

LECTURE 11 · RU-RMT 20 PATHOLOGICAL TREATMENTS

Lateral Epicondylitis

“Tennis elbow” — a degenerative overuse tendinopathy of the common wrist extensors

How this lecture fits together

The same degenerative-tendon story you met in the biceps, now at the elbow. Lateral epicondylitis is an overuse tendinopathy of the wrist extensors — so, again, we think remodeling and loading, not inflammation.



01 · Understanding

Why it is tendinosis, the ECRB anatomy, the overload mechanism and trigger points.



02 · Assessment

Signs, the radial-nerve differential, what massage addresses and scope.



03 · Planning

Conservative care, rehab and eccentric loading, medical options and pacing.



04 · Protocol

The staged soft-tissue techniques, deep friction, stretching and self-care.

What you will be able to do

By the end of this lecture you will understand why “tennis elbow” is a degenerative tendon, screen it from nerve pain, and treat it with staged soft-tissue work and loading.



Anatomy & pathology

Identify the common extensor tendon and ECRB, and the degenerative pathophysiology.



Assess & differentiate

Clarify severity and distinguish epicondylitis from radial-nerve compression.



Treat the tendon

Reduce extensor hypertonicity and stimulate collagen repair with friction and loading.



Coach self-care

Prescribe eccentric loading, stretching and ergonomic change for a slow-healing tendon.

DEFINITION

What is lateral epicondylitis?

Lateral epicondylitis — “tennis elbow” — is one of the most common upper-extremity overuse problems and a major source of occupational injury. Despite the name, most people who develop it are not tennis players.



An overuse disorder

A cumulative-trauma disorder of the common wrist-extensor tendons at the elbow.



Not just tennis

Named for tennis, but the majority of sufferers have never played.



Occupational

A large share of upper-extremity occupational injuries fall into this category.

Source: *Lateral epicondylitis / overuse injuries covered in Rattray & Ludwig (2000), Clinical Massage Therapy (overuse injuries).*

Tendinosis, not tendinitis

Just like bicipital tendinosis, “epicondylitis” rarely involves true inflammation of the epicondyle. The “-itis” is a misnomer — the tissue shows collagen breakdown, not inflammatory cells.



What the name implies

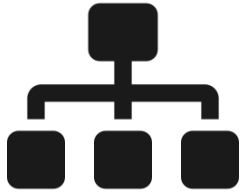
- The suffix “-itis” suggests active inflammation.
- Historically treated with ice, anti-inflammatories and cortisone.
- That model no longer fits the chronic tissue.



What is actually happening

- Collagen breakdown in the tendon fibres — tendinosis.
- Healing requires reduced tension on the damaged fibres.
- And reduced hypertonicity in the associated muscles.

Source: Degenerative (tendinosis) model; Rattray (2000) uses “tendinitis.”



01

SECTION ONE

Understanding Lateral Epicondylitis

One small tendon, one concentrated load, repeated until it fails to repair. The anatomy of the ECRB and the wrist extensors explains where the pain lives and why it lingers.

The common extensor tendon & the ECRB

The primary problem is in the common extensor tendons of the wrist and hand. The fibres of the extensor carpi radialis brevis (ECRB) appear to be affected most.



The ECRB

The extensor carpi radialis brevis is the muscle most often involved.



A small attachment

Its small attachment on the lateral epicondyle concentrates the muscle's force into a tiny area.



Any extensor

Any of the wrist extensors can be involved, but the ECRB bears the brunt.

Source: ECRB as primary site — standard anatomy; overuse tendinopathy per Rattray & Ludwig (2000), *Clinical Massage Therapy (overuse injuries)*.

Where the tendons converge

The tendon fibres from all the wrist-extensor muscles come together near their attachment at the lateral epicondyle — with little distinction between the separate tendons where they meet the bone.



A common origin

The extensor tendons blend into a common attachment at the lateral epicondyle.



Hard to separate

There is little distinction between the individual tendons at the epicondyle.



Position loads the ECRB

Its anatomical position means certain activities load the ECRB more than its neighbours.

The overload mechanism

Most lateral epicondylitis results from excessive concentric wrist extension or eccentric wrist flexion. Repeated, either action can overwhelm the tendon fibres and drive degeneration.



Concentric extension

Repetitive, forceful wrist extension loads the extensor tendons.



Eccentric flexion

Eccentric wrist flexion — the lengthening load — is just as damaging.



Repetition overwhelms repair

Performed over and over, the load outpaces the tendon's capacity to repair.

