# ELBOW/FOREARM REGION

WRIST & HAND

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- Chapter 2 – Musculoskeletal anatomy review
- Chapter 3 – Musculoskeletal pathologies of the elbow/forearm & wrist region
- Chapter 4 – Musculoskeletal assessment of the elbow/forearm & wrist region


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## CONTENTS


- Chapter 5 – Musculoskeletal treatment of the elbow/forearm & wrist region
- Chapter 6 – Corrective exercises for specific musculoskeletal pathologies


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## Introduction

- The elbow joint & forearm region is a area that is prone to overuse injuries, traction injuries, soft tissue compression injuries/syndromes, adverse neural tension disorders & tendinopathy's
- The lateral & medial bony aspects of the humerus are frequently /constantly under high loads of tension

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## Introduction

- The common extensor tendon & common flexor tendon are also under high loads of traction due to the attachment of the soft tissue
- The muscles of the forearm are subjected to constant shortening & lengthening forces, these repetitive forces are also a contributing factor to tendon pathologies & bony pathologies

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## Introduction

- Overuse of the musculoskeletal complex can lead to latent & active trigger point activity resulting in pain & discomfort to the elbow & forearm region
- Remember that these trigger points can refer to the epicondyles of the humerus as well as down the forearm into the hand

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## Introduction

- A though history of the client focusing on his/ hers occupation, general activities, sports, general resistance training to specific strength & conditioning training, & musical instruments
- From here you should have multiple DD's in mind.
- This webinar will focus on the Anterior lateral Elbow region

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## Musculoskeletal Anatomy Review

**CHAPTER 2**

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## Musculoskeletal Anatomy Review

(Netter, FH, 2006)


**Humeroulnar Joint**
- ST, Tendon, Nerve

**Humeroradial Joint**
- ST, Tendon, Nerve

**Superior radioulnar joint**
- ST, Tendon, Nerve

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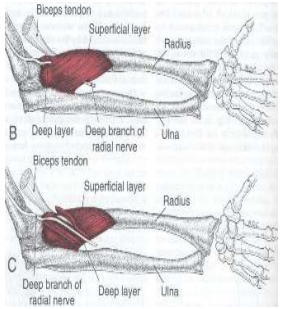
# Musculoskeletal Anatomy Review

(Travel, JG, Simons, DG, 1999)




- Tricep MT Complex
- Bicep MT Complex
- Radial Nerve
- Supinator Muscle



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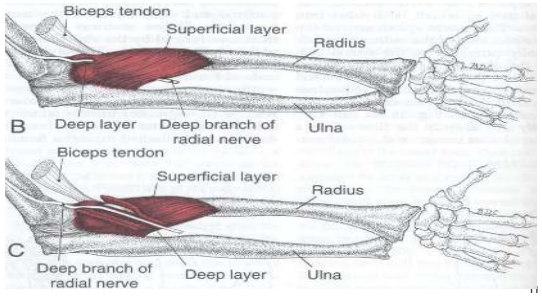
# Musculoskeletal Anatomy Review

(Travel, JG, Simons, DG, 1999)

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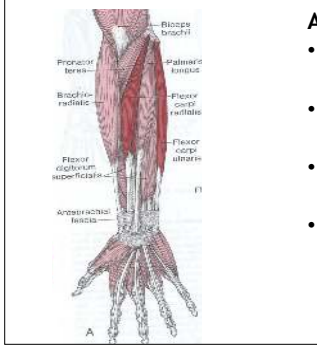
# Musculoskeletal Anatomy Review

(Travel, JG, Simons, DG, 1999)




**Anterior View**

- ST (4 layers)
- Fascia
- Nerve
- Common Flex/Ext Tendon



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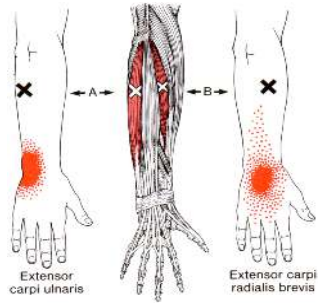
# Musculoskeletal Anatomy Review

(Travel, JG, Simons, DG, 1999)

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# Musculoskeletal Anatomy Review

(Travel, JG, Simons, DG, 1999)

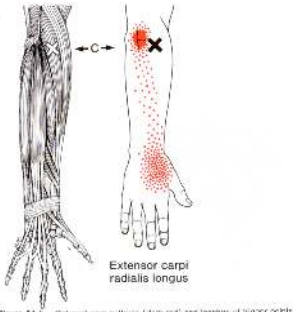


Figure 34.1 Referred pain patterns (dark red) and location of trigger points (red) in the three primary hand extensor muscles (medium red) on the right side. A, extensor carpi ulnaris. B, extensor carpi radialis brevis. C, extensor carpi radialis longus.

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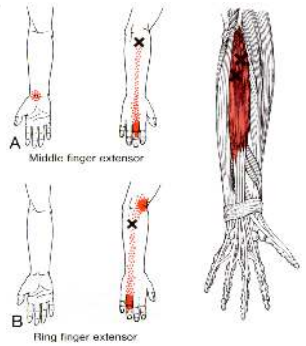
# Musculoskeletal Anatomy Review

(Travel, JG, Simons, DG, 1999)

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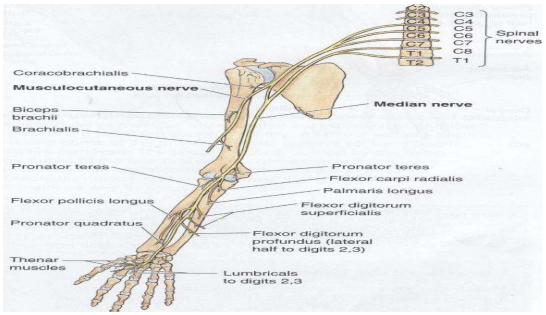
## Musculoskeletal Anatomy Review

