IDENTIFYING THE SMALLER LONG BONES: A FLOWCHART

**PROXIMAL END**
- Is the proximal end a hooked, half-moon shape with two distinctly curved articular surfaces?
  - YES: ULNA
  - NO: FIBULA

**FIBULA**
- Is the head bulbous and irregular, with a pointed tip and flattened surface approximately the size of a fingernail on its medial surface?
  - YES: RADIUS
  - NO: ULNA

**ULNA**
- Is the head a flattened, regular cap shaped like a lozenge with a shallow indentation in its center?
  - YES: RADIUS
  - NO: FIBULA

**SHAFT**
- Is the shaft thin, straight and irregular with sharp crests and a triangular or quadrilateral cross-section?
  - YES: FIBULA
  - NO: ULNA

**FIBULA**
- Does the shaft have a sharp interosseous crest but grow increasingly narrow along one end?
  - YES: RADIUS
  - NO: ULNA

**ULNA**
- Does the shaft have a sharp interosseous crest but maintain a relatively even width along its entire length?
  - YES: RADIUS
  - NO: FIBULA

**DISTAL END**
- Is the distal end a rounded triangular knob with a deep, peanut-sized indentation on its smooth medial surface?
  - YES: RADIUS
  - NO: ULNA

**ULNA**
- Is the distal end round and attenuated, with a small, projecting hook on its posterior surface?
  - YES: RADIUS
  - NO: FIBULA

**FIBULA**
- Is the distal end blocky and rhombus-shaped, with a smooth, concave anterior surface and a rugged, convex posterior surface?
  - YES: RADIUS
  - NO: ULNA

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CROSS-SECTIONAL FORM OF THE SMALLER LONG BONES

THE RADIUS
Feel tears welling up in your eyes at the thought of dealing with fragmentary radii? You are not alone, but if the radius makes you want to cry, use that to your advantage – it will help you to remember that the radial shaft is shaped like a tear-drop in cross-section.

THE FIBULA
Distress. Despair. Bewilderment. The fibula’s tortuous curvature and lack of distinctive features mean that it provokes as many confusing emotions as Picasso’s Guernica. That association should help you remember that, like the work of the Cubists, the fibular shaft is shaped like an irregular triangle or rectangle in cross-section. And if the Cubists baked cakes, they would probably use fibular-style pans like the ones below.

THE ULNA
The ulna is the quintessential bodybuilder who always skips the leg workout. The bone has a large and chunky proximal end and small, narrow distal end. The top 2/3 of the shaft are shaped like a triangle with rounded corners (a bit like a guitar pick) while the bottom third grades into a narrower cylinder.

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**THE RADIUS: KEY FEATURES**

- **The head of the radius** is always thickest on its medial aspect.
- **The radial tuberosity** has a sharp, palpable ridge along its posterior and medial aspect.
- **The radial tuberosity** is a roughened, oval-shaped nodule on the proximal and medial portion of the radius.
- **The nutrient foramen** is on the anterior and proximal half of the shaft.
- **The interosseous crest** is a sharp ridge that runs along the medial side of the center of the shaft.
- **The ulnar notch** is an even, curved indentation for the head of the ulna. This hollow lies on the medial half of the distal radius.
- The **dorsal tubercle** is a distinct projection on the posterior distal surface of the radius. Its border is demarcated by palpable grooves.
- The **styloid process** is a sharp pointed projection on the lateral side of the distal end of the bone.
- The anterior surface of the distal end of the radius is slightly concave – the shallow indentation provides just about enough space for your thumb.

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**Left radius, posterior view**

**Left radius, anterior view**

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ORIENTING THE RADIUS USING THE FOREARM

**STEP 1:** Remember that in Standard Anatomical Position (SAP), the radius comprises the lateral side of your forearm when your palms are facing up. *(Figure is of right radius).*

**STEP 2:** Extend your forearm and hand in front of you in SAP. The palmar surface of your hand is smooth and slightly concave, while the dorsal surface of your hand is bumpier, because of your knuckles. The curvature of the distal radius is very similar: smooth and concave on its anterior aspect, rugged and bumpy on its posterior aspect. *(Photos are of left radius).*

**STEP 3:** Once you’ve figured out which aspect is anterior and which is posterior, lay the bone in anatomical position along one of your forearms. The styloid process will point to the same side as your thumb - it also sticks out at a bit of an angle, just like your thumb! *(Photos are of left radius).*

**STEP 4:** Double-check your siding. The radial tuberosity and interosseous crest should be medial, and the nutrient foramen should be anterior. *(Photos are of left radius).*

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