the joints and serve as a "shock absorber." The shock-absorbing quality of normal cartilage comes from its ability to change shape when compressed. Arthritis causes the cartilage in a joint to become stiff and lose its elasticity, making it more easily damaged. Over time, the cartilage may get worn away in some areas (see unhealthy joint picture). As the cartilage wears away, the tendons and ligaments stretch, causing pain or it can even get to the point where it is bone rubbing against bone.

## Healthy Joints Are An Integral Part Of Optimal Athletic Performance



Another cause of joint deterioration can be the loss of lubricating fluid in the joint. Our joints are surrounded by a membrane called the synovial membrane, which forms a capsule around the ends of the bones. This membrane secretes a protective liquid into the joint called synovial fluid. This fluid acts as a lubricant, shock absorber and a nutrient carrier, protecting the joints, cartilage and bones. Cartilage is avascular, meaning it contains no blood vessels, so the synovial fluid is the only way in which healing nutrients can be carried into the cartilage and waste can be removed.

Fortunately, research has shown that the combination of several key natural compounds can significantly improve joint health. When combined properly these compounds can accelerate healing (improve cartilage and shock absorbance), improve joint lubrication and reduce inflammation resulting in reduced joint pain and stiffness.

## THE FORMULA

**Calcium ascorbate** (buffered vitamin C) improves calcium absorption for bone maintenance.

**Magnesium chelate** is needed for calcium absorption and maintenance of bone density.

**Zinc ascorbate** helps enhance bone formation and reduce bone loss.

**Copper chelate** plays a versatile role in promoting a number of enzymes which help build collagen, strengthen tissue and reduce inflammation in joints.

### Healing Acceleration Complex

**Glucosamine Sulfate** (GS) is a major building block of the proteins that help form your joint-supporting cartilage and joint-lubricating synovial fluid. As one gets older, the ability to produce glucosamine becomes more difficult, thus



cartilage starts to break down. Studies show that supplemental glucosamine helps your body stimulate joint and cartilage repair. A 1999 study (Rheum Dis Clin North Am.) showed taking glucosamine for 1-3 months was more effective than non-steroidal anti-inflammatory drugs (NSAID), like acetaminophen and ibuprofen, in reducing joint pain.<sup>1</sup>

**Chondroitin Sulfate** (CS) works well with glucosamine to protect joints because it helps increase the shock absorbing fluid in the cartilage. It also protects existing cartilage from premature breakdown by inhibiting the enzymes that destroy cartilage and prevent the transportation of nutrients. A 2003 meta-analysis of CS studies for treating arthritis found that CS significantly relieved joint pain.

**MSM** (methylsulfonylmethane) is an organic form of sulfur, required for protein metabolism and the maintenance of connective tissue. It helps make cells permeable so that fluids can flow freely through the cell wall, allowing for toxin removal, reduced inflammation, reduced scar tissue and improved healing. It is also helpful in improving blood flow, slowing down cartilage degeneration and reducing scar tissue formation.

**Cissus quadrangularis** is an Ayurvedic herb that recent research has shown helps support bone health and healing by showing it acts as a glucocorticoid antagonist.<sup>6,7</sup> It is also shown to be safe with no side effects. Since anabolic/androgenic compounds are well known to act as antagonists to the glucocorticoid receptor as well as promote good bone health, it has been postulated that Cissus possesses anabolic properties too.<sup>6,8</sup> Some studies have shown accelerated healing of fractures via a great impact on osteoblastic proliferation.

### Synovial Booster Complex

**Hyaluronic Acid** (HA) is present in every tissue of the body, especially in cartilage and synovial fluid. HA helps to hold needed fluid in the joint. Hyaline cartilage is the most predominant form of cartilage in the body that consists of a key component called Hyaluronic acid. Nutrients are brought by the synovial fluid, which is rich in HA to heal the cartilage, which is also high in HA.

**Cetyl Myristoleate** serves as a surfactant and lubricates the joints, allowing the muscles to glide smoothly. Secondly, it functions as an immune modulator helping to reduce treating auto-immune disorders and inflammation such as rheumatoid arthritis.

### Anti-Inflammatory Complex

**Yucca extract** is rich in saponins (a natural pain killer), which elevate the body's production of the anti-inflammatory cortisone to aid in arthritis relief. Research from the National Arthritis Medical Center states that yucca is effective for all types of arthritis.

**Cats Claw** has traditionally been used as an inflammation & pain reliever.

**Boswellia extract** is an Ayurvedic medicine used as an anti-inflammatory. Patients with rheumatoid arthritis showed reduced pain and swelling following 3 months of boswellia use.

**Tumeric extract** has been in studies to be an antioxidant, and exhibit both anti-inflammatory and anti-cancer powers, possibly due to thecurcuminoids in the herb.

**White Willow Bark extract** is used as an effective pain reliever (headaches, arthritis, minor injuries), fever reducer and anti-inflammatory.

**Bromelain** has been shown in research to accelerate recovery from exercise, injury and surgery. It helps reduce inflammation by increasing the breakdown of Fibrin, which forms around inflamed areas, blocking blood flow and causes swelling.

**Devils Claw extract** Several double-blind studies have shown 2-8 weeks of Devil's claw treatment to reduce pain and improve mobility in cases of rheumatoid arthritis and osteoarthritis.