

Health matters

And the Springs Fly Out

By Dr. Bob Wilson

Nov 08 2009

Are you in a good mood? This story of aging will fix that, guaranteed. Long ago and far away you were born with good tendons, but some where along the way you got bad tendons, painful tendons. They make it hard to lift, pull, grip, or jump. What the hell happened? Are you a bad person? Yes you are, but that is not why your tendons went bad. They went bad because of chemistry. To understand why, you have to understand that you are a big bag...a big bag of water. Within that big bag of water are trillions of cells where trillions of chemical reactions are happening every second. Since no body is perfect, some of these reactions go wrong and mistakes are made. Some of these mistakes don't get repaired. Given long enough (exactly one lifetime) these mistakes lead to the creation of what we scientific professionals refer to as "dead". But before dead happens, oldness happens. Oldness is the slow, relentless accumulation of these biochemical mistakes, including painful tendons. Are you still in a good mood? Read on.

How does tendon oldness happen? Tendons are made up of protein fibers, collagen, and some cells. When tendons are young, they are populated by cells called "fibroblasts" which are very active and very good at growing new tendon material. Fibroblasts eventually mature into older cells called "fibrocytes" which are not so good at growing new tendon parts and the repairs cannot keep up with the damage. We adapt by playing tennis once a week instead of three times allowing the fibrocytes more time to perform the repairs. Eventually we adapt by sitting absolutely still, forever. Then there are the collagen fibers where something called "cross linking" occurs. Cross linking is the formation of chemical bonds from fiber to fiber. They cause the fibers to stick together and reduce the flexibility of the tendon, more oldness, and we feel stiff. Finally there are the little tears that form in tendons. These tears are microscopic. If enough of them form, they weaken the tendon to the point where a much bigger tear can happen. Do you know how the steel girders of a bridge can slowly develop tiny cracks over time and then suddenly collapse without warning? Well that is nothing at all like tendons, so forget about it.

Prevention depends upon the type of tendon injury which comes in two flavors; overuse and abrupt trauma. Overuse injuries are the result of repetitive micro trauma caused by pushing the tendon just slightly harder than it can tolerate over and over. Avoid this by warming up, using high quality shoes, varying your exercise routine, advancing the intensity of your exercise program slowly, eating a non-inflammatory diet (low in omega 6 fatty acids), and smoking and drinking heavily ...no wait, not the last two. If you do get chronic tendon pain, reduce your exercise, switch to another modality such as cycling instead of running, and then and only then, drink and smoke heavily. You may also need some physical therapy.

Abrupt trauma is caused by a sudden force that overcomes the strength of the tendon. There is sudden pain, loss of strength, and usually a couple of springs fly out and bounce around the floor. Do not bring the springs into the clinic, but an ultrasound exam can determine if the tendon is partially or completely torn. Regular exercise is your best prevention against tendon tears. Most of these injuries will heal with rest and a gradual return to activities. If the tendon has completely ruptured, it will probably need surgical repair. Still happy? Wow.