79a Orthopedic Massage: Introduction - Rotator Cuff and Carpal Tunnel

79a Orthopedic Massage: Introduction - Rotator Cuff and Carpal Tunnel

Class Outline

5 minutes	Attendance, Breath of Arrival, and Reminders
10 minutes	Lecture:
25 minutes	Lecture:
15 minutes	Active study skills:
60 minutes	Total

79a Orthopedic Massage: Introduction - Rotator Cuff and Carpal Tunnel

Class Reminders

Early Warning:

- 85a Orthopedic Massage: Outside Massages – Begin these now!

Quizzes:

- 84a Kinesiology Quiz (***see syllabus for complete list***: pec major and minor, coracobrachialis, biceps, SCM, scalenes, rotator cuff, flex. Dig. Super., ext. dig., flex. Pollicis longus, flex dig. profundis)
  – 50 questions in 40 minutes

Spot Checks:

- 81b Orthopedic Massage: Sport Check – Rotator Cuff and Carpal Tunnel
- 84b Orthopedic Massage: Spot Check – Thoracic Outlet

Assignments:

- 85a Orthopedic Massage: Outside Massages (2 due at the start of class)

Preparation for upcoming classes:

- 79b Orthopedic Massage: Technique Demo and Practice – Rotator Cuff and Carpal Tunnel -Packet J: 85-94
- 80a MBLEx PREP
- 80b Orthopedic Massage: Technique Review and Practice – Rotator Cuff and Carpal Tunnel
- 81b Orthopedic Massage: Spot Check – Rotator Cuff and Carpal Tunnel
- 81a MBLEx PREP

Classroom Rules

Punctuality - everybody's time is precious

- Be ready to learn at the start of class; we'll have you out of here on time
- Tardiness: arriving late, returning late after breaks, leaving during class, leaving early

The following are not allowed:

- Bare feet
- Side talking
- Lying down
- Inappropriate clothing
- Food or drink except water
- Phones that are visible in the classroom, bathrooms, or internship

You will receive one verbal warning, then you'll have to leave the room.

Flexor Pollicis Longus, Trail Guide Page 152

A

Flex the thumb
(interphalangeal joint)

Flex the thumb
(metacarpophalangeal and
carpometacarpal joints)

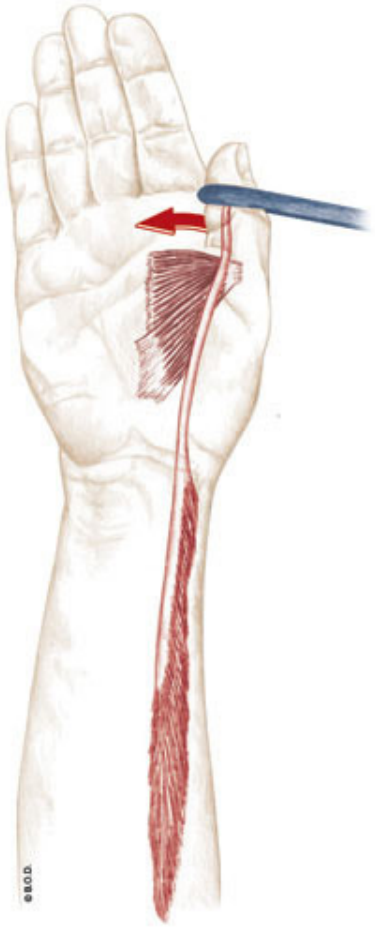
O

Anterior surface of the radius

Interosseous membrane

I

Base of the distal phalanx of the thumb



Anterior View

Flexor Pollicis Longus, Trail Guide Page 152

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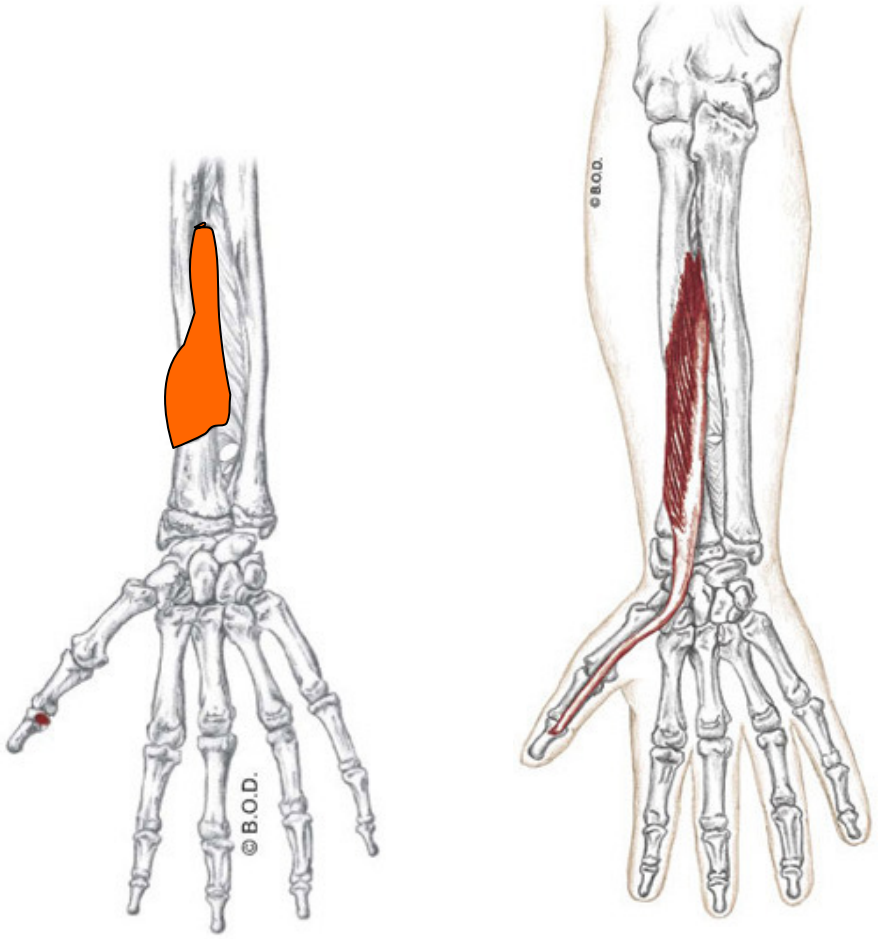

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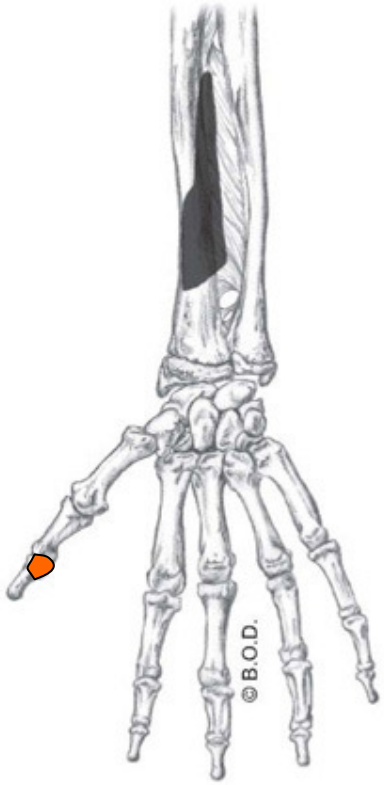

