THE RADIUS

Type: Typical long bone. It forms through endochondral ossification.

Site: Lateral bone of the forearm. It runs parallel to the ulna during supination. It crosses over the ulna in pronation.

Side identification (right and left):

1. Upper end has a disc-shaped head.
2. Lower end expands and has a styloid process.
3. Shaft bows out laterally with a sharp medial interosseous border.
4. Front of the lower end is smooth and slightly hollow.

General features

The radius has a shaft and two ends: upper and lower.

A. Upper end (head, neck, tuberosity)

1. Head (disc-shaped).

a. Upper surface is concave. It joins the humerus capitulum.

b. Edge partly joins ulna radial notch. It also partly joins annular ligament of superior radioulnar joint.

2. Neck:

a. Narrow part right below head.

b. Lower annular ligament attaches loosely here.

3. Radial tuberosity:

a. Lies under medial neck part.

b. Back rough area takes biceps tendon insertion.

c. Front smooth area touches bursa that pads against biceps tendon.

Lower end

Widest part of radius. Has five surfaces plus styloid process.

a. Front surface: Smooth and slightly concave.

b. Back surface: Rough and convex. Shows:

1. Clear ridge named Lister dorsal tubercle. Feel it in life along gap between index and middle fingers.
2. Wide groove lateral to dorsal tubercle.
3. Two grooves medial to dorsal tubercle.

c. Lateral surface:

1. Sticks out below rest of bone as styloid process. Feel it under skin in anatomical snuffbox.
2. Radius styloid hangs 1 cm lower than ulna styloid.
3. Attaches wrist joint lateral ligament.

d. Bottom surface:

Smooth and concave. Faint ridge splits it into:

1. Triangle that joins scaphoid.
2. Medial square that joins lunate.

e. Medial surface:

1. Concave as ulnar notch of radius. Joins ulna head for inferior radioulnar joint.
2. Ridge at notch base holds triangular fibrocartilage base of inferior radioulnar joint.

Shaft of radius

Has three borders and three surfaces.

1. Interosseous border:

Sharpest one. Faces medial. Starts below radial tuberosity. Ends by splitting into two lines around triangle above ulnar notch. Upper two-thirds attaches interosseous membrane.

2. Front border:

Starts front-lateral to radial tuberosity. Upper part is anterior oblique line. Lower part forms sharp lateral edge of lower end.

3. Back border:

Starts back below radial tuberosity. Upper part is posterior oblique line. Ends at Lister dorsal tubercle.

4. Front surface: Lies between front and interosseous borders. Upper third has nutrient foramen aimed toward elbow.
5. Back surface: Flat. Lies between front and back borders.
6. Lateral surface: Convex. Lies between front and back borders. Middle has rough pronator tuberosity.

Subcutaneous bone points of radius:

1. Back of head. Feel at back of elbow below lateral epicondyle.
2. Back surface of lower end.
3. Styloid process. Feel in anatomical snuffbox.

Muscles Attached to the Radius

A. Biceps tendon inserts into the back part of the radial tuberosity.

B. Three muscles attach to the front surface of the radius.

1. Flexor digitorum superficialis (radial head) starts from the front oblique line.
2. Flexor pollicis longus begins on the upper two-thirds of the front surface. It sits below the front oblique line.
3. Pronator quadratus inserts into the lower 1 1/2 of the front surface of the radius.

C. Three muscles insert into the outer surface of the radius.

1. Supinator inserts into the upper one-third of the shaft. It lies between the front and back oblique lines.

2. Pronator teres inserts into the pronator tuberosity. This spot sits in the middle of the outer surface.
3. Brachioradialis inserts into the lower end of the outer surface. It rests above the styloid process.

D. Two muscles start from the back surface.

1. Abductor pollicis longus begins on the middle one-third of the back surface. It lies below the back oblique line.
2. Extensor pollicis brevis starts from the lower one-third of the back surface. It sits below abductor pollicis longus