

# BIO 211:

## ANATOMY & PHYSIOLOGY I



***STRONGLY SUGGESTED***  
 Have the Morton - Perry Atlas  
 open while viewing these plates !!!

Helpful **SELF-TESTS** listed on the last slide.

### **Module 3 of 5**

## **BONE LABS:**

**- VERTEBRAE -**  
**- THORACIC CAGE -**

**Dr. Lawrence G. Altman**

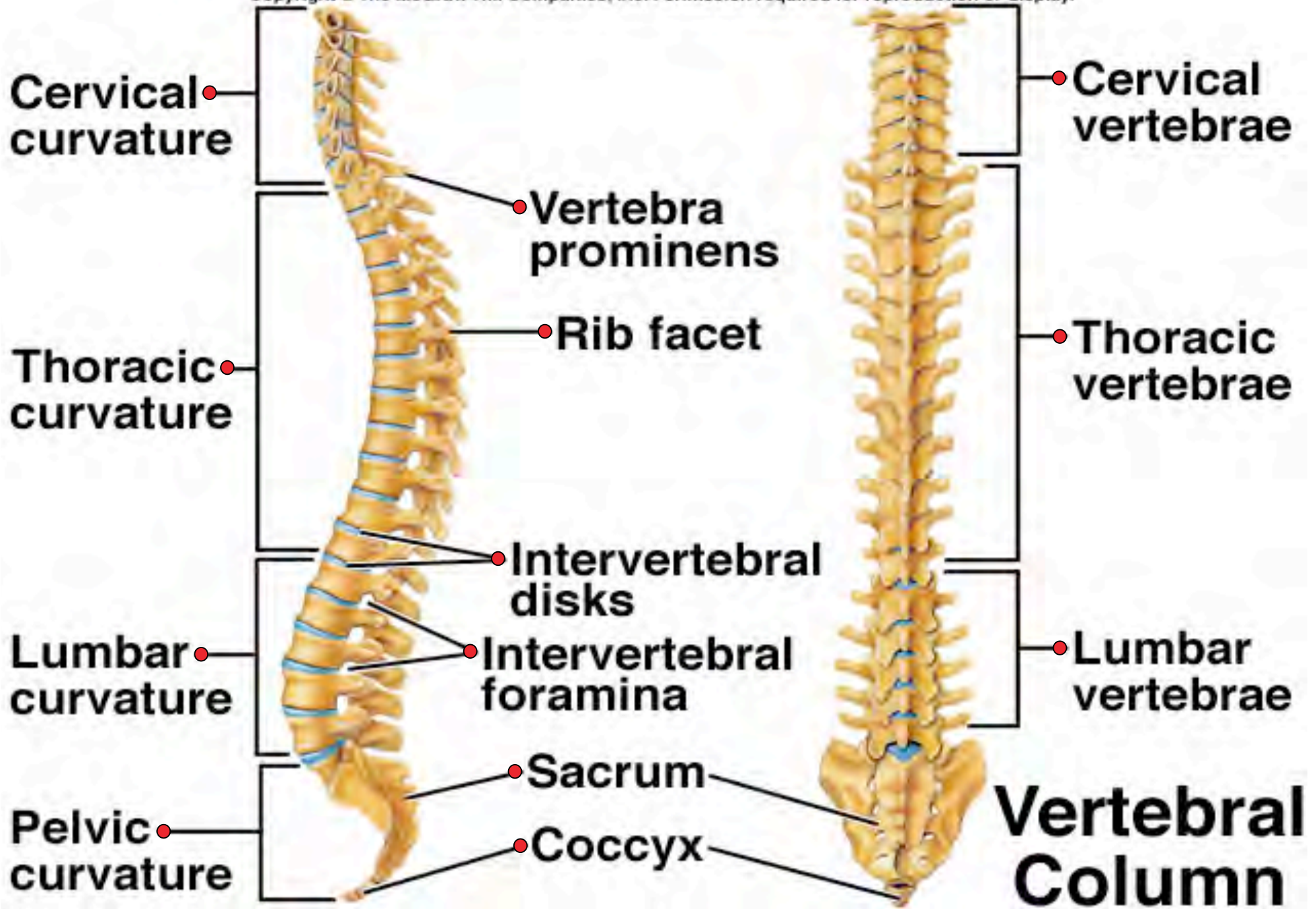
**[www.lawrencegaltman.com](http://www.lawrencegaltman.com)**