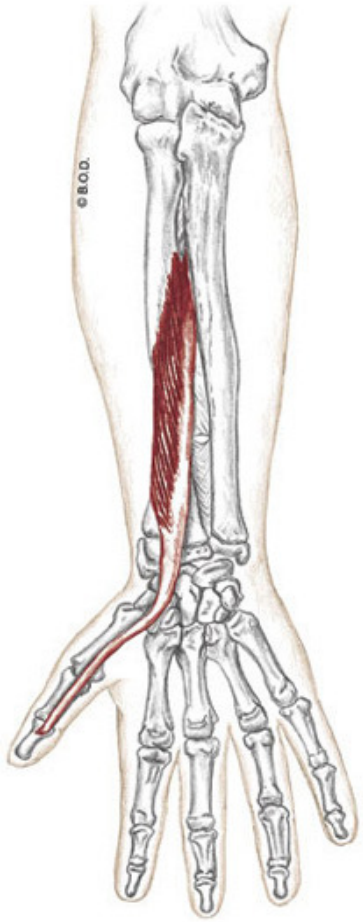

Anterior View

Flexor Digitorum Profundus, Trail Guide Page 142

A Flex the 2nd through 5th fingers (metacarpophalangeal and distal interphalangeal joints)

Assist to flex the wrist (radiocarpal joint)

O Anterior surface of the proximal 3/4 of the ulna

Medial surface of the proximal 3/4 of the ulna

I Base of the distal phalanges of 2nd through 5th fingers on the palmar surface

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Flexor Digitorum Profundus, Trail Guide Page 142

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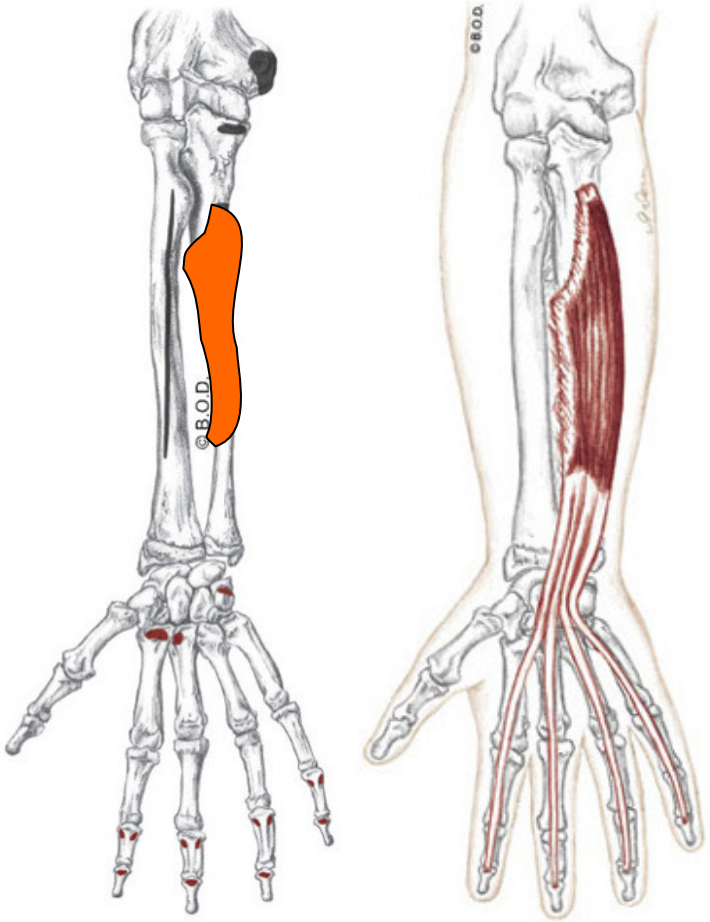

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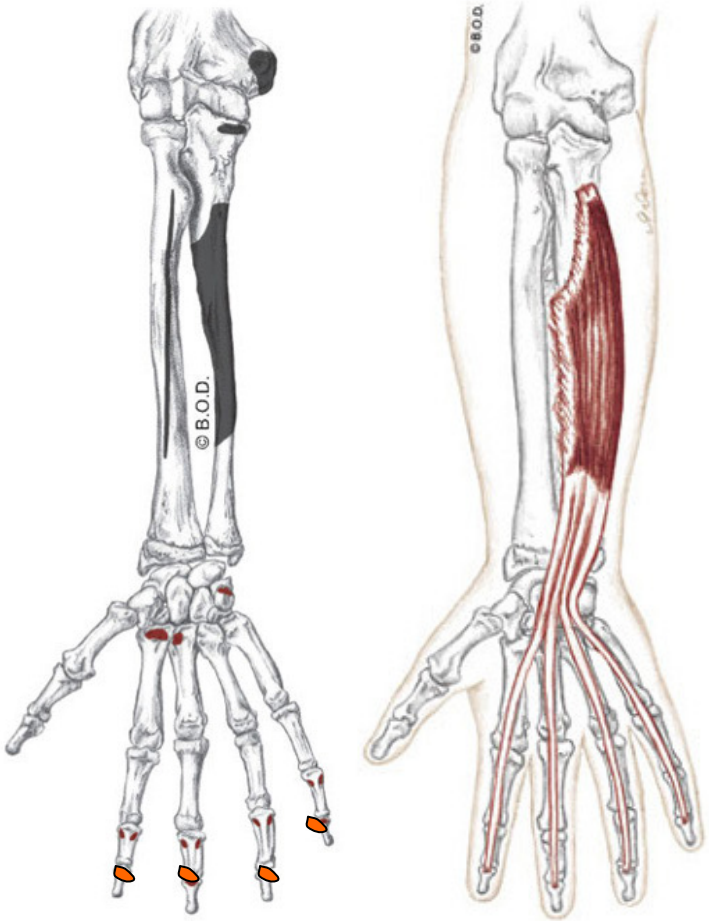


