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**Put the Spring in Your Step with Hyaluronic Acid**

As everyone past forty knows (or will soon get to know when they reach that period of life), the body tends to slow down a bit. It is a gradual event and part of the natural process of getting older. By the time most of us hit the retirement years of the early sixties, we have become much more aware of this tendency.

We are apt to envy our grandchildren (for those who have them), in their lithesome motions. Perhaps, even wish that we could somehow turn back the clock a few years, in order to move about as easily as they seem to do. As we age, our joints creak, our muscles sag, our arteries harden, and our bones soften.

Oh, that we could be young again, not just as a child at heart, but also in terms of body motions as well. Is this wishful thinking, or can something really be done to help us regain the “bounce of our youth”?

**Understanding Body Tissue**

To search for meaningful answers to the question of finding our lost youth, we must first understand something about body tissue. Body tissues are communities of live cells bound together and working closely with each other. Each individual tissue consists of a group of closely associated cells that perform related functions and are similar in structure. Between these cells, though, there is nonliving extracellular material.

The word tissue derives from an old French term meaning “to weave”. Those in Medical Science, who have had to examine bodies internally, know that different tissues weave together to form the “fabric” of the human specimen itself.

The four basic “weave patterns” of human tissue are: covering (epithelium), support (connective), movement (muscle) and control (nervous). Bear in mind that these terms reflect only a fraction of the functions that each tissue performs. However, for our discussion purposes here, and to keep things simple, we shall confine ourselves to just these four tissue “weavings”.

The covering and control “weaves” have to do primarily with skin and nerve sensation. While the latter certainly is important to initiating muscle movement, it is not the primary focus right now of regaining youthful agility. But the middle pair, connective and muscle tissues have everything to do with what we are seeking after.

**Connective Support**

Connective tissue is the most diverse of all body tissue. There are four main classes and numerous subclasses of this. At first glance, the great variety of connective tissues may seem bewildering, but all of them share the same simple structural plan. Their cells are always separated from one another by a large amount of material known as the extracellular matrix. This differs markedly from skin tissue, in which the cells are crowded closely together.

Now, the most abundant type of connective tissue is loose (areolar) connective tissue. This particular kind underlies almost all of the covering tissue beneath the outer layer of skin. Loose connective tissue also surrounds almost all of the small nerves and blood vessels, including the tiny vessels known as capillaries. Since no cell can lie far from a nutrient-carrying capillary, no cell can lie far from loose connective tissue, either. In fact, one might say that all other tissues and cells in the body either border loose connective tissue or else are embedded within it.

Just as a piece of cloth is interwoven with many strands of thread-like material to give it consistency, so, too, is loose (areolar) connective tissue interwoven with three types of fibers that give this tissue its supportive properties. They are collagen, reticular, and elastic fibers. It is with the first two, both being collagen fibers, that we derive the necessary flexibility and springy action to move without any impediments.

**The Nature of Collagen**

Collagen is the chief material forming loose connective tissue that enables us to bend, bounce, stretch, and be fairly loose-limbed. In our youthful years, there is more than enough to make us as resilient as a rubber band. However, as with any old piece of used elastic, it will eventually weaken and lose some of its tensile strength. If stretched far enough when in such poor condition, it runs the risk of snapping or breaking in two.

Collagen fibers are the strongest and most plentiful kind making up loose connective tissue; they allow this tissue to withstand considerable tension (pulling forces). Pulling tests have demonstrated that collagen fibers are stronger than steel fibers of the same size, believe it or not!

When examined beneath a light microscope, these thick collagen fibers appear as bundles of thinner, striped threads called unit fibrils. These, in turn, consist of still thinner strands that are strongly cross-linked to one another. This cross-linking is the source of collagen’s great tensile strength.

Think of these fascinating weaves in other terms: the thick collagen fibers and their thinner unit fibrils are similar to braided hair, while the even thinner, cross-linking strands beneath them form a tight, web-like network similar to fish netting. It is this dual combination of both braided and webbed fibers that give collagen its remarkable elasticity, when our bodies are still young.

So far as the second type of connective tissue fiber goes, those reticular filaments mentioned earlier are also another kind of collagen unit fibrils. These short fibers cluster into delicate networks that cover and support all structures bordering the connective tissue. Capillaries are coated with fuzzy nets of these reticular filaments, and the same fibers also border the nearby covering (epithelia) tissue. Individual reticular fibers glide freely across one another whenever the network is pulled, so they allow more “give” than do regular collagen fibers. Thus, the capillaries can expand a bit without being choked by their collar of reticular fibers.