*Some illustrations are courtesy of McGraw-Hill.*

**● = Required**

**○ = Not Required**

**N** Naugatuck  
 Valley  
 Community  
 College



**Cervical curvature**

**Thoracic curvature**

**Lumbar curvature**

**Pelvic curvature**

**Cervical vertebrae**

**Thoracic vertebrae**

**Lumbar vertebrae**

**Vertebral Column**

**Vertebra prominens**

**Rib facet**

**Intervertebral disks**

**Intervertebral foramina**

**Sacrum**

**Coccyx**

Table

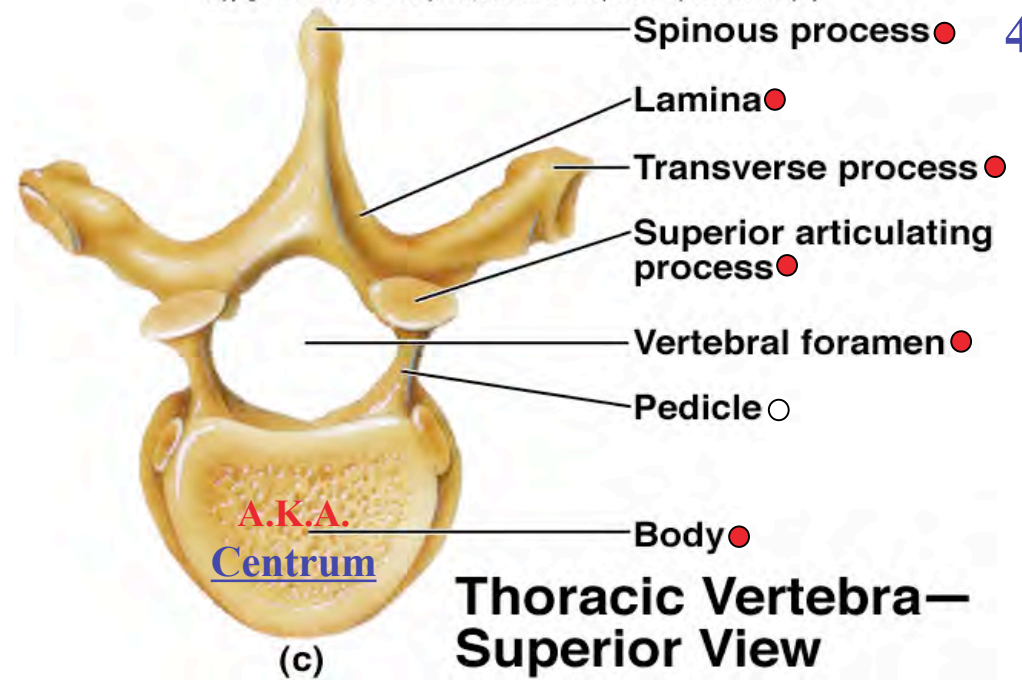
## 7.9

## Bones of Vertebral Column

Bones	Number	Special Features	Bones	Number	Special Features
Cervical • vertebrae	7	Transverse foramina; facets of atlas articulate with occipital condyles of skull; dens of axis articulates with atlas; spinous processes of second through fifth vertebrae are bifid	Lumbar • vertebrae	5	Large bodies; transverse processes that project posteriorly at sharp angles; short, thick spinous processes directed nearly horizontally
Thoracic • vertebrae	12	Pointed spinous processes that slope downward; facets that articulate with ribs	Sacrum •	5 vertebrae fused into 1 bone	Dorsal sacral foramina, auricular surfaces, sacral promontory, sacral canal, sacral foramina
			Coccyx •	4 vertebrae fused into 1 bone	Attached by ligaments to the margins of the sacral hiatus