Anterior View

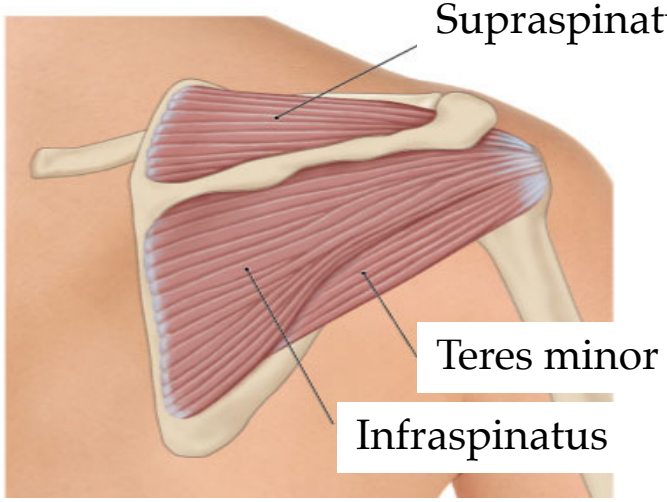
79a Orthopedic Massage: Introduction - Rotator Cuff and Carpal Tunnel

J - 79

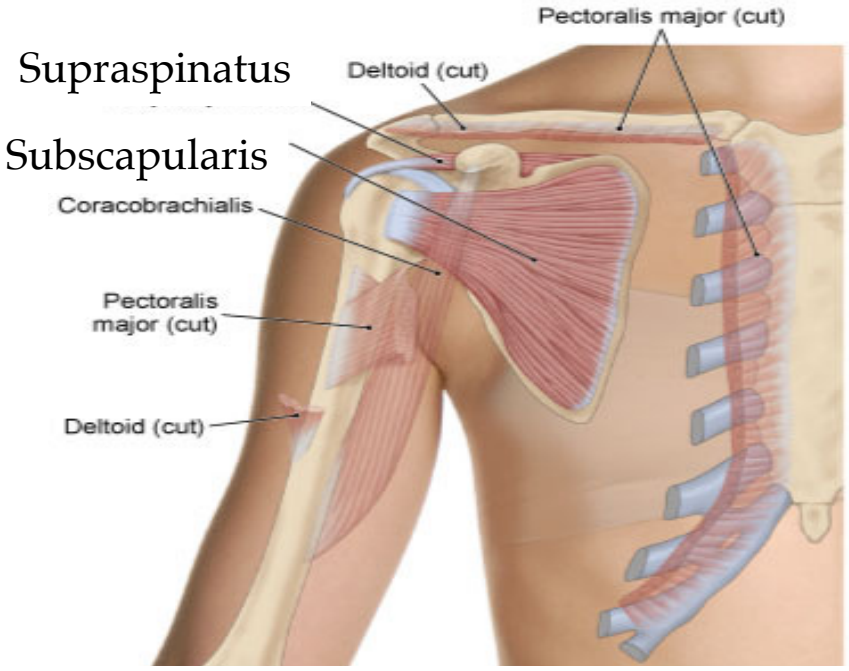
Rotator Cuff Strain

Rotator Cuff Strain

Rotator cuff strain (AKA: RC strain) Strain of one or more of the following muscles: supraspinatus, infraspinatus, teres minor, and subscapularis.



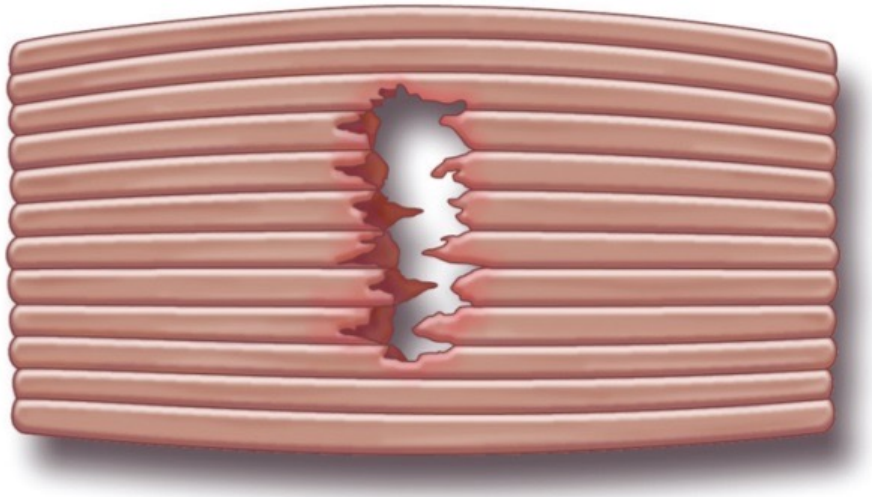
Posterior View



Anterior View

Rotator Cuff Strain

- **Strain** Tearing of a muscle and/or tendon. Muscles that cross more than one joint are most susceptible to strain. Caused by excessive tensile stress usually during eccentric contraction.



Onset of Rotator Cuff Strain

Onset

- Chronic onset: progressive degeneration. Partial-thickness tears are more likely.
- Acute onset: high force loads. Full-thickness tears are more likely.

How many muscles can be involved in a Rotator Cuff Strain?

- Usually just one or two
- Rarely are all four are involved
- Subscapularis is rarely involved because there are several larger muscles that perform the same actions and provide support

Rotator Cuff Strain Assessment

- Supraspinatus: pain during resisted glenohumeral abduction
- Infraspinatus/teres minor: pain during resisted glenohumeral lateral rotation
- Subscapularis: pain during resisted glenohumeral medial rotation

Rotator Cuff Strain
Traditional Treatments

Physical therapy (stretching, strengthening, and ultrasound)

- Variable effectiveness

Corticosteroid injection

- Variable effectiveness

Surgery

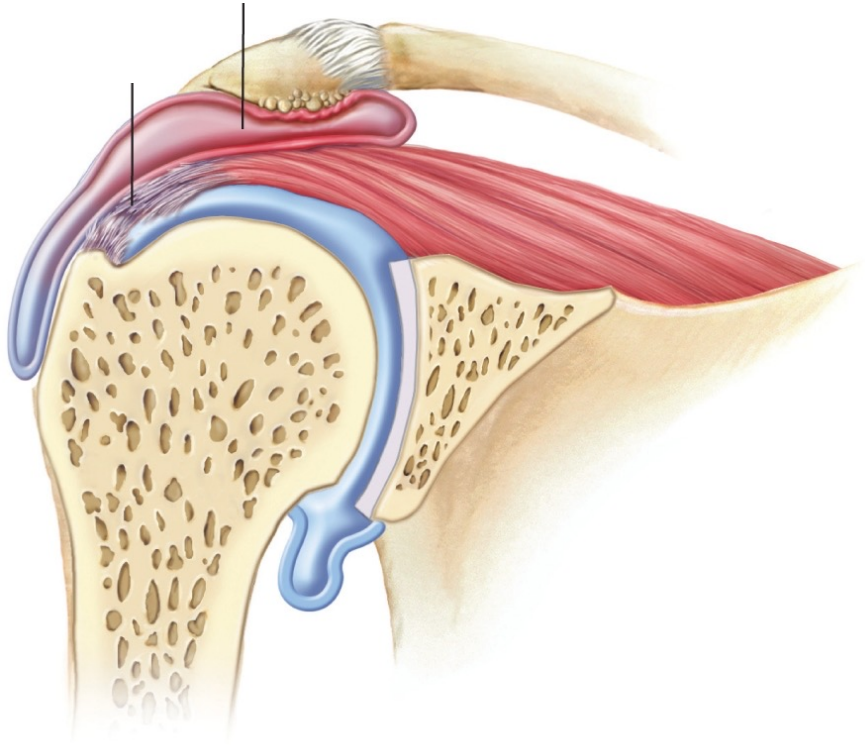
- Most common is subacromial decompression for supraspinatus