Thus, we have not one but two forms of collagen at work within all loose connective tissue that lays beneath the skin dermis and surrounds most small nerves, blood vessels and blood capillaries. Regular collagen fibers are both braided and webbed in cross-linking fashion. The other collagen is of a special type, consisting of shorter fiber clusters that form delicate and fuzzy networks, which border the stronger collagen fibers.

**When Collagen Ages**

As our bodies grow older, the collagen forming our connective tissue undergoes certain changes itself. For one thing, the top two fiber bundles become more tightly braided. In the old days when girls’ braids were a lot more fashionable than now, mothers would sometimes accidentally braid their daughters’ long hair so tightly that it would give the poor girls’ headaches. Then, the mothers would have to redo the hair, making sure it was more loosely braided next time so as not to cause any more discomfort.

The thinnest of the three collagen filaments is also transformed by age, as well. These cross-linking strands lose much of their elasticity and tend to become a great deal more rigid. When rigidity of any kind sets in, such webbed strands are not as springy as they use to be in earlier years. Thus, a combination of fiber tightness and rigidity produces a collagen substance incapable of being pulled or stretched as far as younger collagen fibers can be.

The body’s entire range of motions then becomes gradually restricted and, in more profound cases, even severely limited. We know this has happened when our joints begin to creak more often, our muscles sag or go spastic, our arteries harden, and our bones soften up to the point of becoming brittle.

**Introducing An Age “Shock Absorber” – Hyaluronic Acid**

In every driven vehicle running on four or more wheels, there are two sets of shock absorbers located in the front and rear portions of the under-carriage. These devices are installed for the sole purpose of “cushioning” our rides every time we hit a street chuck hole, go over a curb or speed bump, or travel down a bumpy road somewhere. If we did not have shock absorbers, rides over such difficult terrain would literally have our heads nodding, our teeth clacking, and bones and joints shaking often until we finished our trip. The experience from something like this would surely leave our bodies sore for quite awhile.

In nature, there is a naturally-occurring substance, which can act as a kind of “shock absorber” for the aging collagen in our bodies. This substance is called Hyaluronic Acid or HA, which has been extensively studied by the Japanese. This came to the attention of scientists not too long ago when the elderly residents of the small village of Yuzuri Hara, two hours outside of Tokyo, were recently studied. Even though some of them still smoked quite heavily, almost none manifested the typical signs of collagen aging so common with Westerners.

Dr. Toyosuke Komori, the town physician, has written several books on the remarkable youthfulness of so many of his elderly peers. He observed that the hilly terrain surrounding the village was better suited for growing different types of carbohydrate-rich vegetables, besides the main Japanese staple of rice that is grown everywhere else in the country. Villagers plant, harvest and eat satsumaimo (a type of sweet potato), satoimo (a sticky white potato), konyaku (a gelatinous root vegetable concoction), and imoji (a type of potato root).

Now, all of these tuber vegetables have one thing in common: they stimulate the body’s natural production of HA. It is the sticky and gelatinous quality of the carbohydrates in such vegetables, which brings this about. Other types of carbohydrates do not even begin to measure up in this respect to what these tubers are capable of initiating within the body.

Exactly how HA acts as a sort of “chemical shock absorber” in order to rejuvenate old collagen still remains something of a medical mystery. However, this much can be said for it: HA goes directly to support and movement tissues in order to restore strength and resiliency. Whether new collagen is manufactured to replace the old, or the noticeably tight “weave patterns” of connective and muscle tissues are considerably “loosened up”, cannot be determined at this time.

Suffice it to say, though, that with the presence of additional HA in any kind of Collagen Type II (CT II) dietary supplement, cell renewal is sure to occur in ways never before imagined. When this wonderful event takes place within the body, then any older person suffering from restrictive movements will find himself or herself with more lively finger movement, brisker arm swings, more vigorous back and hip bending, nimbler knees, and greater agility in footsteps.

**Simply put, Hyaluronic Acid gives collagen a “new lease” on connective tissue life.** The body feels considerably loosened, and with that occurring, an individual can return to a time in life when physical movement was taken for granted, and youth seemed eternal.

**CellRenew Collagen Type II with Hyaluronic Acid**

***Exclusively written for Applied Health Solutions by: Dr. John Heinerman****, medical anthropologist and Director of the Anthropological Research Center in Salt Lake City, Utah.  Dr. Heinerman has an international reputation for his understanding of the healing power within plants and foods. He is a well-respected author of over twenty-four books on alternative health, including several best-sellers, published by Prentice Hall.*

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**About the Author:** [**Applied Health**](http://appliedhealth.com/author/journaleditor/)



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