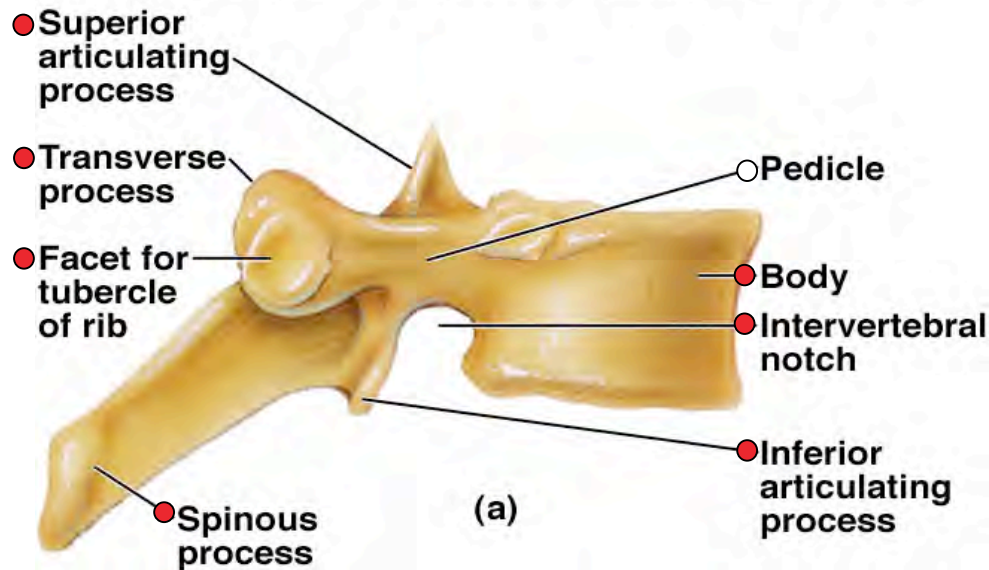
Use this Plate as a starting point to learn the generalized features of vertebrae. Start on the right >>>>>>