Who develops it, and how

The load need not be dramatic — sustained, low-level tension does it too. Computer use is a classic example: gripping a mouse holds the extensors in constant isometric contraction.



Repetitive occupations

Grocery clerks, computer workers and carpenters are commonly affected.



Sustained isometric load

Chronic extensor tension — as in mouse use — fatigues the tendon over time.



A whole-chain problem

Posture, supination/pronation and kinetic-chain patterns all contribute — not just keyboard time.

Myofascial trigger points

The same constant contraction that fatigues the tendon also breeds trigger points in the extensor muscles — and they can imitate, or add to, the pain of tendon degeneration.



Born of constant contraction

Sustained extensor contraction seeds trigger points in the muscle bellies.



They mimic the tendon

Their referred pain resembles the pain of tendon-fibre degeneration.



Often concurrent

Treat them as a likely co-existing problem, not an either/or.

How the tendon degenerates

As with the biceps, degeneration builds in a loop: repeated load outpaces repair, collagen breaks down, healing fails in a hypovascular region, and the tendon remodels into disorganised, weakened tissue.



Repetitive load

Concentric extension and eccentric flexion exceed the tendon's capacity.



Collagen breakdown

Fibres develop micro-damage faster than they can be repaired.



Failed healing

Poor local blood supply slows repair; disorganised matrix is laid down.



Degeneration

Collagen disorganisation and fibroblastic change — tendinosis.

Do forearm bands help?

Forearm support bands are routinely recommended to offload the tendon — but the evidence is not settled, and they may not be the easy answer they seem.



The claim

Bands are advocated to decrease collagen degeneration and tendon injury.



The evidence

Whether they actually reduce epicondylitis remains undetermined.



A caution

One study found bands increased fatigue in unimpaired individuals — possibly adding to the problem.



02

SECTION TWO

Presentation & Assessment

The picture is usually clear — lateral elbow pain with gripping and wrist extension. The crucial assessment job is to make sure it is the tendon, and not the radial nerve, that is at fault.

How it presents



Lateral elbow pain

Pain over the lateral epicondyle, often spreading into the forearm extensors.



Provoked by use

Worse with gripping, lifting and resisted wrist extension; a gradual onset.



Debilitating

Pain can interfere with everyday activities — a kettle, a doorknob, a handshake.

Clarify before you treat

Accurate orthopedic assessment does two things here: it confirms the tendon as the source, and it grades severity — which decides how intense your techniques may be.



Confirm the source

Reproduce pain with resisted wrist extension and palpation at the epicondyle.



Grade severity

Judge how irritable the tendon is — severe cases need a gentler start.



Match intensity to stage

Hold the more intense active-engagement methods until later in rehabilitation.

Is it the tendon — or the radial nerve?

This is the most important screen in this lecture. Compression of the radial nerve can produce pain in the very same region as lateral epicondylitis — and vigorous friction over a compressed nerve makes it worse.

Vigorous deep-friction techniques could aggravate a radial-nerve compression. *Clarify the condition with accurate orthopedic assessment before treating, to be sure you are not working over a nerve pathology. When in doubt, refer.*

Source: Radial-nerve differential & friction caution consistent with Rattray & Ludwig (2000), *Clinical Massage Therapy* (overuse injuries) and clinical literature.

The differential picture



Radial tunnel syndrome

Posterior-interosseous / radial-nerve entrapment
— pain slightly distal to the epicondyle.



Cervical referral

Neck pathology referring to the lateral elbow and forearm.



Joint & other tendinopathy

Elbow joint pathology, or medial (flexor) epicondylitis on the other side.

Two problems, one plan

Massage works on both layers of this condition — the over-tense muscles and the degenerated tendon itself — once the radial nerve has been ruled out.



Reduce hypertonicity

The primary goal — ease the over-tense extensor muscles that pull on the tendon.



Stimulate collagen repair

Deep friction stimulates fibroblast activity to help heal the damaged tendon.



Release trigger points

Neutralise the concurrent extensor trigger points and address the kinetic chain.

Source: *Treatment focus consistent with Rattray & Ludwig (2000), Clinical Massage Therapy (overuse injuries).*

Cautions & contraindications



Before you treat

- Clarify the diagnosis — rule out radial-nerve compression first.
- Grade severity; for severe cases, defer intense active-engagement work.
- Never work into sharp or radiating (nerve-type) pain.



Refer when

- Symptoms suggest a nerve pathology rather than the tendon.
- Pain is unexplained, worsening, or fails to improve over a fair trial.
- Red flags or trauma are present.

