ELBOW JOINT

Type
- Synovial / Hinge and compound as it has two articulations
  i) humero – ulnar & ii) humero – radial

Articular surfaces
1. Humerus – by trochlea & capitulum
2. Ulna – trochlear notch
3. Radius – head
Ligaments:
Fibrous capsule
Ulnar collateral
  a. Anterior band
  b. Posterior band
  c. Oblique band
Radial collateral
Synovial membrane
• Muscles related
  – Anterior – brachialis
  – Posterior– triceps, anconeus
  – Lateral – common extensor tendon, supinator
  – Medial – flexor carpi ulnaris, common flexor tendon
• Arterial supply
  – From anastomosis around elbow joint
• Nerves
  – Musculo-cutaneous and radial
    (with contributions from ulnar and median nerves)
Movements
- Flexion
- Extension
- Carrying angle disappears in flexion

Muscles producing movements:
Flexion
- Brachialis
- Biceps
- Brachioradialis

Extension
- Triceps
- Anconeus
APPLIED ANATOMY

Bursitis of olecranon bursa
Involvement of joint in
• Rheumatoid arthritis
• Trauma
• Skeletal dysplasia

Some conditions treated by total elbow replacement
Posterior dislocation of elbow joint
Anterior dislocation of head of radius
Distal (down ward) subluxation/dislocation of head of radius in children
Humerus
Anular ligament
Force causes radial head to subluxate from anular ligament
Lump caused by displaced head of radius
Muscle pulls radial head superiorly

Subluxation and dislocation

(B) Normal
Subclinical subluxation
Subluxation
Dislocation
RADIO ULNAR JOINTS

A. Proximal (Synovial)
   Between head of radius & radial notch of ulna held together by
   - Annular ligament
   - Quadrate ligament

B. Middle (Syndesmosis)
   i. Interosseous Membrane
      taut in mid-pronation and lax in supination/pronation
   ii. Oblique cord
C. Distal (Synovial)
Between head of ulna & ulnar notch of radius
Bound by a loose capsule closed distally by a fibrocartilage
• Nerve Supply
  Anterior interosseous branch of median nerve
• Movements –
  – Pronation and supination
  Movement of radius around an immobile ulna
• **Axis**

  A line from centre of curvature of proximal radio-ulnar joint to that of distal joint
  i.e. joins centre of head of radius to base of styloid process of ulna
  Traced upwards – in line with the shaft of humerus
  Prolonged downwards
    Passes along middle finger when the hand is hanging freely
    Or along little finger when the hand is resting on a surface
    Or along any finger which is fixed to a surface
There is
• Slight abduction of ulna in pronation (Anconeus)
• Slight adduction of ulna in supination (pronator teres) and bicipital aponeurosis
<table>
<thead>
<tr>
<th>Muscles</th>
<th>Pronation</th>
<th>Supination</th>
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<tbody>
<tr>
<td>Pronator quadratus</td>
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<td>Supinator (Radial nerve)</td>
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<td>&amp; teres (Median nerve)</td>
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<tr>
<td>Brachioradialis (Uptomid prone position)</td>
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<td>Biceps (Musculocutaneous nerve)</td>
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