

Bio211
Laboratory 5

Vertebral Column
Pectoral Girdle and Upper Limb

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Objectives of Lab

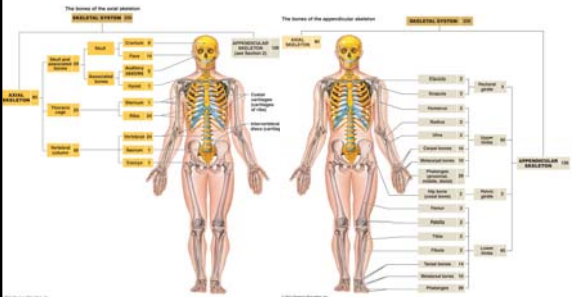
- Become familiar with the bones and structures of the
 - Vertebral column
 - Thoracic cage (ribs, sternum)
 - Pectoral girdle (clavicles, scapula)
 - Upper limbs (humerus, radius, ulna, bones of hand)

- Know the definition of the **major landmarks** as they apply to the bones we cover today

- Be able to recognize the skeletal structures listed on your **Laboratory Guide handout, Exercise 5 and Exercise 6 (up to and including phalanges of hand)**

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Skeletal Organization



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Landmarks of Bones

- **Angle** – Sharp corner (superior angle of scapula)
- **Border** – Outer part or edge (lateral border of scapula)
- **Epicondyle** – Projection situated above (proximal to) a condyle (lateral and medial humeral epicondyles)
- **Facet** – Small, nearly flat surface (superior articular facet of the vertebrae)

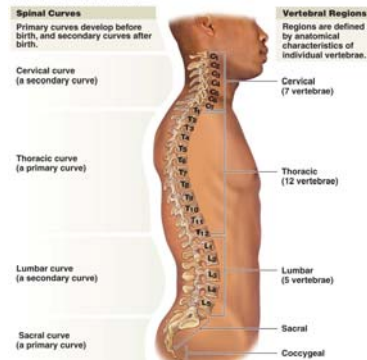
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Landmarks of Bones

- **Hiatus** – Opening; gap or cleft (sacral hiatus)
- **Notch** – Deep indentation or narrow gap in the edge of a structure (radial notch)
- **Tubercle** – Small, knoblike process (lesser tubercle of humerus)
- **Tuberosity** – A rough, elevated surface, (deltoid tuberosity of humerus)

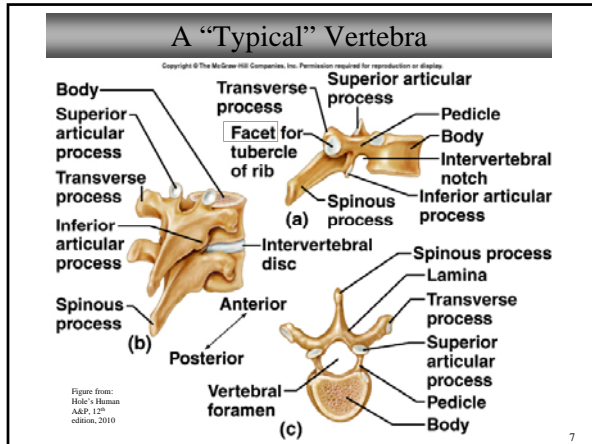
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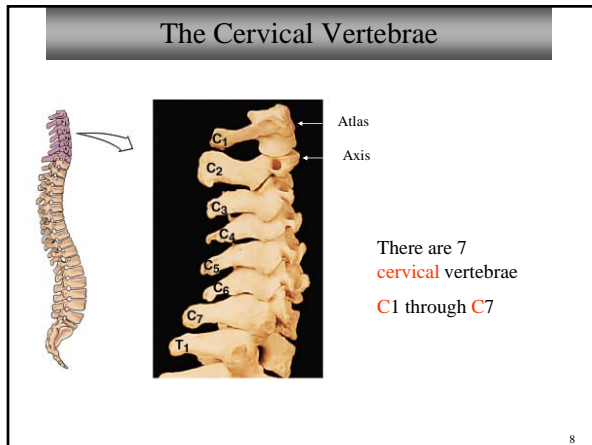
The spinal curves and vertebral regions in the adult vertebral column

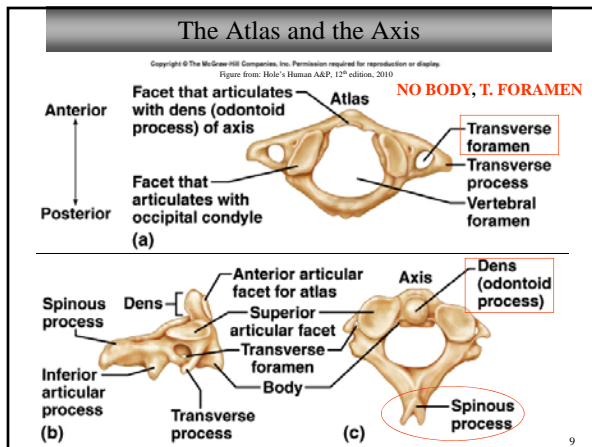


The Vertebral Column and Vertebrae

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The Atlas and the Axis

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Cervical Vertebrae

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NOTES:

