

# Connection



Item # 52050

Available in bottles of 180 capsules

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## The Possible Benefits of Connection, a Dietary Supplement

- Provides key building blocks for the production of connective tissue\*
- Provides nutritional support to stabilize and protect connective tissue\*
- May support elastin and glycosaminoglycan components of connective tissue\*

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## Description

Connection was specifically designed to support the elastin and glycosaminoglycan (GAG) components of connective tissue, which are various tissues that make up the joints, tendons, ligaments and vasculature, the “web” that holds all cells together.\* Connection contains the building blocks of connective tissue, including glucosamine sulfate, N-acetyl-D-glucosamine, vital minerals, herbs and key amino acids.\*

L-Proline, L-Lysine and Vitamin C are central in connective tissue health.\* **Proline** is a key building block of the connective tissue proteins collagen and elastin.\* One fourth to one third of the collagen reinforcement rods, for example, are made up of proline. Proline can be synthesized by the body, but multiple factors can make supplementation desirable.\* **Lysine** is an essential amino acid, and like proline, is an important building block of collagen and other connective tissue molecules.\* It can augment collagen synthesis while preventing cross-link formation.\* **Vitamin C** is an effective biocatalyst that modifies lysine and proline to hydroxylysine and hydroxyproline, needed for collagen support.\*

**Glucosamine Sulfate** and **Chondroitin Sulfate** are substrates for the synthesis of GAGs and proteoglycans (PGs), which are part of the basement membranes of connective tissue (e.g. skin, internal epithelia, intima of blood vessels, heart valves, lens and sclera of the eyes, synovial fluid and lining of joints).

These GAGs subsequently become attached to protein chains, which serve as a scaffolding for them, and eventually contribute to the make-up of joints and connective tissue. They play a role in the mechanical support for the connective tissues (filling in between collagen and other fibrous components).\* It is the gel-like proteoglycans that give connective tissue its compressional strength and resiliency.\* **N-Acetyl-D-Glucosamine** is one of the disaccharides that makes up hyaluronic acid, a GAG that forms the backbone of proteoglycans and is a major component of synovial fluid and also acts as a free radical scavenger in synovial tissues.\*

The trace minerals silicon, boron, copper, zinc, and manganese play a variety of roles in connective tissue health.\* **Horsetail** extract provides a rich source of naturally occurring and readily absorbed silicon, a trace mineral critical for connective tissue and skeletal development and maintenance.\* **Boron** supports the regulation of vitamin D, phosphorus, calcium, magnesium and hormone levels, with a net effect of opposing bone mineral loss and promoting bone anabolism and protection.\* Lysyl oxidase is a **copper** dependant enzyme that is essential for stabilization of the extra-cellular matrix, specifically the enzymatic cross-linking of collagen and elastin.\* **Zinc** is required by over 300 enzymes in the body, involved with nucleic acid synthesis, protein metabolism and connective tissue repair and maintenance.\* Zinc, copper and **manganese** induce the

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production of superoxide dismutase (SOD), which converts damaging superoxide free radicals into harmless metabolites.\*

**Selenium** and **Vitamin E** work synergistically in replenishing key antioxidant systems.\* **Magnesium** and **Calcium** regulate cell trafficking of nutrients and wastes and help regulate cellular energy mechanisms vital for connective tissue maintenance and repair.\*

**Bromelain** is an enzyme derived from pineapple that has systemic proteolytic activity, which supports the body's repair function.\* **Hawthorn berry** contains flavonoids and oligomeric proanthocyanidins (OPCs) which promote connective tissue stability and antagonize the actions of the enzyme elastase, which breaks down

connective tissue.\* Flavonoids also activate proline hydroxylase, an enzyme necessary for healthy collagen biosynthesis.\* Hawthorn is vasodilatory and supports blood and lymphatic flow, which help bring nutrients and remove waste products to and from tissue.\* This is especially important in cartilage, which is largely avascular and receives its blood supply through diffusion.

Overall, Connection provides intelligent, comprehensive and sophisticated nutritional support to assist the body's maintenance and repair of connective tissue.\* It may be used in combination with Arthred® Item no. 72890, as collagen and elastin in the proper ratio are important for membrane fluidity, elasticity and memory within joint tissues.\*

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Serving Size: 2 Capsules

Servings Per Container: 90

**Amount Per Serving:**

Vitamin C (as Ascorbic Acid)	33 mg
Vitamin E (as D-alpha-Tocopheryl Acid Succinate)	55 IU
Calcium (as Calcium Citrate)	27 mg
Magnesium (as Magnesium Citrate)	40 mg
Zinc (as Zinc Citrate)	4 mg
Selenium (as Sodium Selenite/Selenomethionine)	33 µg
Copper (as Copper Sebacate)	0.27 mg
Manganese (as Manganese Citrate)	4.7 mg
Molybdenum (as Sodium Molybdate)	330 µg
Boron (as Boron Citrate)	1.2 mg
N-Acetyl-D-Glucosamine (shrimp, crab, lobster)	67 mg
Chondroitin Sulfate	130 mg
Glucosamine Sulfate (shrimp, crab, lobster)	500 mg
L-Lysine	67 mg
L-Proline	107 mg
Hawthorn ( <i>Crataegus laevigata</i> ) (Berries) Extract	295 mg
Horsetail ( <i>Equisetum arvense</i> ) (Stems) Extract	6.7 mg
Bromelain	10 mg

Other ingredients: Hydroxypropyl methylcellulose, cellulose, magnesium stearate, ethyl vanillin.

**Suggested Use:** As a dietary supplement, 2 to 4 capsules two or three times daily with meals, or as directed by a healthcare practitioner.



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