Source: *Scope consistent with CMTCA and Rattray & Ludwig (2000), Clinical Massage Therapy (overuse injuries).*



03

SECTION THREE

Treatment Planning

Healing a degenerated tendon means removing the load that broke it and rebuilding the tissue that failed. The plan is conservative, patient, and built around graded loading.

TREATMENT GOALS

Repair the tendon, reduce the load

The primary goal is to repair the damaged collagen and restore the tendon to a healthy, functioning state — which depends on removing as many of the stress factors as possible.



Repair the collagen

Restore the degenerated tendon toward healthy, organised tissue.



Reduce hypertonicity

Ease the extensor muscles whose tension keeps pulling on the tendon.



Remove the stressors

Reduce or eliminate the loads and habits that caused the damage.

Source: *Treatment goals consistent with Rattray & Ludwig (2000), Clinical Massage Therapy (overuse injuries).*

Relative rest & ice

Conservative care leads. Rest does not mean total inactivity — just a reduction in the activities that aggravate the tendon, paired with sensible use of cold.



Relative rest

Reduce the offending activities; rest is relative, not complete inactivity.



Ice for pain

Cold helps — not as an anti-inflammatory (it isn't inflammatory), but for pain relief.



Modify activity

Change the loads, tools and ergonomics that drove the overload.

Heal through controlled load

Rehabilitation heals the tissue through revascularisation and collagen repair — building strength and endurance across the whole kinetic chain of the neck, shoulder, arm and elbow.



Train the chain

Strengthen the neck, shoulder, arm and elbow muscles involved in arm use.



But not too early

Strength work on still-damaged fibres can aggravate the problem — timing matters.



Condition the tendon

Once ready, loading makes the tendon more resistant to fatigue injury.

Where they fit — and their limits

Medication and surgery have a place, but with real caveats — several common treatments offer pain relief without truly aiding healing.



Anti-inflammatories

NSAIDs and corticosteroid injection relieve pain — but their contribution to healing is questionable, and can be detrimental.



Surgery (rare)

If conservative care fails, pathologic tissue may be removed; protect the surrounding structures.



Newer & experimental

Arthroscopic and laser techniques show promise but need more research.

Eccentric loading

Of all the rehabilitation tools, progressive loading — especially eccentric loading of the wrist extensors — is the most important driver of tendon healing, and the heart of the home programme.

A degenerated tendon heals by being re-loaded, gradually. *Graded eccentric work — with resistance tubing or a resistance bar — conditions the collagen to remodel and resist re-injury.*

A slow-healing condition

Set expectations early. Tendinosis heals slowly, and results come from consistent effort over weeks to months — in the clinic and, above all, at home.



Slow by nature

Tendinosis is a slow-healing condition — there is no quick fix.



Consistency wins

Encourage patient, consistent effort both in clinic and at home.



Clinic + home

Combine regular treatment with a daily home stretching and loading programme.



SECTION FOUR

Massage Protocol

The hands-on work moves in a clear arc: relax the over-tense extensors, broaden and lengthen the muscle, then friction the tendon to drive repair — always paired with stretching and loading.

Where soft-tissue work begins

Rest from offending activities remains essential, and because excessive extensor hypertonicity is a primary problem, reducing that tension is the first goal of the hands-on work.



Rest underpins it

Reducing the aggravating load is a crucial part of every plan.



Relax first

Begin with compressive effleurage and general sweeping cross-fibre to reduce tension.



Then go deeper

Once the muscle relaxes, progress to broadening, lengthening and stripping.

Relax → broaden → remodel

The protocol follows a logical progression from superficial relaxation to deep tendon work — and the later, more intense techniques wait until the tendon is less sensitive.



Relax

Effleurage and sweeping cross-fibre to reduce extensor tension.



Broaden & lengthen

Deep broadening and lengthening; longitudinal stripping for trigger points.



Remodel

Active engagement and deep friction to the tendon — later stages.

Cross-fibre & compression broadening



A · Sweeping cross-fibre

- Reduces overall tension in the wrist-extensor muscles.
- Performed with effleurage during the initial treatment.
- Work the whole forearm, from wrist to elbow.



B · Compression broadening

- A deeper cross-fibre stroke once the muscle has relaxed.
- Use the thenar eminence over the extensor group.
- Helps the fibres spread as they contract.

Source: *Cross-fibre & broadening technique per Rattray & Ludwig (2000), Clinical Massage Therapy (overuse injuries), Ch. 4.*

Deep longitudinal stripping

Deep longitudinal stripping reduces tension, encourages pliability, and is particularly good for finding and neutralising the extensor trigger points.