1. Bifid spinous process (except C7)
2. Transverse foramen
3. Small size
4. Large vertebral foramen

(a) Cervical vertebra

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Thoracic Vertebrae

NOTES:

1. Long pointed spinous process; project downward
2. NO transverse foramen
3. Bigger than cervical vertebrae, with larger body that is heart-shaped
4. Facets for rib articulations present

(b) Thoracic vertebra

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Lumbar Vertebrae

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(c) Lumbar vertebra

NOTES:

1. Short thick spinous process (straight)
2. NO transverse foramen; small vertebral foramen (triangular)
3. Largest of the vertebrae; large bodies
4. Thin, prominent transverse processes

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Sacrum and Coccyx

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(a) **(b)**

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Thoracic Cage

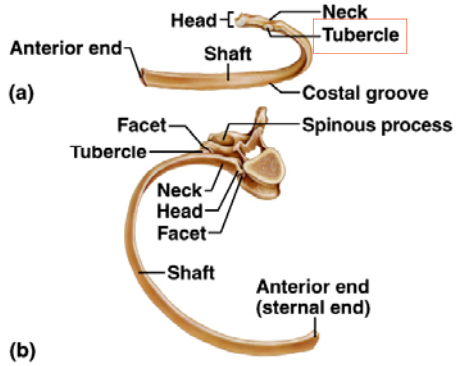
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(a)

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Ribs and Their Articulation with Vertebrae

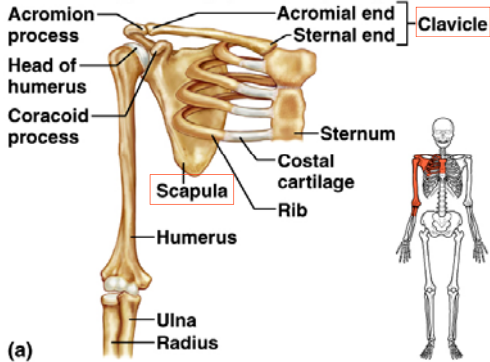
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Pectoral Girdle

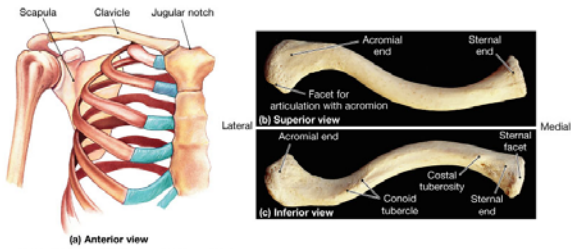
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(a)