Cessation or rest from offending activities

- Effective, especially combined with orthopedic massage

Etiology: Supraspinatus Strain

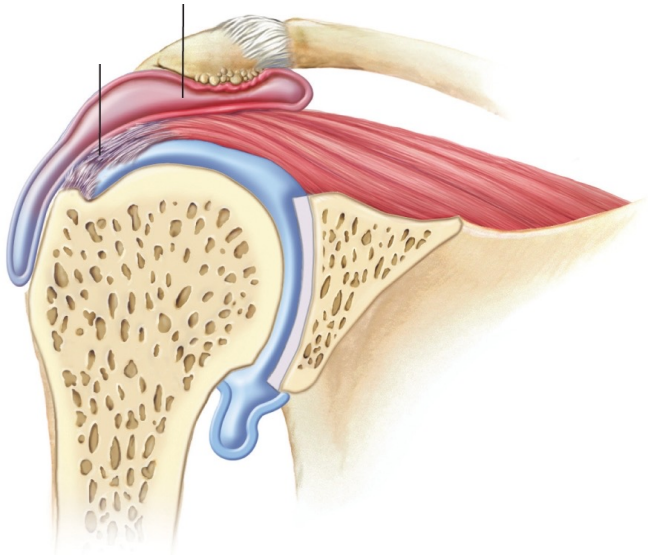
Subacromial compression Compression of the supraspinatus between the underside of the acromion process and the superior surface of the head of the humerus.



Etiology: Supraspinatus Strain

<u>Consequences of a Supraspinatus Strain:</u>

- Slower healing time
- **Tendinosis** Degeneration and break down of collagen in the tendon fibers. Results in chronic pain and significant loss of tensile strength in tendon.



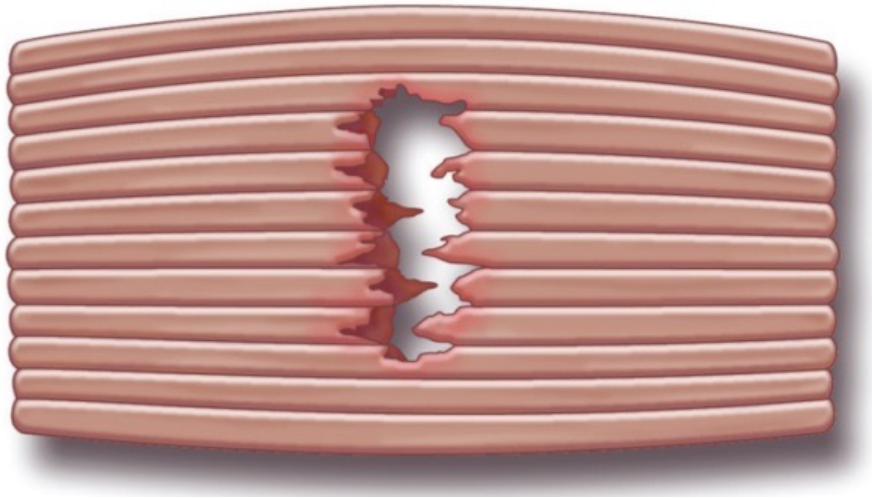
Etiology: Supraspinatus Strain

Consequences of a Supraspinatus Strain:

- **Strain** Tearing of a muscle and/or tendon.
- **Calcific tendinitis** Calcium deposits in the tendon. Tendinosis may allow this to occur. Most common in supraspinatus.

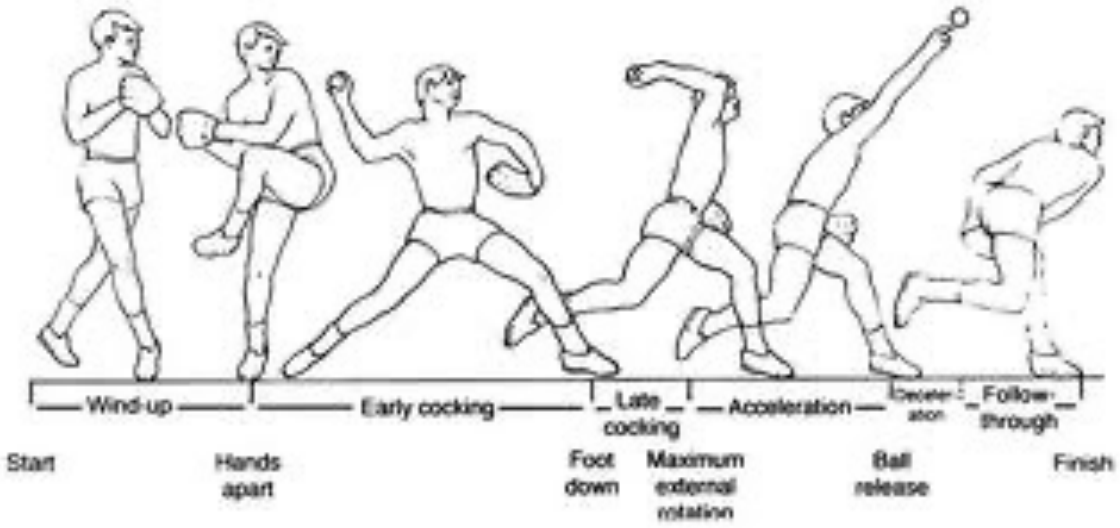
Etiology: Infraspinatus and Teres Minor Strain

- Overuse and overloading
- **Strain** Tearing of a muscle and/or tendon.



