The Shocking Truth About Tennis Elbow

If you're reading this, you either have tennis elbow or you know someone who has it. Once you have it, your daily life can be adversely affected. You've probably searched the Web for answers and products that promise to help. **Unfortunately, there's a lot of misinformation out there that not only won't lead to recovery, but it can also make the condition worse.**

Only about 10% of tennis elbow cases are sports-related – 90% are from everyday repetitive motion activities like hammering or commercial painting that involve a constant pronation or supination of the hand gripping the handle of a weighted object where the action delivers a shock.

Epicondylitis is a Myth

For starters, "epicondylitis" is a myth. "Itis" implies that inflammation is a cause or result of the condition and there is no medical or biological basis for that conclusion. **Elbow tendon damage from overuse or misuse has a non-inflammatory pathology.**

"Most currently practicing general practitioners were taught, and many still believe, that patients who present with overuse tendinitis have a largely inflammatory condition and will benefit from anti-inflammatory medication. Unfortunately, this dogma is deeply entrenched. Ten of 11 readily available sports medicine reviews specifically recommend non-steroidal anti-inflammatory drugs for treating painful conditions like Achilles and elbow tendinitis ***despite the lack of a biological rationale or clinical evidence for this approach.****" Prof KM Kahn, Natl Institutes of Health*

Inflammation is the body's natural response to healing. Attempting to reduce inflammation compromises this function and, for tennis elbow, it has no effect on mending a stretched or torn extensor tendon. **Extended use of anti-inflammatories can delay healing and increase the likelihood of further damage.**

Just Because It FEELS Inflamed Doesn't Mean It Is

Yes, we understand your Tennis Elbow may feel like it's inflamed! Those burning sensations, that achy feeling, and the occasional jolt of searing pain would lead any sensible person to think that there must be inflammation in there somewhere! It's just that medical research doesn't support this contention. (But it sure sells a lot of anti-inflammatories). The symptoms in this case are extremely misleading and rest assured there's nothing sensible or straightforward about Tennis Elbow.

What researchers started discovering decades ago is that inflammation is actually missing in action with Tennis Elbow and there's a sneaky, insidious **degeneration process** going on in the tendon, which is a lot worse than a little inflammation.

Tennis or Pickleball Elbow is in fact "tendinosis" (degeneration) not tendonitis (inflammation), suggesting a completely different path to recovery.