Strip the group

Use fingers or thumb from the wrist to the extensor attachment at the lateral epicondyle.



Find the trigger points

Stripping identifies and neutralises myofascial trigger points along the way.



Cover it all

Continue in successive strips until the whole muscle group is treated.

Active engagement — later stages

As the tendon becomes less sensitive, active engagement adds movement to pressure. The client moves the wrist while you work, and resistance can be added to recruit more muscle.



D · Shortening (concentric)

- Client moves the wrist through flexion and extension, slowly.
- Apply a compression-broadening stroke during wrist extension.
- Add hand weights or a resistance band to recruit more effort.



E · Lengthening (eccentric)

- Apply a distal-to-proximal stripping stroke during each wrist flexion.
- Cover ~3–4 inches per stroke; resume where you stopped.
- Greater pliability — the eccentric work mirrors the rehab loading.

Deep friction to the common extensor tendons

This is the defining technique for the tendon itself. Deep friction stimulates fibroblast proliferation to drive collagen repair — the classic Cyriax approach to tennis elbow.



Stimulate repair

Friction stimulates fibroblast activity to enhance collagen repair in the tendon.



Keep it on stretch

Work with the wrist flexed — keeping the tendon on stretch improves the technique.



Transverse or longitudinal

Use fingertips or thumb across or along the common extensor tendons.

Source: *Deep transverse friction — the classic Cyriax manual therapy for tennis elbow (Cyriax, Textbook of Orthopaedic Medicine).*

Stretching & hydrotherapy

Stretching the wrist extensors is an essential part of treatment, in clinic and at home — and cold can bracket the friction work to keep it comfortable.



Stretch the extensors

Stretch during and after soft-tissue work; the client continues it at home.



Cryotherapy & friction

Cold is sometimes used before and after the friction treatment to reduce discomfort.



Pair with movement

Always pair thermal and friction work with movement, within tolerance.

What the client does daily

Because the tendon heals slowly and through load, the home programme carries the result. Make it specific, progressive and pain-monitored.



Stretch & load

Regular extensor stretching and progressive eccentric loading as prescribed.



Ergonomics & pacing

Adjust the mouse, tools and technique; pace activity to avoid overload.



Patience

Reinforce that consistency over weeks — not intensity — is what heals the tendon.

Treat, measure, refer

Match technique to the tissue's state at every visit, and keep the radial-nerve differential in mind throughout the course of care.



Re-grade each visit

Re-assess severity and irritability before choosing the day's techniques.



Advance with tolerance

Add active engagement and friction only as the tendon settles.



Refer when needed

Refer if a nerve pathology is suspected, or if there is no progress over a fair trial.

Lateral epicondylitis — remember



Tendinosis, not tendinitis

Collagen degeneration, not inflammation — think remodeling and loading.



The ECRB is the culprit

The extensor carpi radialis brevis, with its small, concentrated attachment.



Rule out the radial nerve

Nerve compression mimics it — and deep friction over a nerve makes it worse.



Relax, then remodel

Reduce extensor hypertonicity first, then friction the tendon to drive repair.



Loading is the cure

Eccentric loading and stretching at home heal a slow-healing tendon.



Be patient

Set expectations — consistent effort over weeks, not a quick fix.

Sources for this lecture

Rattray, F. & Ludwig, L. (2000). Clinical Massage Therapy: Understanding, Assessing and Treating Over 70 Conditions. Toronto: Talus Inc. — overuse injuries and tendinopathy; cross-fibre frictions, fascial and active-engagement techniques (Ch. 4). Note: Rattray uses “tendinitis”; current usage is “tendinosis” for the chronic, degenerative tendon.

Cyriax, J. Textbook of Orthopaedic Medicine. — deep transverse friction (with Mill’s manipulation) is the classic manual therapy for lateral epicondylitis, applied across the common extensor tendon.

CMTCA. Competency standards — scope of practice, orthopaedic assessment, the radial-nerve differential and referral.

RU-RMT 20 — Lecture 11 (Lateral Epicondylitis). Course lecture notes: functional anatomy, pathophysiology, assessment, the soft-tissue techniques (A–F) and rehabilitation considerations.



COMPLETING THE TENDINOPATHY PAIR

The same story, joint by joint

Bicipital tendinosis at the shoulder, lateral epicondylitis at the elbow — one degenerative-tendon model, one toolkit of friction, loading and patience. Carry it forward to the next overuse condition: tendinosis, not tendinitis; remodel, don't just rest.