(Moore, KL, Dalley II, AF, 1999)

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## Musculoskeletal Pathologies

**Chapter 3**

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## Musculoskeletal Pathologies

- **Lateral** Epicondlyitis
- Common Extensor Tendinosis
- Common Extensor Tendinitis

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## Musculoskeletal Pathologies

- Micro tears of the common ext tendon
- Partial tear of the common ext tendon
- Chronic thickening of the common ext tendon

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## Musculoskeletal Pathologies

- LCL Sprain
- Annular Ligament Sprain
- Articulating Capsule/Synovitis
- Radial Nerve Pathology

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## Musculoskeletal Pathologies

- Radial Tunnel Syndrome
- Supinator Compression Syndrome
- Supinator Trigger points

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## Musculoskeletal Pathologies

- **Medial** Epicondylitis
- Common Flexor Tendinosis
- Common Flexor Tendinitis

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## Musculoskeletal Pathologies

- Micro tears of the common flexor tendon
- Partial tear of the common flexor tendon
- Chronic thickening of the common flexor tendon

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## Musculoskeletal Pathologies

- MCL Sprain
- Articulating Capsule/Synovitis
- Ulna Nerve Pathology (crush Syndrome)

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## Musculoskeletal Pathologies

- Flexor Carpi Ulnaris Compression Syndrome
- Flexor Carpi Ulnaris Trigger points
- Pronater Teres Trigger Points

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## Musculoskeletal Pathologies

**Anterior/Medial Elbow Pain**

- Pronater Teres Trigger Points
- Pronater Teres Compression Syndrome
- Flexor Carpi Radialis Compression Syndrome

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## Musculoskeletal Pathologies

- Median Nerve Pathology
- Cubital Tunnel Syndrome
- Compartment Syndrome

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## Musculoskeletal Pathologies

**Posterior Elbow Pain**

- Triceps Muscle Strain
- Tricep Insertional Tendinitis
- Triceps Tendon Partial Thickness Tear

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## Musculoskeletal Pathologies

- Radial Nerve Pathology
- Posterior Elbow Impingement
- Hyper Extension Injuries

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## Musculoskeletal Pathologies

- Bursitis
- DJD

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# Musculoskeletal Assessment

**Chapter 4**





# Musculoskeletal Assessment

1. **A**ROM
   -Muscle Tendon Complex
   - TrP's

2. **P**ROM
   -Joint
   -Ligaments
   -Fascia





# Musculoskeletal Assessment

3. **M**RT (muscle resisted testing)
   - Muscle Strain
   - TrP's

## Musculoskeletal Assessment

4. **Special Tests** – Lateral/Anterior Elbow
- LCL Stress Test
- Cozens Test
- Mills Test

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## Musculoskeletal Assessment

- Supinator Compression Test
- Resisted 1st & 2nd finger extension
- ULTT – Radial Nerve

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## Musculoskeletal Assessment

- PT Compression Test
- ULTT – Median Nerve

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## Musculoskeletal Assessment

5. **Palpate**
- Lateral Epicondyle
- Common Ext Tendinous Osseus Junction
- Common Ext MTJ

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## Musculoskeletal Assessment

- Supinator
- ECRL & ECRB
- Brachii radialis

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## Musculoskeletal Assessment

- EDL
- ECU
- Bicep Tendon Insertion

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## Musculoskeletal Assessment

6. **Wrist Region**
- **A.**ROM
- **P.**ROM
- Bracelet Test (carpals)
- Finkelstein Test (Tenosynovitis)

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## Musculoskeletal Treatment

**Chapter 5**

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## Musculoskeletal Treatment

**Lateral /Dorsal Elbow Pain**
- DNT to the supinator & extensor muscles
- Vacuum Cupping
- PRT to the extensor muscles & Supinator

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## Musculoskeletal Treatment

- Myofascial stripping to the extensor muscles altering the length tension of the ST
- Active myofascial stripping
- PNF extensor muscles

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## Musculoskeletal Treatment

- Mobilisation of the radial nerve
- Mobilisation of the median nerve

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## Musculoskeletal Treatment

**Anterior Elbow Pain**

- DNT to the PT, FCR, FDL, FDP, FCU if required
- Vacuum Cupping
- PRT to the PT, flexor muscles & Supinator

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## Musculoskeletal Treatment

- Myofascial stripping to the flexor muscles altering the length tension of the ST
- Active myofascial stripping
- PNF flexor muscles

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## Musculoskeletal Treatment

- Mobilisation of the median nerve
- Stretching the flexor compartment
- Mobilise the carpals

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## Corrective Exercises

**Chapter 6**

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## Corrective Exercises

1. Common Extensor Tendinosis
- Eccentric loading under tension
- A hand fishing line with a 2kg+ weight is most suitable, focus on eccentric loading
- A 2kg+ dumbbell can also be used, focus on eccentric loading

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## Quiz Questions – T/F

1. The elbow region can be prone to traction injuries
2. The elbow region can be prone to compression injuries.
3. Trps of the extensor muscles only refer to the lateral epicondyle.
4. The common extensor tendon is a common source of lateral elbow pain



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## Quiz Questions – T/F

5. The common flexor tendon is a common source of medial elbow pain.
6. One of the most reliable tests for the pronator teres is a compression test.
7. The Bracelet Test is for the carpal bones.



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## Quiz Questions – T/F

8. The ECRL & ECRB play a significant role in lateral elbow & anterior forearm pain.
9. The radial nerve should be considered as a source of lateral elbow pain.
10. The cervical spine should be considered as a source of lateral elbow pain.



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