tendinosis

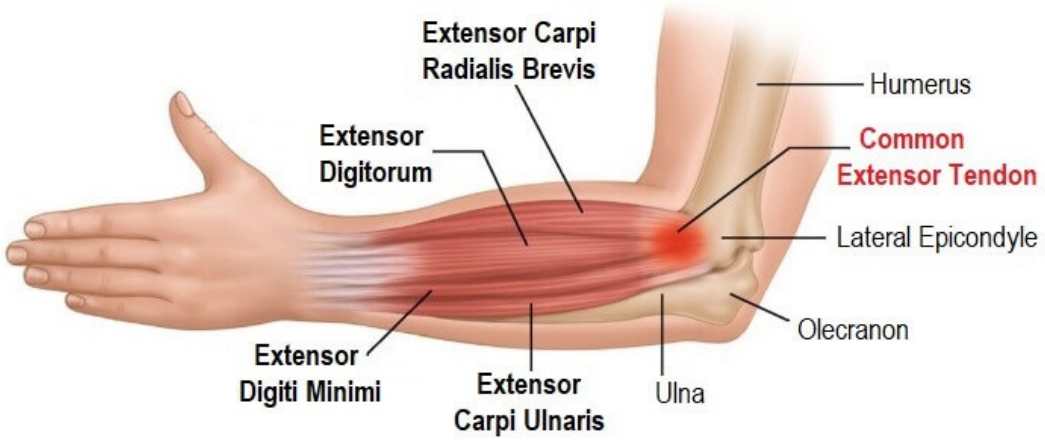
noun

ˌten-də-ˈnō-səs

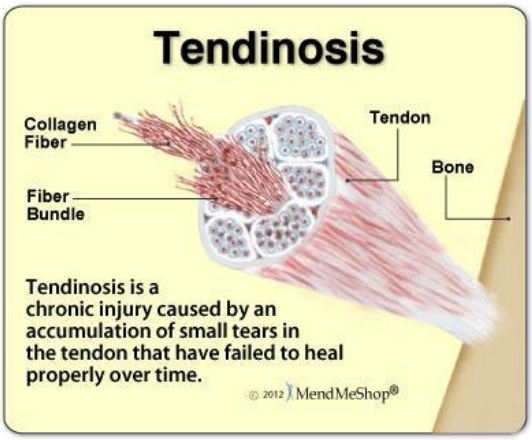
: progressive degeneration of a tendon (as from chronic overuse) that usually involves fraying or tearing of fibrous tissue and is typically accompanied by pain and stiffness but little inflammation.

Let's look at the anatomy

The extensor muscles are in the back of the forearm and have long tendons connecting them to bones in the hand where they exert their action. Further up the arm, the common extensor tendon attaches the extensor muscles to the lateral epicondyle of the humerus bone at the elbow.



Tendons are made up of more than 90% collagen, a fibrous connective tissue that contributes to their strength and structure. **The ends of tendons are the most solid parts and can be up to 99% collagen.** The collagen fibers in tendons run parallel to each other and are grouped into fascicles. Each fascicle is bound by a loose connective tissue that contains thin collagen fibrils and elastic fibers.



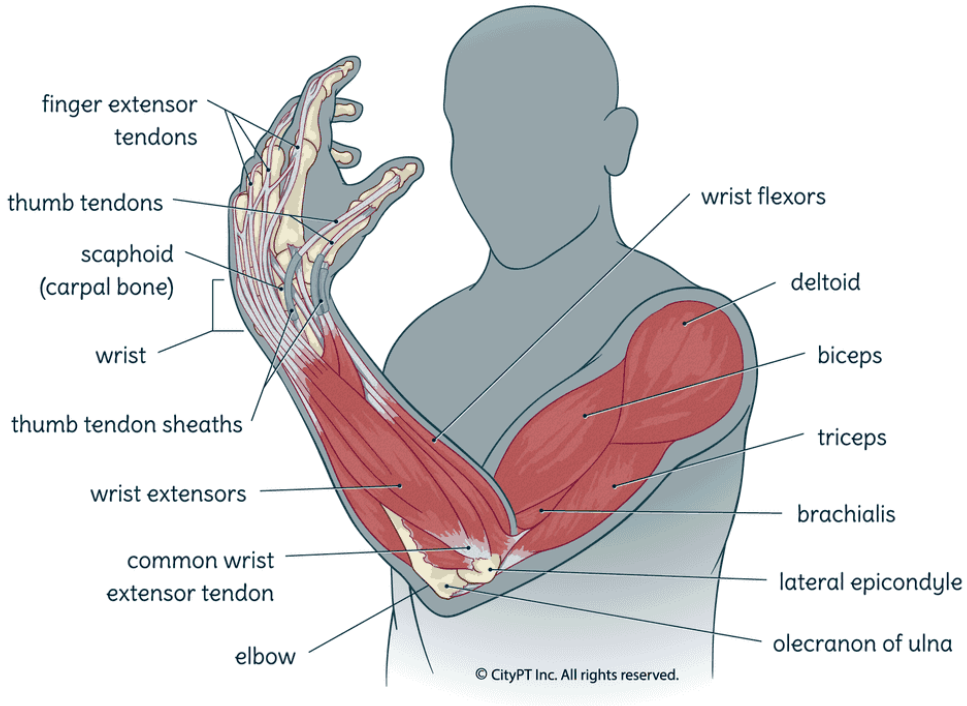
Tennis elbow is typically a stretch or tear in the extensor tendon where it connects to the bone. *It occurs when there is a degeneration of the collagen protein that forms the tendon at the lateral epicondyle of the elbow. The fibers of the collagen protein malform in a cross hatched pattern causing aggravation of the tendon with repetitive loading due to poor force transmission. A healthy tendon should have nicely aligned collagen fibers which transfer forces through the tendon efficiently. Ushiki T, Archive of Histology*

