

## Bio 101 Laboratory 7

### Vertebral Column & Thoracic Cage

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### Objectives of Lab

- Become familiar with the bones and structures of the
  - Vertebral column
  - Thoracic cage (ribs, sternum)
- 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 handout for today.

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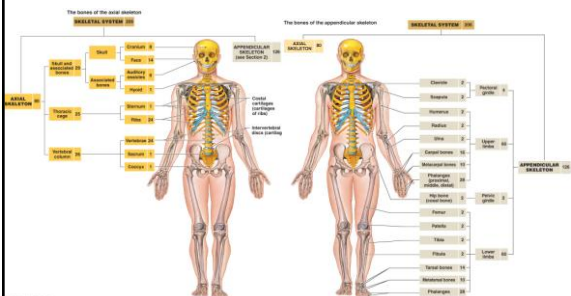
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### Skeletal Organization



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## Landmarks of Bones

- **Angle** – Sharp corner (sternal angle)
- **Facet** – Small, nearly flat surface (superior articular facet of the vertebrae)
- **Hiatus** – Opening; gap or cleft (sacral hiatus)
- **Notch** – Deep indentation or narrow gap in the edge of a structure (sternal notch)
- **Tubercle** – Small, knoblike process (tubercles of the sacrum)

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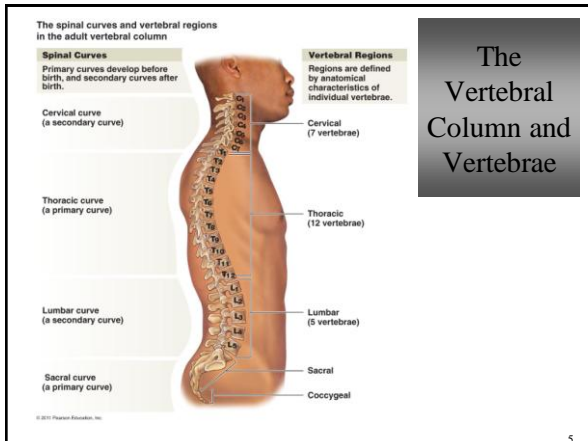
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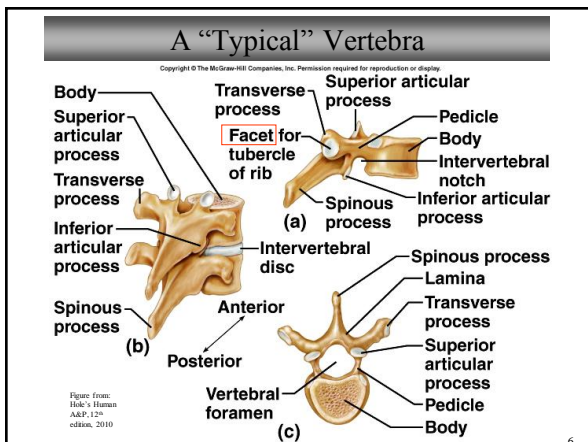
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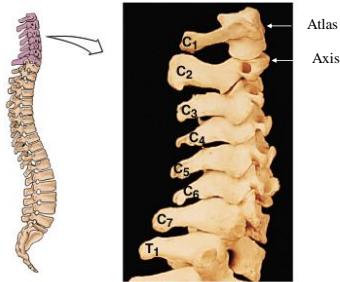
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## The Cervical Vertebrae



There are 7  
cervical vertebrae  
C1 through C7

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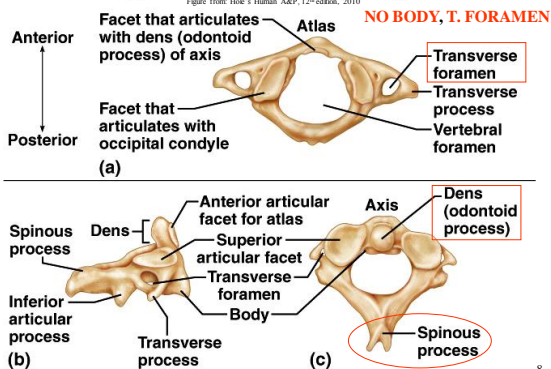
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## The Atlas and the Axis