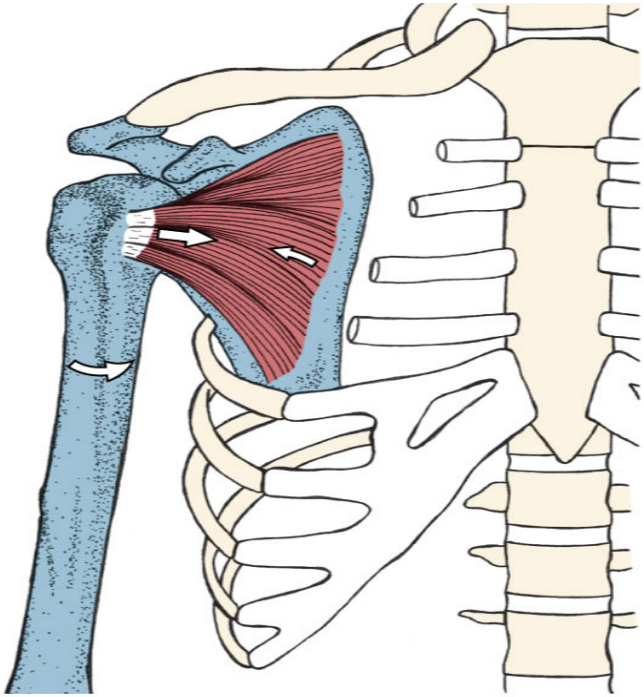
Etiology: Infraspinatus and Teres Minor Strain

- The primary injuries resulting from the throwing motion occur to the supraspinatus
- During throwing motions involving medial rotation of the glenohumeral joint, the infraspinatus and teres minor eccentrically contract to decelerate the arm after release of the ball.



Etiology: Subscapularis Strain

- Often accompanied by glenohumeral dislocation



Anterior View

Considerations and Cautions for Rotator Cuff Strain

- First assess which muscle or muscles are torn. Accurate assessment is essential to determine the severity. Avoid vigorous deep friction on a recent or severe injury.

- Advise the client to cease or rest from any offending activities.

Considerations and Cautions for Rotator Cuff Strain

- Treat all muscles of the shoulder area to regain biomechanical balance.
- Supraspinatus is more difficult to access, but can be addressed.
- Subscapularis is rarely strained and mostly inaccessible. The distal tendon is accessible and common site of strain.

Considerations and Cautions for Rotator Cuff Strain

- Stretching, joint mobilization, and activity modifications can reduce stress on damaged tissues allowing the soft tissue techniques to succeed.

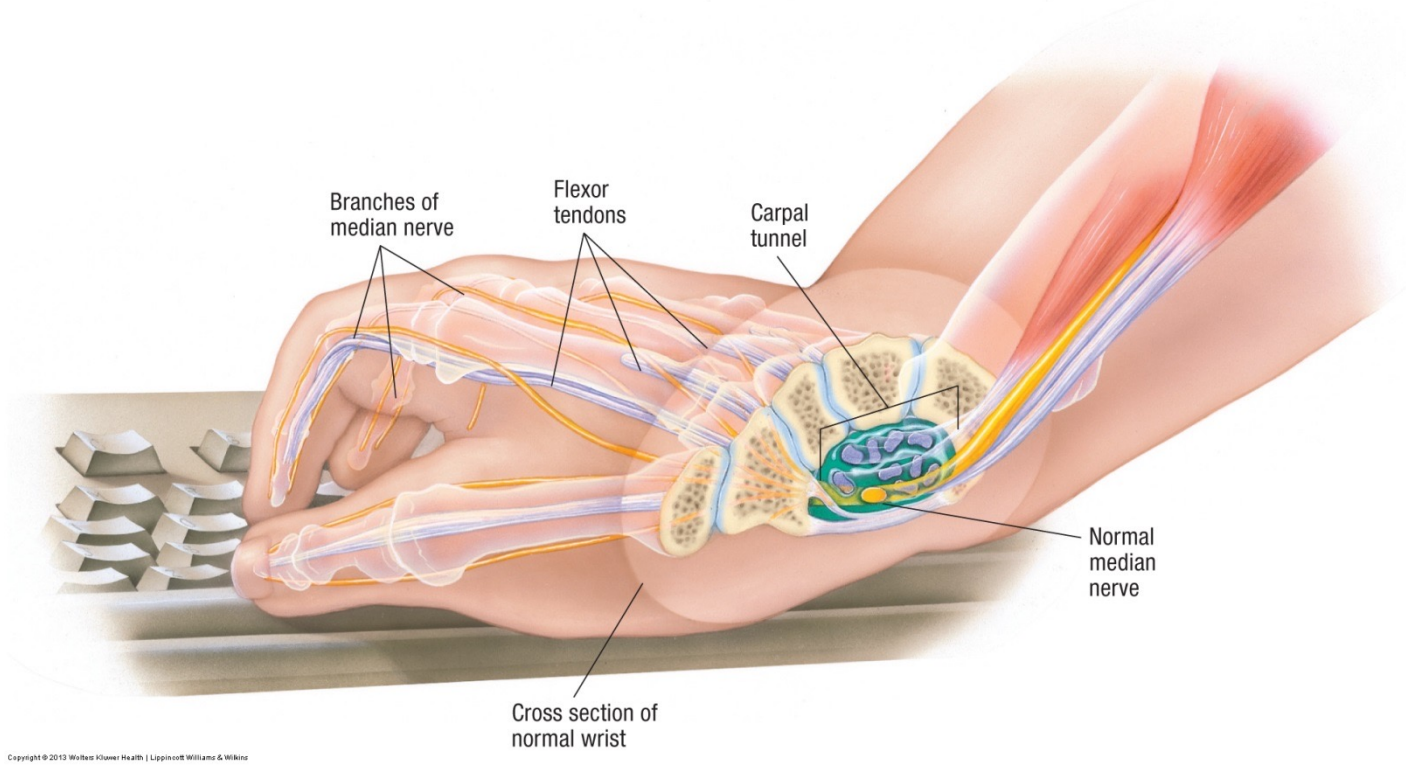
Considerations and Cautions for Rotator Cuff Strain

- Topical thermotherapy is not effective for the deeper supraspinatus and subscapularis, but can be effective for infraspinatus and teres minor.

- If the client is receiving other treatment methods such as physical therapy, injections, or surgery, communicate with the other practitioners to ensure that the treatment plans are all compatible.