Increasing blood supply to expedite healing is also a Myth

The thing is, tendon tissue is mainly collagen and tendons have very little blood supply, so despite the entrenched dogma, increasing blood flow lacks the biological rationale and clinical evidence to be functional factors in a recovery program. Medical grade compression sleeves (not over-the-counter sleeves) and other gadgets can affect blood flow, but these products don't expedite recovery from elbow tendinosis.

The Anatomy of Tendinosis

The extensor muscle is connected to the fingers and elbow by tendons. Finger tendons connect to the elbow at the lateral and medial epicondyles, which are bony bumps on the outside and inside of the humerus bone, just above the elbow. Together, the assembly allows the fingers to move and grasp and the wrist to bend.



The four stages of tendinosis

Stage 1: Pain after sports activity, or pain at the beginning of activity that disappears with warm-up but returns with fatigue

Stage 2: Pain during and after activity

Stage 3: Prolonged pain during and after activity

Stage 4: Constant pain independent of activity

Repetitive forearm pronation pulls on the extensor tendon at the bone and can lead to microtears in the collagen. This degeneration is what is called Tendinosis.

Pronation is a silent assassin

Whether they're wielding a hammer or playing pickleball, most people don't realize that the form of their action is causing their tendinosis. They don't consider that striking a nail with a 16-ounce hammer is almost always a pronation…at different angles…with a hard stop. Without pronation when hammering, there's just tapping. Tapping is like "pushing" in tennis. Most players aren't pushers. They see the pro players hitting those cool topspin shots and big serves, so they over-pronate with that long 11-ounce frame pulling on their elbow. Pickleball can be the worst of all because the balls don't bounce…they stay low, requiring an upward stroke…the courts are small, and the pace is fast…there are no volleys from the elbow or shoulder like tennis but rather quick topspin ping-pong-like "speed-ups" with an 8-ounce paddle at the kitchen line – a pronation – not to mention many other awkward flails on shots because there's no time to get set.

What do these activities that cause tendinosis have in common? **Gripping the tool or racquet handle with force. Fingers are lightning rods for shock.** The impact of every strike is transmitted through those finger tendons to the forearm muscles then to the elbow. And because the muscles, tendons, and nerves travel through the arm, the pain, while usually worse over the elbow, can travel to the upper arm, lower arm, and to the wrist and hand. **Most people never consider that their strike form and grip intensity are causing their tendinosis.**

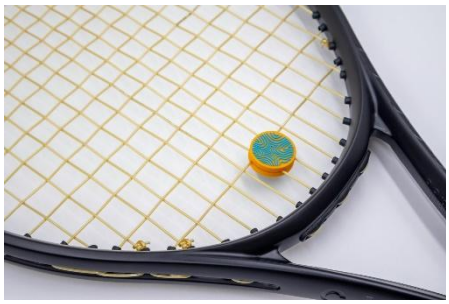
What's the Path to Recovery?