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Figure from: Hole's Human A&P, 12th edition, 2010




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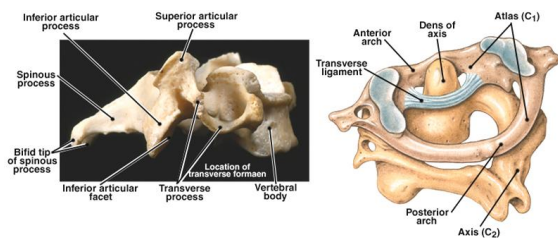
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## The Atlas and the Axis



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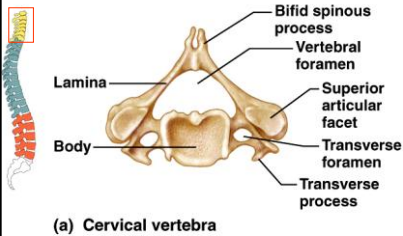
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## Cervical Vertebrae

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(a) Cervical vertebra

### NOTES:

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

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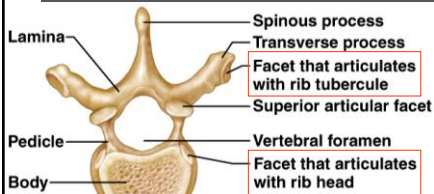
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## Thoracic Vertebrae



(b) Thoracic vertebra

### 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

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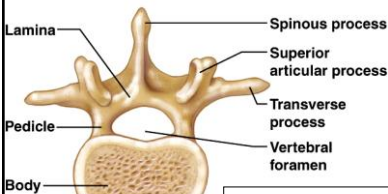
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## Lumbar Vertebrae

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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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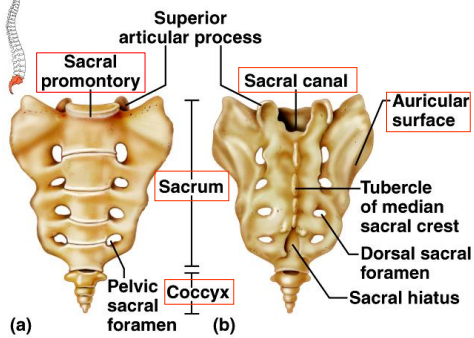
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## Sacrum and Coccyx

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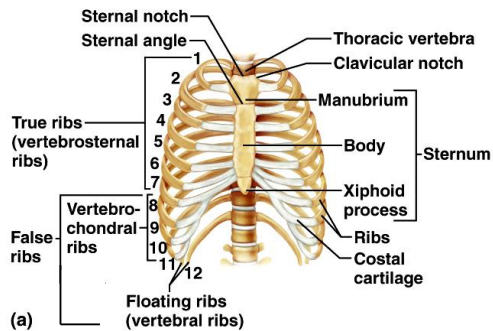
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## Thoracic Cage

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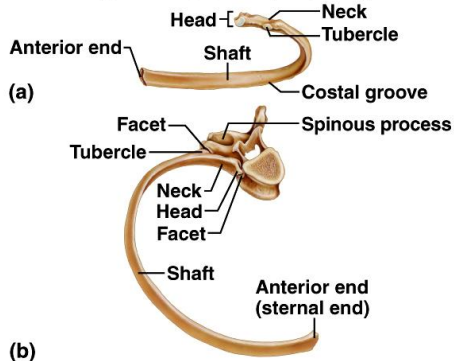
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## Ribs and Their Articulation with Vertebrae

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### What you should do in lab today...

- Marieb's Laboratory Manual
  - Exercise 9, Activities 3 through 5
- 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.
- Test your lab partners!! This is a great way to learn.
- REVIEW THE SKULL from last lab

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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 and in last lab on skull (in Laboratory Guide Exercises 6 and 7)
- 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...

- **Bones: Pectoral Girdle and Upper Limb**
  - Read Exercise 10 in Marieb's Lab Manual
- Continue to REVIEW the skull and review the bones you will learn in today's lab
- Practice bone identification on the sites given as links from our class Web site – and see online quizzes.
- Use Mastering A&P PAL to practice.

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