Muscles of the Wrist and Fingers
Movement that occurs at the wrist

- **Flexion**: palm bends towards arm
- **Extension**: palm moves away from arm
- **Abduction**: side movement; thumb coming towards arm
- **Adduction**: side movement; thumb moving away from arm
- **Pronation**: palms down; also occurs at the elbow
- **Supination**: palms up; also occurs at the elbow
Flexion and Extension

[Wrist flexion image]

[Wrist extension image]
Abduction and Adduction

Wrist abduction (radial deviation)

Wrist adduction (ulnar deviation)
Movement of the fingers

- **Flexion**
  - Making a fist

- **Extension**
  - Straightening the fingers
Muscles that flex the wrist

- Located on the anteriomedial aspect of the forearm
- Flexor carpi radialis
- Flexor carpi ulnaris
- Palmaris longus
- These muscles ALSO flex the fingers:
  - Flexor digitorum superficialis, Flexor digitorum profundus, and Flexor pollicis longus
Flexor carpi radialis

- **Origin:**
  - Medial epicondyle of *humerus*
- **Insertion:**
  - 2nd and 3rd *metacarpals*
- **Actions:**
  - Flexion at the wrist
  - Abduction at the wrist
Flexor carpi ulnaris

- **Origin:**
  - Medial epicondyle of **humerus** and **ulna**

- **Insertion:**
  - Pisiform, hamate, and 5th metacarpal

- **Actions:**
  - Flexion at the wrist
  - Adduction at the wrist
Palmaris Longus

• **Origin:**
  – Medial epicondyle of the **humerus**

• **Insertion:**
  – 2\(^{nd}\)-5\(^{th}\) **metacarpals**

• **Action:**
  – Flexion at the wrist
Flexor digitorum superficialis

• **Origin:**
  – Medial epicondyle of humerus, radius, ulna

• **Insertion:**
  – Middle phalanges #2-5

• **Actions:**
  – Flexion of fingers
  – Flexion of wrist
Flexor digitorum profundus

• **Origin:**
  – Ulna

• **Insertion:**
  – Distal phalanges #2-5

• **Actions:**
  – Flexion of the fingers
  – Flexion of the wrist
Flexor pollicis longus

- **Origin:**
  - Ulna and radius

- **Insertion:**
  - Distal phalanx #1

- **Actions:**
  - Flexion of the thumb
  - Flexion of the wrist
Muscles that Extend at the wrist and fingers

- Extensor carpi ulnaris
- Extensor carpi radialis longus and brevis
- Extensor digitorum
- Extensor indicis
- Extensor digiti minimi
- Extensor pollicis longus and brevis
- These are all located on the POSTERIOR aspect of the lower arm
Extensor carpi ulnaris

- **Origin:**
  - Lateral epicondyle of the humerus

- **Insertion:**
  - 5\textsuperscript{th} metacarpal

- **Actions:**
  - Extension at the wrist
  - Adduction at the wrist
Extensor carpi radialis longus

• **Origin:**
  – Lateral epicondyle of humerus

• **Insertion:**
  – 2nd metacarpal

• **Actions:**
  – Extension at the wrist
  – Abduction at the wrist
Extensor carpi radialis brevis

- **Origin:**
  - Lateral epicondyle of the humerus
- **Insertion:**
  - 3rd metacarpal
- **Actions:**
  - Extension at the wrist
  - Abduction at the wrist
**Extensor digitorum**

- **Origin:**
  - Lateral epicondyle of the humerus
- **Insertion:**
  - Distal phalanges #2-5
- **Actions:**
  - Extension of the wrist
  - Extension of the fingers
Extensor indicis

- **Origin:**
  - Ulna

- **Insertion:**
  - Middle and distal phalanges #2

- **Actions:**
  - Extension of index finger
  - Weak extension at wrist
Extensor digiti minimi

- **Origin:**
  - Lateral epicondyle of humerus

- **Insertion:**
  - Middle and distal phalanges #5

- **Actions:**
  - Extension of little finger
  - Weak extension at wrist
Extensor pollicis longus and brevis

• **Origin:**
  – Radius (brevis)
  – Ulna (longus)

• **Insertion:**
  – Phalanges #1

• **Actions:**
  – Extension of thumb
  – Extension of wrist
Extensor Pollicis Longus and Brevis