Suggested study order: c > a > b

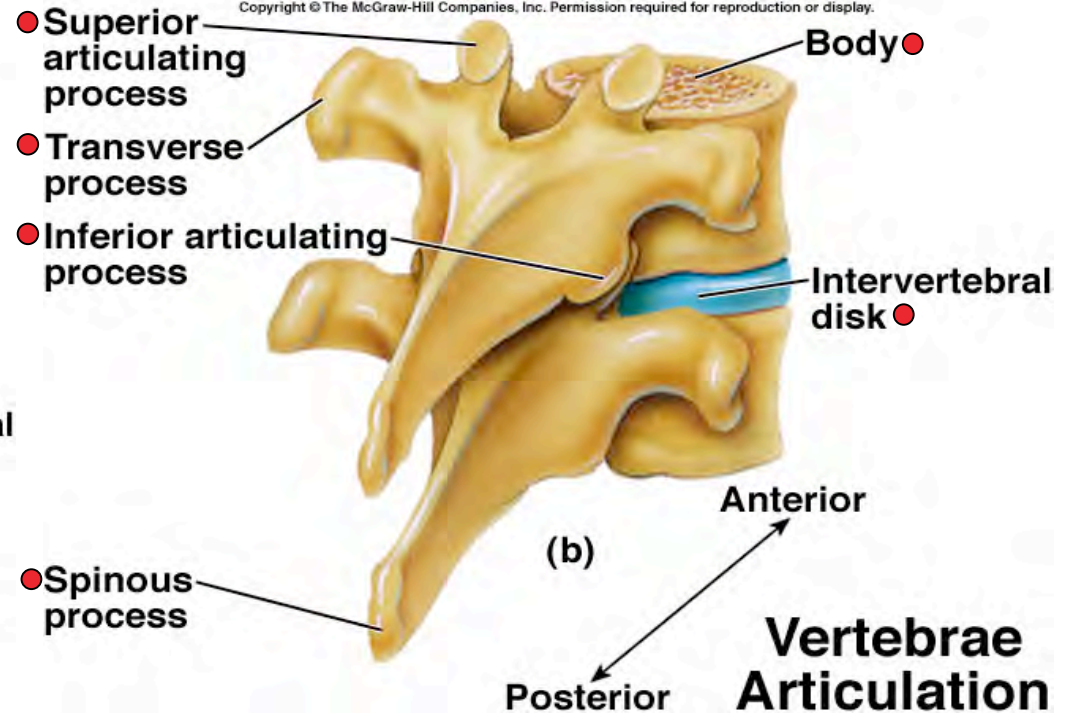


Thoracic Vertebra—Superior View

Thoracic Vertebra—Lateral View



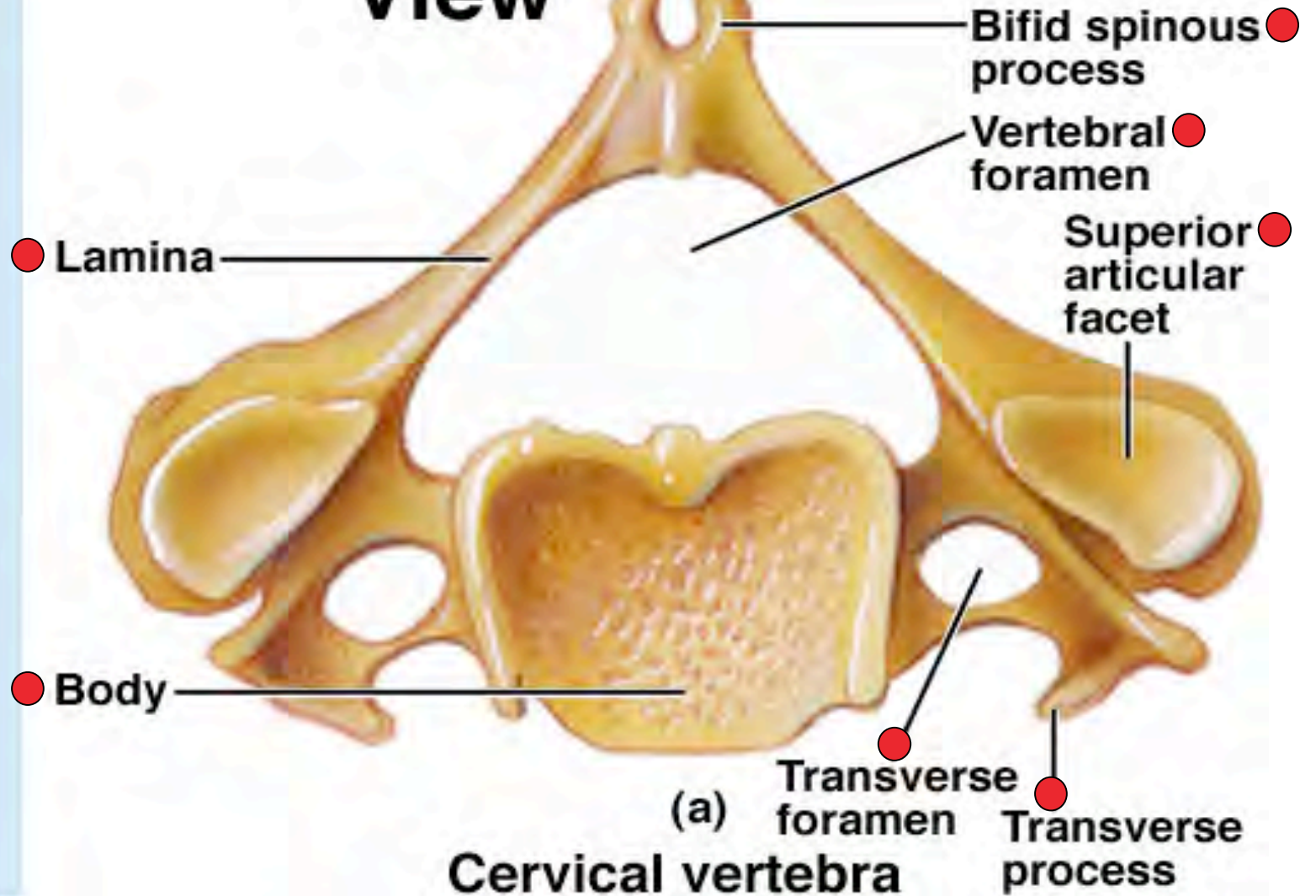
(a)