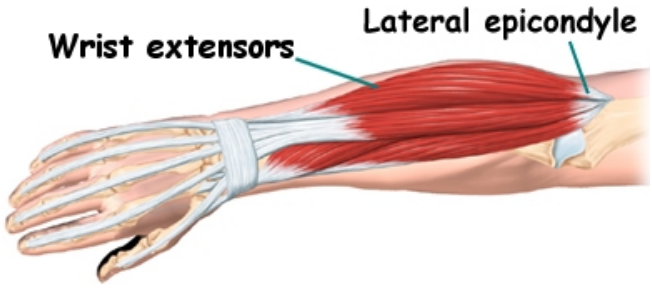
When it comes to pickleball, tennis, hammering…any Repetitive Motion Activity that delivers a hand-arm vibration impact, people just don't see the need to "warm-up" their hand/wrist/forearm. They just go out and play…or hammer. You wouldn't run a marathon without training, would you? So, keeping a 2lb hand weight in your bag for pre- and post-activity stretches just makes sense. It also makes sense to refrain from the aggravating activity for at least 10 days if Stage

1 or 2 pain is present and then start a preventative regimen. If the pain is Stage 3 or 4, a visit to your PT is a must.

It doesn't make sense to take a bunch of ibuprofens, slap on some pain cream or an armband and continue playing! Over time, this will only make the condition worse.

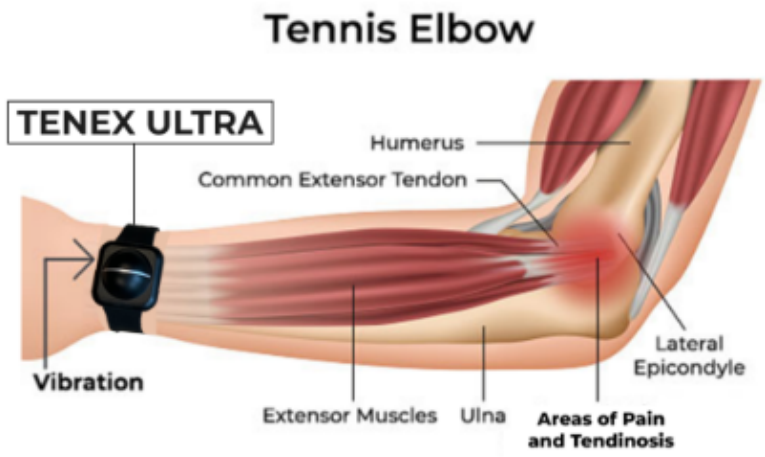
One approach that is not about reducing inflammation or increasing blood flow has been proven to help millions of tendinosis sufferers. **It sits on top of the hand tendons at the wrist and basically absorbs the shock from grip and object impact…like a dampener in a tennis racquet**.





The Shocking Truth?

Elbow tendinosis is largely a result of compromised collagen fibers. When these fibers are stretched or torn, their ability to act as a shock absorber is greatly reduced. **There is no scientific basis that compression sleeves or arm bands can reduce the shock from Repetitive Motion Activities.**



Only the TENEX Elbow Shock Absorber is proven to replace the shock absorption lost by an injured extensor tendon, allowing the collagen to heal and resume its intended function.

Plan for Recovery

For Stage 3 and Stage 4 cases, next steps involve an immediate cease of the aggravating action for 2 weeks followed by a visit to a physical therapist. Most people largely ignore Stages 1 and 2 which typically lands them at Stage 3. Not good. A viable self-treat 60-day Recovery Plan for Stages 1 and 2, developed by nationally recognized PT, Dr. Dave Candy, is available on the TENEX Pain Solutions website, including exercises and milestones.

The purpose of this review is to get tendinosis sufferers to take a closer look at the false and real science of their condition and possible causes. Racquet sport players need to be more aware of their stroke mechanics and warm-up practices. Lessons from a certified pro can often correct bad form and reduce the likelihood that tendinosis will persist.

Ushiki T, Collagen, Reticular Fibers, Archive of Histology, Cytology, 2002

Yang G Rothrauff BB, Tendon Regeneration & Repair, Today, 2013

Edwards DA, The Blood Supply of Tendons, Journal of Anatomy, 1990

Khan KM, Maffulli N, Time to Abandon the Tendinitis Myth, Natl Institutes of Health, 2002

Boyer MI, Overuse Tendinosis, Not Tendinitis, Hastings, 2000