



JOINT STRONG®

Joint Support Formula



K9 Power **Joint Strong**® is a source of functional ingredients that helps maintain and promote healthy bones, joints, and cartilage.

- + Supports Hip and Joint Health
- + Helps Support Joint Flexibility and Mobility
- + Helps Maintain Cartilage and Connective Tissue
- + Eases Joint Stiffness Due to Normal Daily Activity

K9 Power's **3-step** proprietary approach to joint health is a result of the most current and proven research, and 25+ years of practical results. First, **Joint Strong**® helps relieve joint inflammation and discomfort, eases muscle soreness, and enhances movement and mobility. Second, it protects and maintains cartilage. Finally, it supports bone and joint repair and growth.

Product Facts

Active Ingredients per 10 g scoop: 45 scoops per container. Scoop included.

D-glucosamine	660 mg
(as sulfate from bovine source)	
Collagen Type II (chicken source).....	600 mg
Curcumin (95% Curcumioids).....	500 mg
Betaine (as hydrochloride)	500 mg
Chondroitin sulfate (bovine source)	350 mg
Whey protein isolate	348 mg
Cod liver oil powder	240 mg
Egg shell membrane	200 mg
Cetyl myristoleate (CMO)	80 mg
Beta berries powder	75 mg
Tart cherry powder	30 mg
Icelandic kelp powder	25 mg
Pomegranate fruit powder	3 mg
Hyaluronic acid (as sodium hyaluronate) ..	2 mg

Inactive Ingredients: Calcium ascorbate, calcium citrate, camelina meal, chicken powder, mixed tocopherols, pork liver powder, stabilized rice bran.



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JOINT STRONG® INGREDIENT PANEL

- Bone and joint problems experienced by dogs oftentimes result in great discomfort that severely impacts their quality of life. This is often manifested by impaired joint mobility and movement. In developing this next generation Joint Strong® supplement, ingredients were included that will aid in ameliorating these problems to the greatest extent possible.
- The ingredient present in the highest concentration in Joint Strong® is **D-glucosamine sulfate** derived from shellfish. The sulfate form is more readily absorbed and stimulates production of glycosaminoglycans (GAGs), nutrients that stimulate the formation of articular cartilage, a type of smooth white tissue that covers the ends of the bones where they meet to form joints. In supplement form, it often is used to treat symptoms of various inflammatory conditions. It works in concert with **chondroitin sulfate** to inhibit the activation of inflammatory pathways in dog synovial cells that are responsible for producing synovial fluid (or lubricating fluid) components. **Chondroitin sulfate** preserves cartilage, aids flexibility, and helps regulate the body's natural inflammatory responses. Articular cartilage plus synovial fluid minimize friction and allow bones to move freely and painlessly across one another. **D-glucosamine sulfate** is thought to promote the creation of certain chemical components, including **collagen**, that are important structural components of articular cartilage and synovial fluid.
- **Collagen Type II (native, undenatured)** is present in the next highest concentration. It is composed of a repeating sequence of three amino acids – glycine, proline, and hydroxyproline or hydroxylysine. It stimulates cartilage growth and helps maintain the integrity of the cartilage in the joints. Over time, cartilage wears due to aging and repetitive movement. Tendons and ligaments stretch, allowing bones to rub against each other, which leads to pain and inflammation. **Collagen Type II** provides the necessary support for the growth and repair of cartilage tissue, but the amount of available collagen in the body decreases with age, leading to increased risk of joint disorders, and thus the reason for its inclusion as an ingredient in Joint Strong®. **Collagen Type II** is the protein that makes tendons strong. **Collagen** peptides can provide the essential amino acid building blocks to produce new collagen in the body, reduce activity-related joint pain, and strengthen tendons and ligaments.



- **Turmeric** is a well-known Indian spice that contains compounds with medicinal properties called curcuminoids. The most popular of these is curcumin that exhibits powerful anti-inflammatory effects.
- **Betaine hydrochloride** is a compound that aids in joint recovery from stressors by virtue of the fact that it increases the concentration of S-adenosylmethionine, the specific compound that elicits this effect. Also, it helps maintain glutathione concentrations because, when glutathione concentrations decrease, more free radicals are produced that stimulate NF-kappa-beta. **Betaine** serves to keep NF-kappa-beta inactive, thus diminishing the negative effects of free radicals in the body.
- **Whey protein isolate** is a completely balanced protein that also contains the branched-chain amino acids (e.g., leucine, isoleucine) important for optimal muscle growth and activity. It has been shown to increase bone density by promoting bone growth and preventing bone breakdown.
- **Cod liver oil powder** is rich in the omega-3 fatty acids, eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA). Research has linked these two fatty acids to a variety of health benefits as they suppress the body's inflammatory response by reducing concentrations of pro-inflammatory chemicals produced by the immune cells. Omega-3 fatty acids suppress the proteins that promote inflammation (TNF-alpha; IL-1; IL-6). **Cod liver oil powder** also is a rich source of Vitamins A and D. In addition to immune support, it aids in joint flexibility.
- **Egg shell membrane** is a naturally rich source of bioactive components to include select proteins, elastin, **collagen**, glycosaminolycans (GAGs; to include **chondroitin, hyaluronan, dermatan**, heparin, and keratan), and **glucosamine** that has been shown to benefit joint health. It leads to a reduction in the production of inflammatory cytokines such as IL-1 beta and TNF-alpha. It has been shown to improve recovery from exercise-induced joint pain, decrease joint stiffness, reduce discomfort after exercise, and diminish cartilage degradation.
- **Cetyl Myristoleate (CMO)** is a natural medium-chain fatty acid found in certain animals (e.g., bovine species). As a nutritional supplement, it is extracted in a highly purified form from beef tallow. It inhibits the production of inflammatory prostaglandins and leukotrienes and has been found to support joint health, function, and mobility, and increase range of motion.
- The presence of a strong antioxidant blend is important when formulating a supplement for bone and joint health. In the next generation Joint Strong® supplement, we have **beta berries powder** and **pomegranate fruit powder** that offer strong natural antioxidant protection. **Tart cherry powder** reduces the discomfort and stiffness associated with joint disorders. It is a strong antioxidant and a potent anti-inflammatory. And **Icelandic kelp powder** is rich in antioxidants such as carotenoids and flavonoids. This blend provides strong antioxidant protection which complements the anti-inflammatory properties of many of the other ingredients in the Joint Strong® supplement.



- Finally, we have added a small amount of a purified **hyaluronic acid** because of its three critical roles: (a) it supports the natural lubricating factors in synovial fluid around joints; (b) it promotes growth of cartilage and bones; and (c) it reduces inflammation.
- While the **active ingredients** are the most important components of the next generation Joint Strong® supplement, the **inactive ingredients**, too, contribute to its excellent nutritional quality. For example, **calcium ascorbate** and **calcium citrate** are two highly bioavailable forms of calcium, one of the major mineral components of bone. **Camelina meal** is a unique source of plant-derived omega-3 fatty acids that support bone and joint health by virtue of their anti-inflammatory properties. **Chicken powder** contains a well-balanced amino acid profile that supports many metabolic functions in the body. It also is a good source of fat, minerals, and B-complex vitamins. A blend of natural **mixed tocopherols** serves to neutralize free radicals formed in the body. They also provide emulsifiers and chelating agents for complete protection against rancidity, thus contributing to supplement stability and shelf-life. **Pork liver powder** along with **chicken powder** contribute to the desirable taste of Joint Strong®, while **stabilized rice bran** is responsible for providing proper texture and flow characteristics.