Carpal Tunnel Syndrome

Structures that form the Carpal Tunnel



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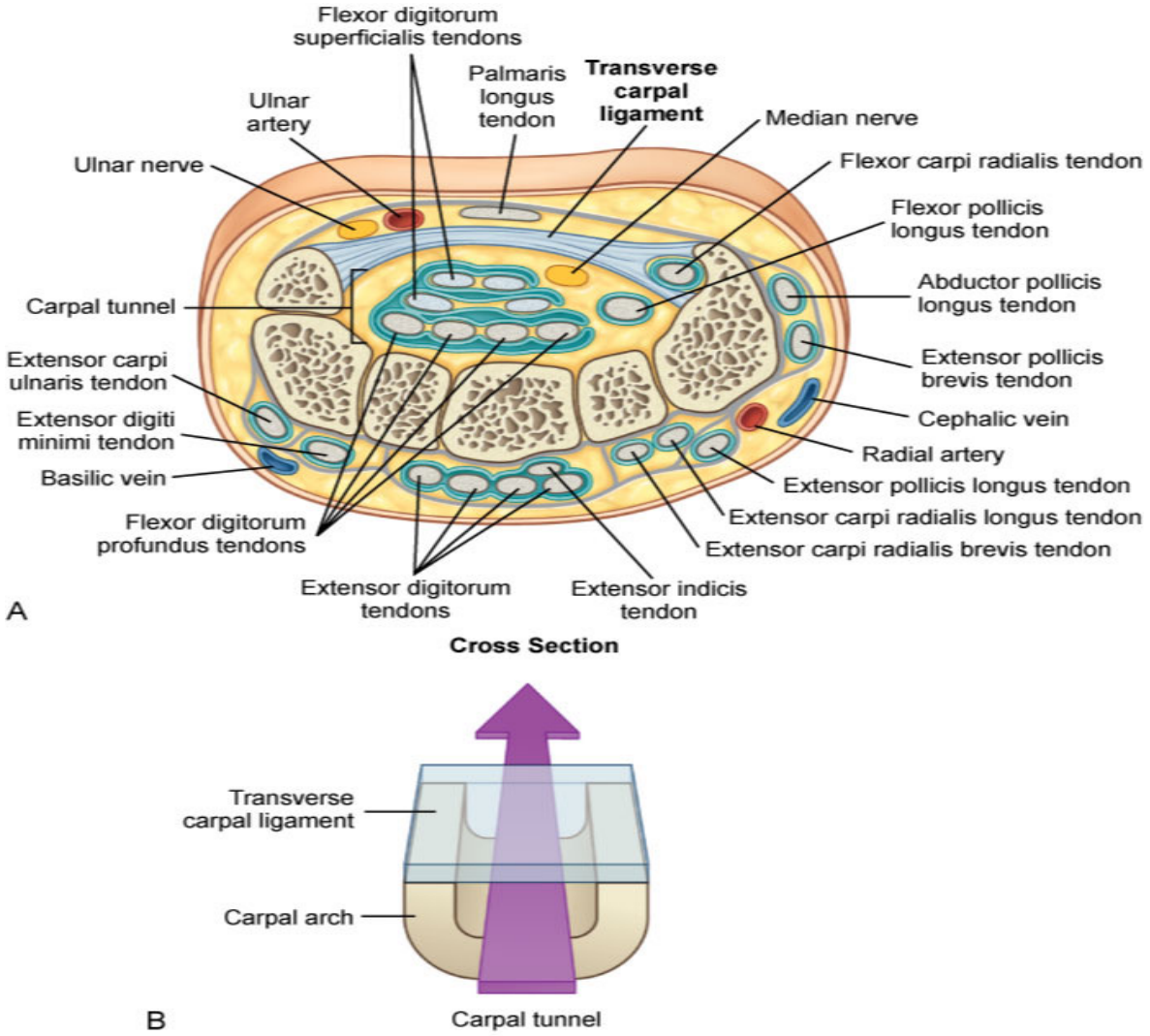
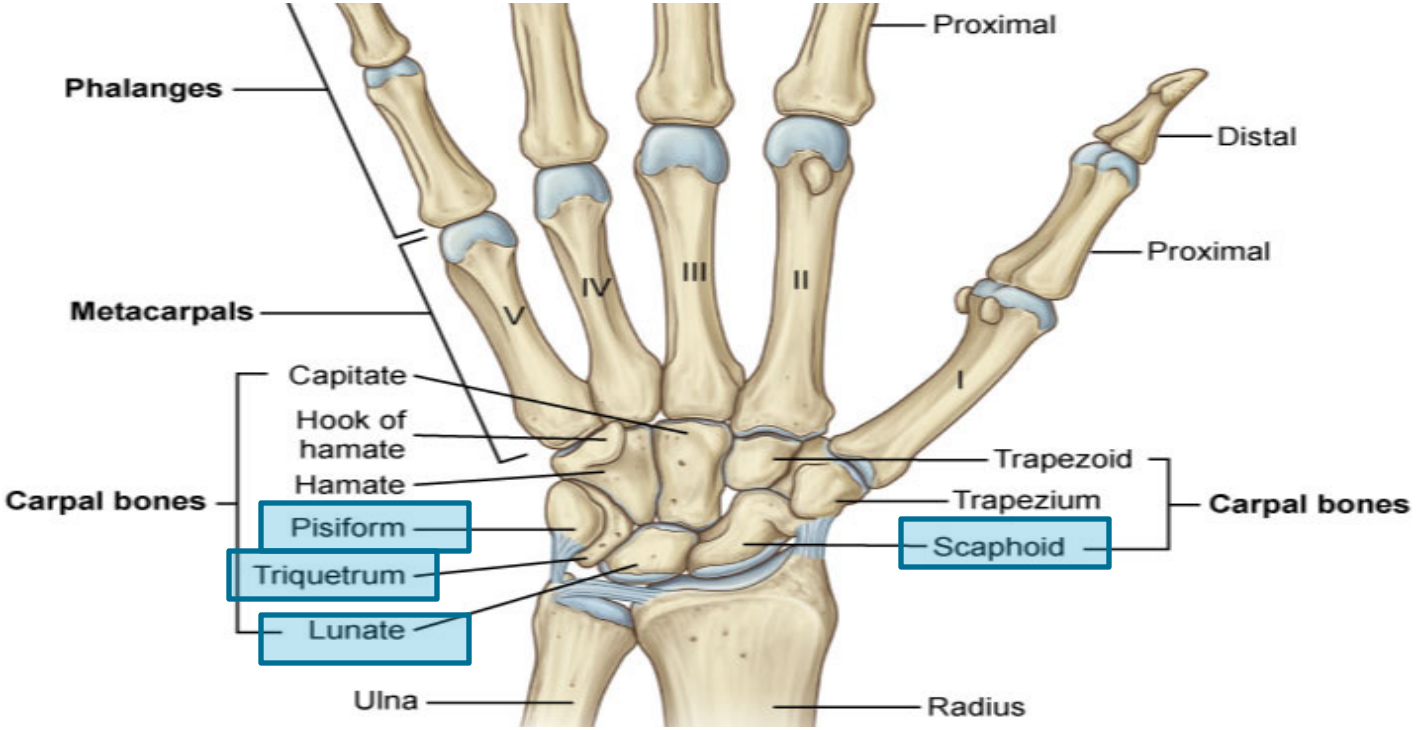


Structures that form the Carpal Tunnel

Proximal row of carpals from lateral to medial:

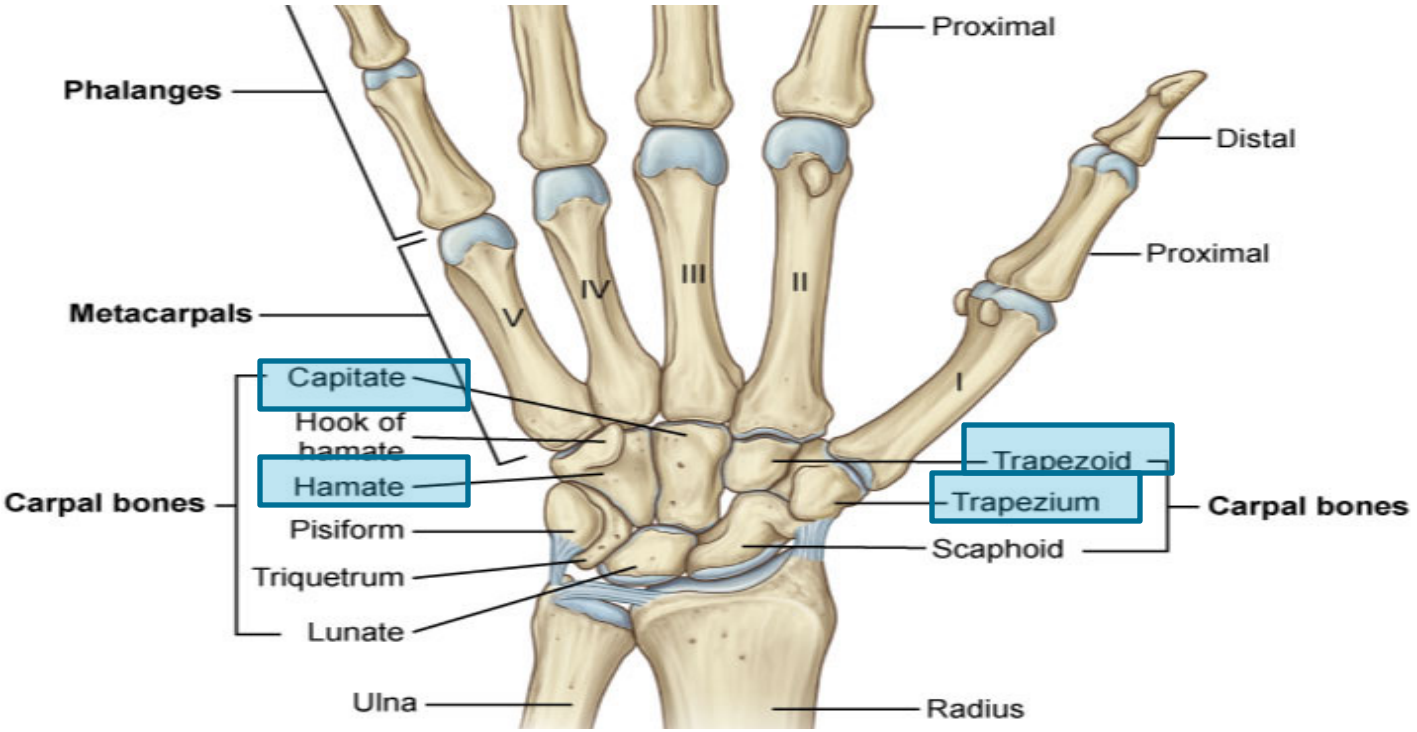
- Scaphoid, lunate, triquetrum, pisiform ("**S**teve **L**eft **T**he **P**arty")



Structures that form the Carpal Tunnel

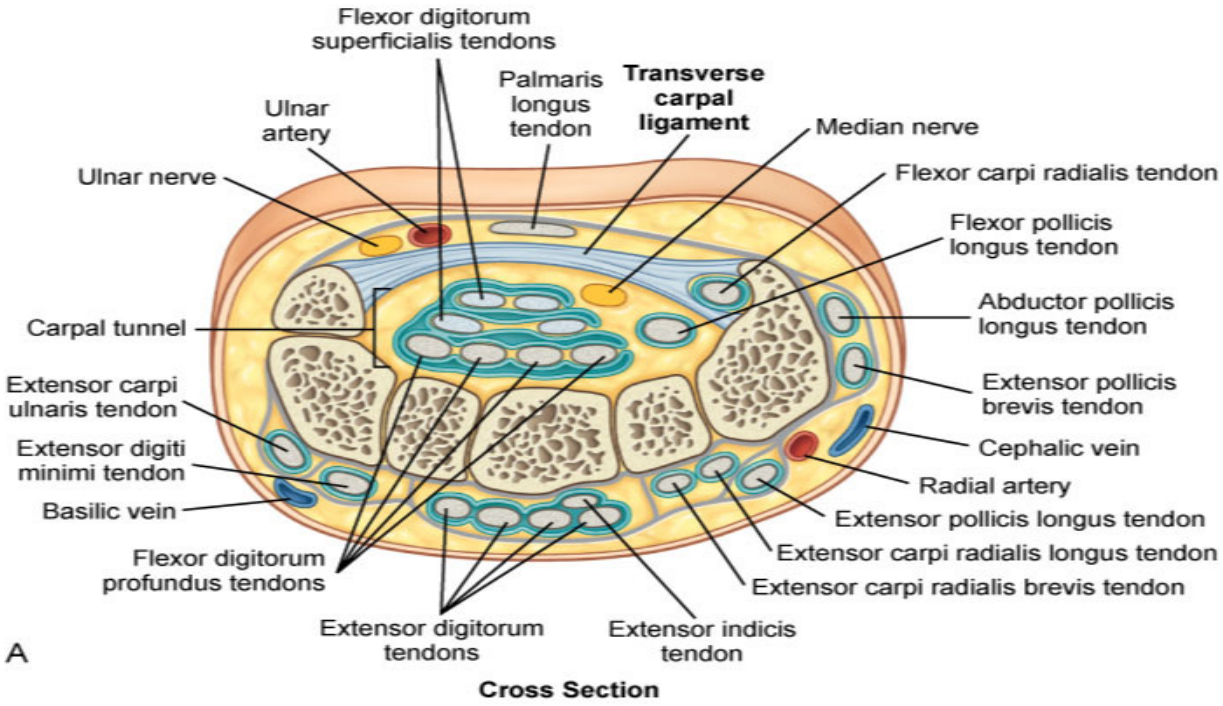
Distal row of carpals from lateral to medial:

- Trapezium, trapezoid, capitate, hamate ("**T**o **T**ake **C**athy **H**ome")



