Hyaluronic Acid
Make the Connection

by Margy Squires

Stedman's Medical Dictionary defines hyaluronic acid as a "**mucopolysaccharide that is found in spaces around tissue, the synovial fluid of joints and the vitreous humor of the eyes and acts as binding, lubricating and protective agent**". *Say what?*

Translation: what you need to know is Hyaluronic Acid (HA) is naturally produced in the human body. Pronounced hy-a-lu-ron-ic acid, **this substance may sound strange but it has a unique role in body fluids and structure, particularly for keeping parts hydrated, flexible and/or moving.**

HA is a polysaccharide; made up of many sugar molecules that love to bind to tissues and water. In fact, it's when HA binds to water that it creates a viscous "gel" that provides cushioning in joints. The joint or synovial fluid reduces friction where bones meet bones. The longer and larger the HA molecules, the higher the viscosity (lubrication) and ability to resist compression, allowing joints and tissues to bear more weight. Another important role of synovial fluid is to carry nutrients to the cartilage and remove waste byproducts.

While HA makes up 50% of synovial fluid, it's also needed for most connective tissue whose function is system wide: to connect, support, insulate and protect your body. You'll find HA in tendons attached to bones and ligaments between bones. In cartilage that allow the ribs and bronchial tubes to breathe, the trachea to swallow and the larynx to create sounds. Specifically, HA is found between and separates cells in a "cushion" that allow the tissue to bear weight, absorb physical force and as a buffer from internal and external "pressures".

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As we age, HA production decreases, affecting joint and tissue mobility. Studies have also shown altered HA mechanisms in osteo and rheumatoid arthritis. Although the majority of studies are on injectable HA, pilot studies on oral supplementation at as little as 80 mg daily show impressive results. After only 4 weeks of the 8 week study, "statistically significant mean changes compared with baseline were observed" in "physical, bodily pain (and) social functioning". HA accomplishes this by increasing the body's own production, offering anti-inflammatory support and improved movement. The joints get "lubricated" and cartilage gets more "flexible". Less friction may mean less inflammation and destructive changes, both factors in the painful muscles and stiffness of "old age".

Since glucosamine and chondroitin are both part of the family of "sugar chains", taking either (or both) with HA further improves joint mobility. These two nutrients are well known for their roles in joint health, especially arthritis.

MSM (methylsulfonylmethane), much like HA, is another connective tissue builder. MSM also helps reduce inflammation and offers protection against oxidative stress which may cause cellular damage. MSM promotes exercise recovery, healing of wounds and delayed onset muscle soreness and stiffness. One very interesting skill MSM possesses is facilitating ingredient delivery by improving cell wall flexibility. Thus adding MSM to a formula increases the uptake of other nutrients.

I've only talked about some of the things that HA is "connected" to so to speak. You'll find HA in the scalp, eye fluids and gum tissue, affecting the health of these body parts as well. The FDA approves the use of HA in cataract surgery, corneal transplants and repair of retinal detachments to maintain normal eye fluid during surgery. HA is also behind

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FDA approved injectable cosmetic fillers for the cheeks and lips. Recent research is looking at HA, how it binds to cell surfaces and interacts with cell signaling. No doubt more good news to report later!

Notably, HA is found abundantly in the skin. HA boasts the ability to bind 1000 times its own weight in water, offering skin a more youthful "plumpness", firmness and elasticity. HA helps the outer layer (epidermis) retain water and is part of the connective tissue collagen that makes up skin's other two inner layers. Dry, aging skin is more prone to develop facial wrinkles and sagging. Seventy-six women between ages 30-60 years with clinical signs of aging (wrinkles) were given HA creams to apply twice a day to their most pronounced facial areas for 60 days. Measurements of skin hydration and elasticity were performed before treatment, at day 30 and day 60. Use of HA "led to significant improvement in skin hydration and elasticity". Applying a topical cream with HA has reported benefits. You might even say HA is your skin's "youth" in a jar!

Joints. Connective tissues. Movement. Flexibility. Protection. Youthfulness. For everything HA accomplishes, TyH has added hyaluronic acid with MSM as an "a la carte" supplement to help keep you "connected" and running smoothly.

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Health POINTS

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