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The Clavicles

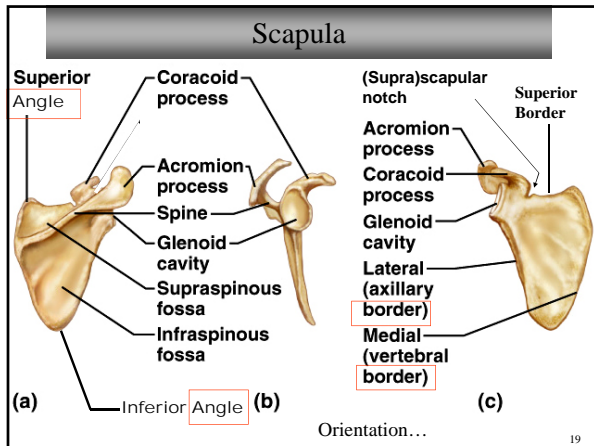


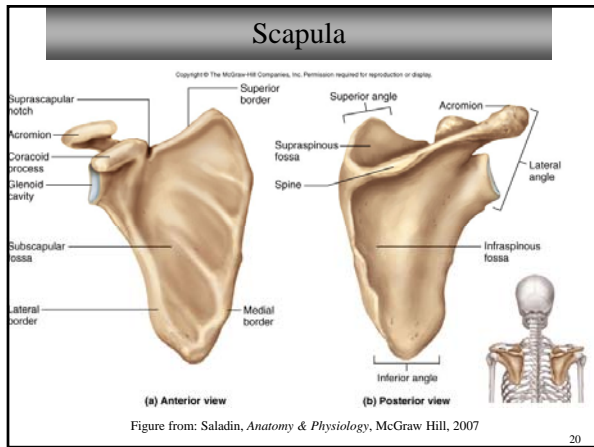
(a) Anterior view

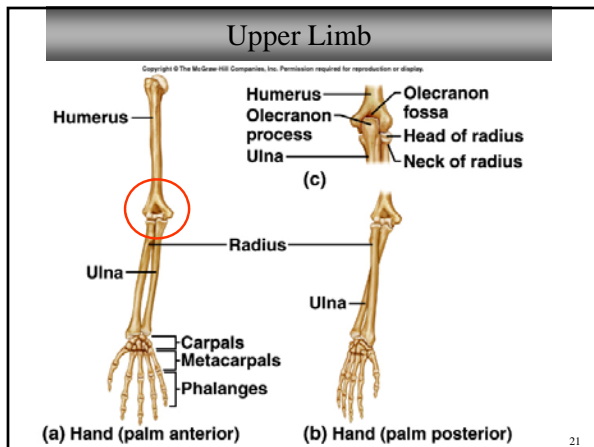
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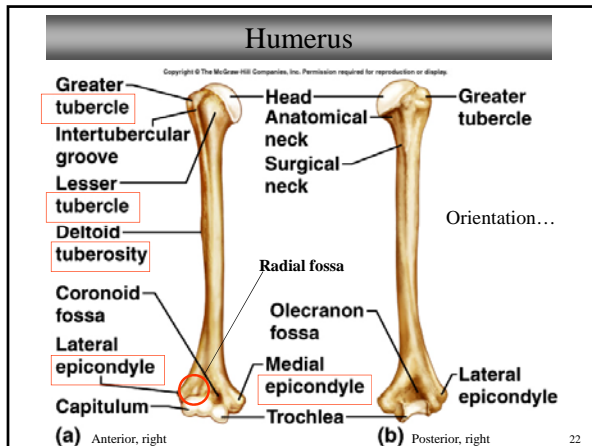
From: Martini, Fundamentals of Anatomy & Physiology, 6th ed., Benjamin Cummings, 2004

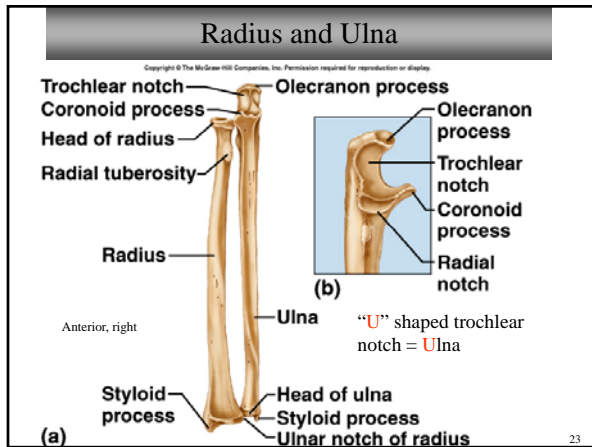
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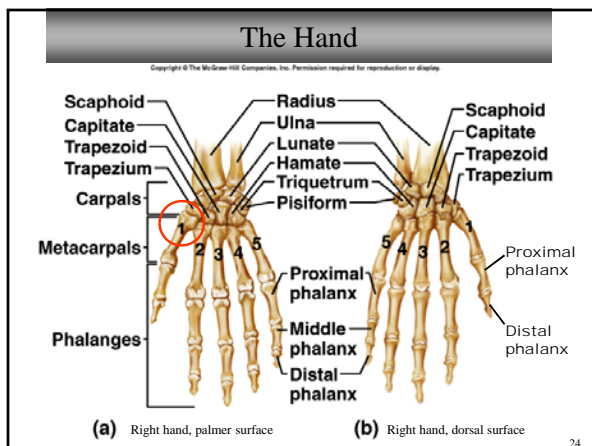












The Carpals (Wrist)

Thumb is 1st metacarpal (anatomical position)

Right hand, palmar surface

Hook

Scared Lovers Try Positions
That They Cannot Handle

Scaphoid Lunate Triquetrum Pisiform
[Lateral (Thumb side) -> Medial]

Trapezium Trapezoid Capitate Hamate

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Hook of the Hamate

Remember, this will appear on the *palmar* surface of the hand (like the pisiform)

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What you should do in lab today...

- Wood's Laboratory Manual
 - Review figures 14.15 – 14.19 (pp. 179 – 183)
 - This will give you an overview of the vertebrae and thoracic cage
 - Review figures 15.2 – 15.6 (pp. 193 – 197)
 - This will give you an overview of the pectoral girdle, upper limb, and hand
- Handle the bones. Use your labeled figures as guides to the names of the bones and structures. Be sure to look at how these bones articulate in a skeleton.
- REVIEW THE SKULL!!
- Make no bones about it – you should get tested before you leave today! ☺

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What you should be able to do after lab today...

- Know the names of all the bones and structures we covered today (in Laboratory Guide Exercises 5 and 6 **up to and including phalanges of hand only**)
- Be able to give the definition of the bone landmarks described for today's and last the lab
- ****You should be able to recognize and distinguish *disarticulated* bones based on their unique characteristics!!**

DON'T GET BEHIND!! There's a lot to know.

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For next lab...

- For **Bones: Pelvic Girdle and Lower Limb**
 - Read pp. 199 – 205 in Wood's Lab Manual
 - **Suggestion:** Lab Report 15 (p. 207) before lab
- Next lab, continue to **REVIEW** the skull and review the bones you will learn in today's lab

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