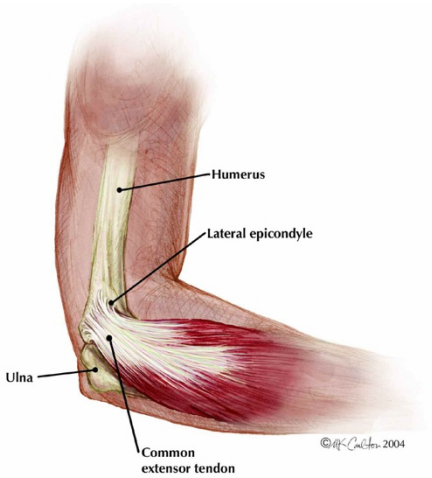
TWIN CITIES ORTHOPEDICS

Lateral Elbow

Dr. Jonathan Reid

BACKGROUND

The lateral epicondyle is a bony prominence on the distal end of the humerus, on its lateral (outer) side, just above the elbow joint. It sits proximal to the capitellum, the rounded articular surface that meets the radial head. Unlike the medial epicondyle, it's a non-articular structure — it doesn't participate directly in the elbow joint surface but serves as the common extensor attachment site for a number of forearm muscles. The lateral epicondyle experiences significant repetitive tensile loading, especially at the Extensor Carpi Radialis Brevis (ECRB) origin.



Key biomechanical points:

1. **Eccentric loading**: During gripping activities, the wrist extensors (especially ECRB) contract eccentrically to stabilize the wrist in slight extension, counteracting the flexor pull during grip. This repeated eccentric stress is a major factor in overuse injury.
2. **Lever mechanics**: Because the extensor origin is proximal to the elbow joint axis, contraction of these muscles creates torque not just at the wrist but transmits tensile stress back to the epicondylar attachment — amplified by repetitive wrist/finger motion (typing, racquet sports, manual labor).
3. **Vascular watershed zone**: The ECRB tendon origin has a relatively poor blood supply, making it more vulnerable to microtrauma and slower to heal once degenerative changes begin.

Given the biomechanics of the common extensor tendon that afford it significant strength and mechanical advantages, as well as its important role in stabilizing the wrist during gripping activities, it is tendinous region prone to injury.

- **Lateral Epicondylosis** — By far the most common lateral elbow pathology; a degenerative tendinosis, a process termed angiofibroblastic hyperplasia (not true inflammation) of the extensor carpi radialis brevis origin that is a cascade of a number of events: 1) organized Type I collagen is replaced by thinner, weaker Type III collagen in a disorganized manner, 2) proliferation of ground substance (mucoid degeneration), and 3) growth of new blood vessels and nerve fibers. This degenerative process creates a thicker, weaker, and functionally painful tendon.
- **Lateral Epicondylitis** — The traditional/older term, implying an acute inflammatory process ("-itis") of the common extensor origin (primarily ECRB) at the lateral epicondyle. Still widely used clinically and colloquially "tennis elbow."
- **Radial Tunnel Syndrome** — Entrapment of the posterior interosseous nerve (a branch of the radial nerve) as it passes through the radial tunnel; often mimics lateral epicondylosis but tends to produce more diffuse neurogenic pain distal to the epicondyle.
- **Lateral collateral ligament injury/instability** — Damage or laxity of the lateral (radial) collateral ligament complex, often from trauma, dislocation, or iatrogenic injury (e.g., prior surgery or repeated corticosteroid injections).
- **Osteochondritis dissecans of the capitellum** — Seen mainly in young throwing or gymnastic athletes; repetitive valgus/compressive stress on the radiocapitellar joint leads to subchondral bone injury and possible cartilage fragmentation.

INITIAL MANAGEMENT

Regardless of the specific diagnosis, initial management of injuries to the lateral elbow start with unloading the tendon or ligament (or joint in the case of osteochondritis) to reduce ongoing stress, along with measures to control inflammation and pain. A home exercise program emphasizing gentle stretching is typically introduced early to maintain flexibility and support the healing process. A formal course of physical therapy is often prescribed as well, progressively strengthening the tendon complex so the person can return to full activity with an elbow that is more resilient and better conditioned for their sport or activity level.

Oral OTC Medications

- **Ibuprofen** (Advil) — For adults and children over 12, 200–400 mg every 4–6 hours (not exceeding 1200 mg per day)
- **Acetaminophen** (Tylenol) — For adults and children over 12, 325-650 mg every 4-6 hrs, (not exceeding 4000 mg per day)
- **Lidocaine patches** (Lidoderm 4%) — Recommended to wear for 12 hours, with 12 hours in between applications

Oral Prescription Medications

- **Meloxicam** (Mobic) — Take one tablet as prescribed with food, do not take this with any other NSAID (e.g., Ibuprofen)

Daily Stretches

- **Wrist extensor stretch** — With the elbow straight, flex the wrist downward, holding the end-range position to stretch the extensor tendons on the outside of the elbow. Your other hand can be used to apply slight, additional pressure down on the wrist.
- **Wrist flexor stretch** — With the elbow straight, extend the wrist upward, holding the end-range position to stretch the flexors on the medial elbow. Your other hand can be used to apply slight, additional pressure, pushing the fingers further up/back.
- **Prayer-to-reverse-prayer stretch** — Starting with palms together at chest height, rotate the hands so fingers point downward, then reverse to fingers pointing upward, moving through wrist flexion and extension.

Physical therapy: Appointments are scheduled by patients calling the location specific scheduling phone number, which can be found on the provided physical therapy card or by going online.

Ultrasound-Guided Corticosteroid Injection

INTERVENTIONAL MANAGEMENT

Conservative management for lateral elbow injuries is often successful in alleviating symptoms and helping the body heal. Lateral elbow pain that persists despite conservative management, as outlined above, often is indicative of a structural pathology that has not recovered or healed adequately. Depending on the etiology or nature of this structural pathology, additional recovery time may be necessary or an intervention may be required. Reevaluation is likely indicated towards this determination, however, advanced imaging (MRI or Ultrasound) can be helpful to review at the time of reevaluation to better understand the structural pathology.

- Advanced imaging or 0 EMG will likely be recommended at the time of reevaluation. Please reach out to Rhodora **(952-456-7209)** to coordinate the appropriate imaging.

Interventional management is tailored to the structural issue preventing recovery and turn to pain-free activity/sport.

- **Orthobiologic Procedure** — Autologous stem cells or blood products (Platelet-rich plasma) can be used to augment tendon or cartilage recovery
- **Percutaneous Tenotomy (TENJET)**— A minimally invasive intervention that identifies and removes diseased tendon tissue while preserving healthy tendon tissue through guided, high-velocity saline debridement
- **Open Debridement and repair**— Surgical resection of diseased tendon tissue with potential release and re-insertion with anchor screws to the original tendon origin site

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For scheduling or questions, please call **952-456-7209** https://tcomn.com/physicians/jonathan-reid

- **Arthroscopic microfracture/drilling of capitellum** — Arthroscopic perforation of the subchondral bone to stimulate a healing (fibrocartilage) response and vascular ingrowth in the damaged cartilage/bone area
- **Osteochondral defect reconstruction (Autograft or Allograft)** — Arthroscopic placement of cartilage plugs to replace larger or unstable osteochondritis dissecans lesions of the capitellum

Notes