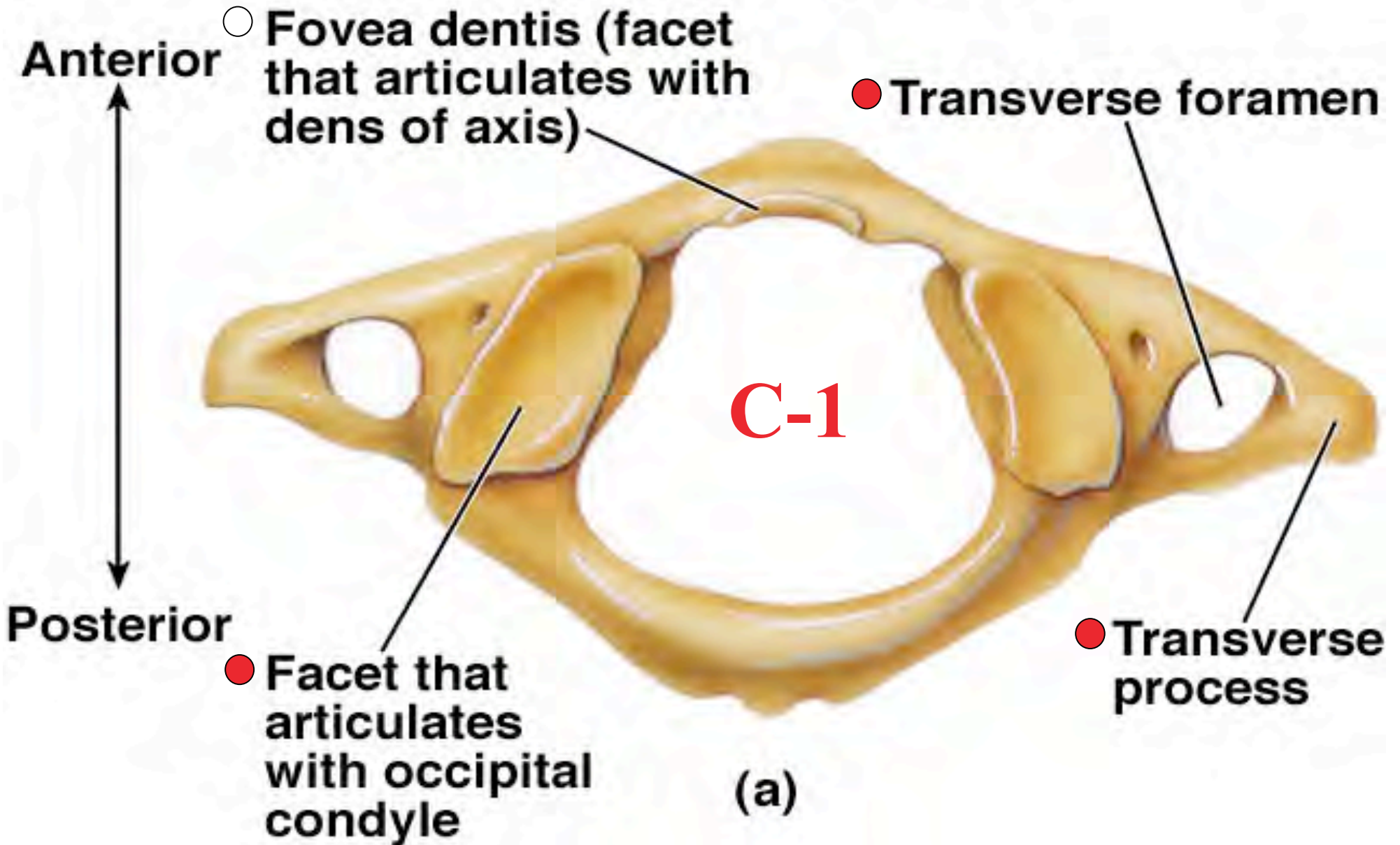
(b)