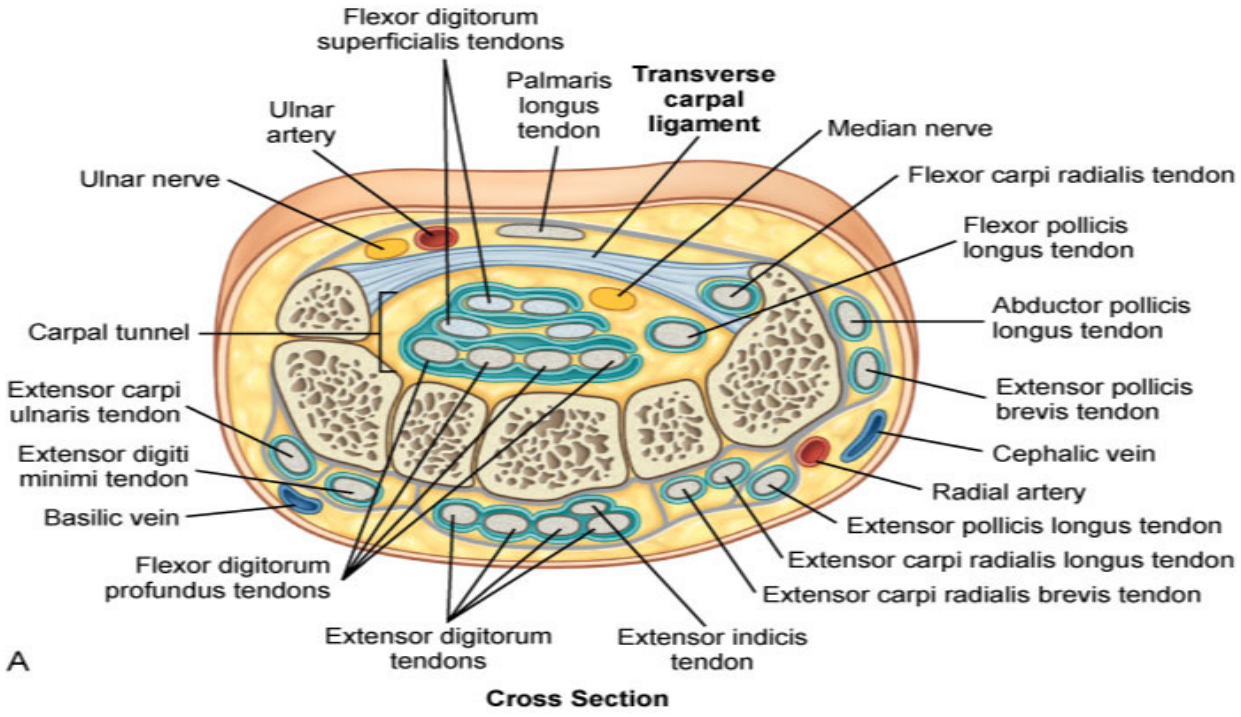
Structures that form the Carpal Tunnel

Transverse carpal ligament (AKA: TCL, wrist flexor retinaculum)



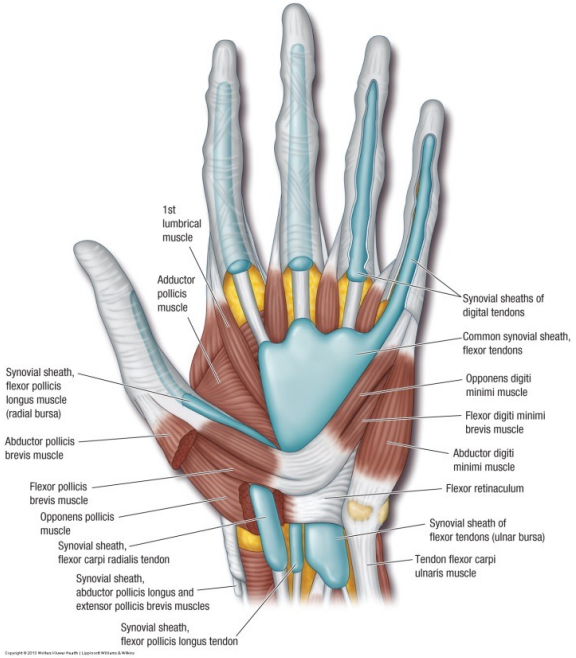
Ten structures that pass through the Carpal Tunnel

- Flexor pollicis longus (1 tendon)
- Flexor digitorum superficialis (4 tendons)
- Flexor digitorum profundus (4 tendons)
- Median nerve



Carpal Tunnel Syndrome
Etiology

- Overuse of extrinsic finger and wrist flexors leading to tenosynovitis
- Adhesion or inflammation between a tendon and its synovial membrane increases the size of the tendon sheath causing compression of the median nerve

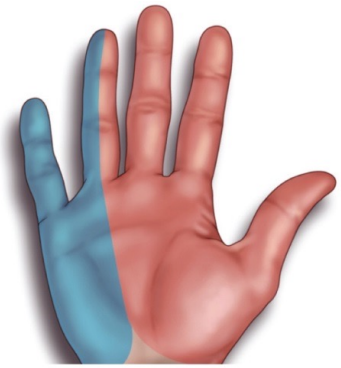


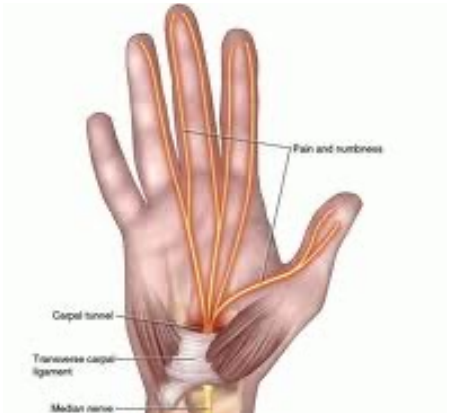
Occupations at risk for Carpal Tunnel Syndrome

- Data entry
- Factory worker
- Packaging worker
- Janitorial and cleaning jobs

Carpal Tunnel Syndrome Symptoms

- Numbness and pain in the skin of the first three and a half fingers
- **Paresthesia** Sensation of pins and needles.
- Clumsiness (when severe)
- Loss of dexterity (when severe)
- Weakening of grip strength (when severe)





Carpal Tunnel Syndrome
Why are symptoms exacerbated at night?

- Wrist flexion while sleeping increases carpal tunnel compression

Carpal Tunnel Syndrome
Traditional Treatments

Ergonomic intervention

- Effective: wrist braces and supports, altered work schedules, variety of work activities, and tool design

Reduction of offending activities

- Effective

Carpal Tunnel Syndrome
Traditional Treatments

Pharmaceuticals (corticosteroid injection, oral steroids, NSAIDs, diuretics)

- Variable effectiveness

Wrist splints at night

- Effective

Surgery

- Variable effectiveness: incision on the flexor retinaculum to relieve compression on the median nerve

Considerations and Cautions for Carpal Tunnel Syndrome

- Treat the hypertonicity in wrist and hand flexors, and avoid any aggravating pressure to the median nerve.
- Stretch forearm flexor muscles to reduce hypertonicity and overuse irritation.
- Treat the entire upper extremity to reduce tension that may contribute to biomechanical dysfunction.

Considerations and Cautions for Carpal Tunnel Syndrome

- Nerve damage is slow to heal. Immediate or rapid relief can occur, but complete resolution of the condition can be slow and gradual.

- If the condition is severe or symptoms are magnified, adjust the pressure, duration, and intensity of the treatment to avoid exacerbating the condition.

- Use caution with any technique that aggravates symptoms.

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