Vertebrae Articulation

# Cervical Vertebra— Superior View



# Atlas—Superior View



# Axis

● Dens (odontoid process)

● Anterior articular facet for atlas

● Superior articular facet

● Spinous process

} Dens ●

**C-2**

● Transverse foramen

● Body

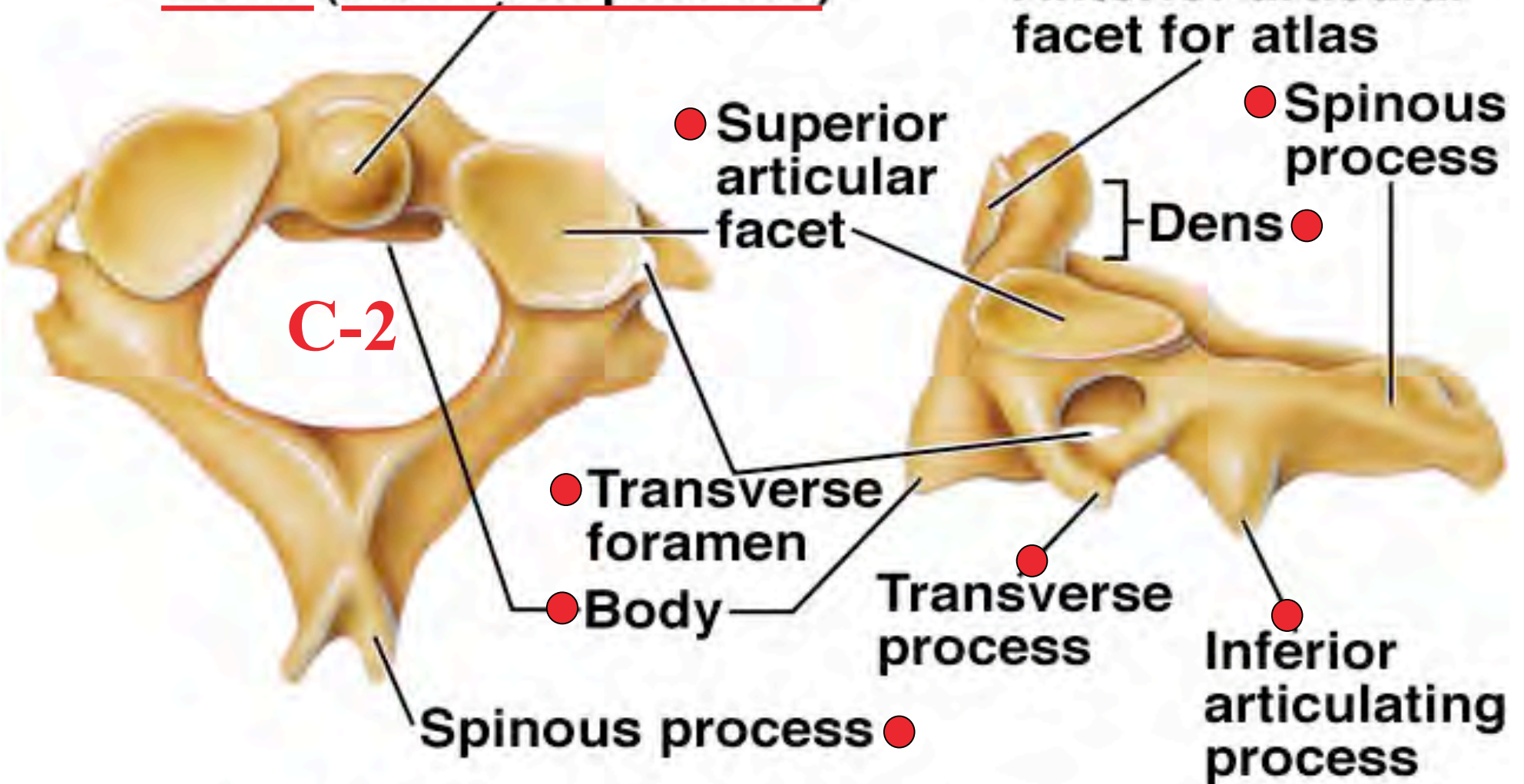
● Transverse process

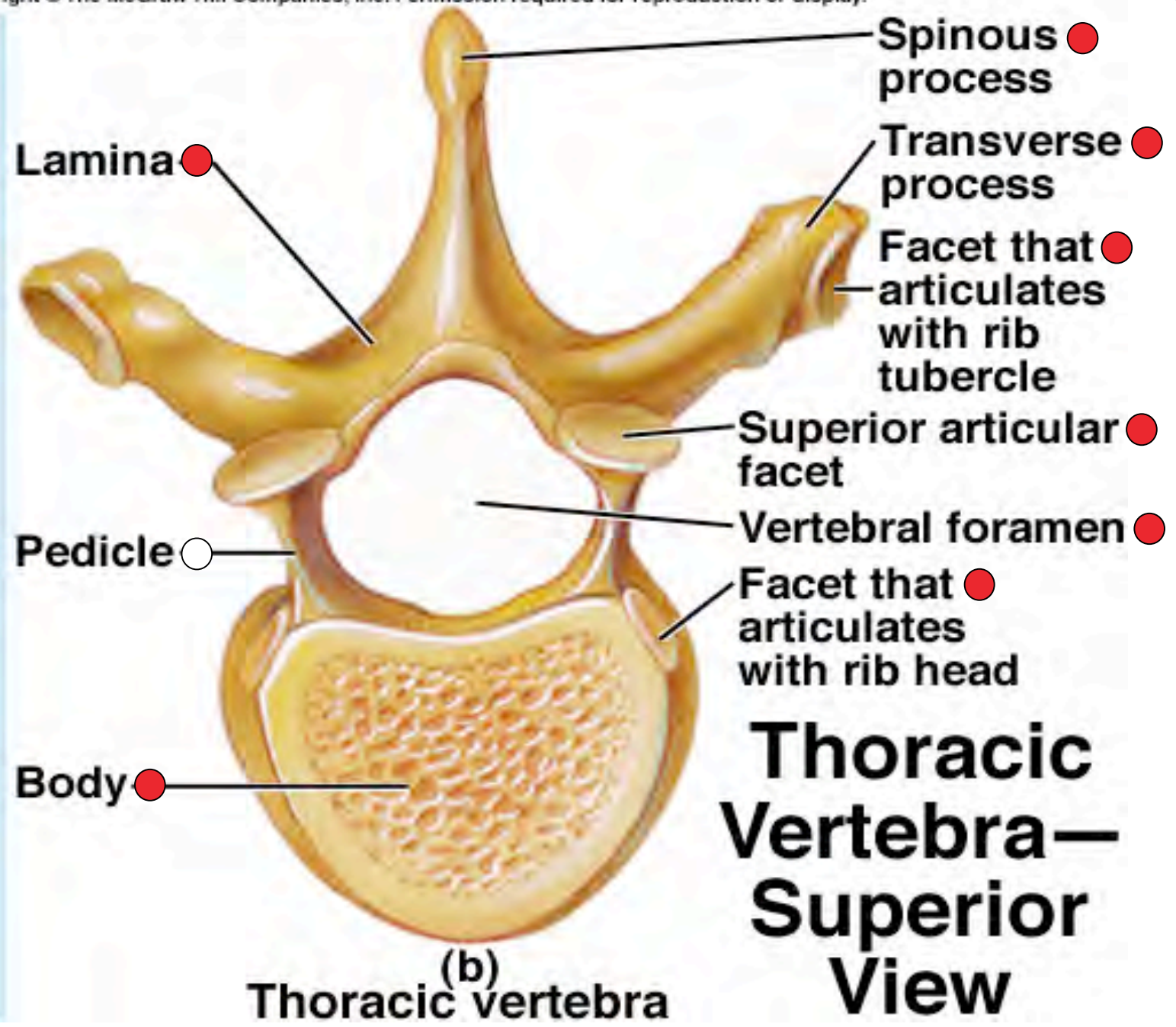
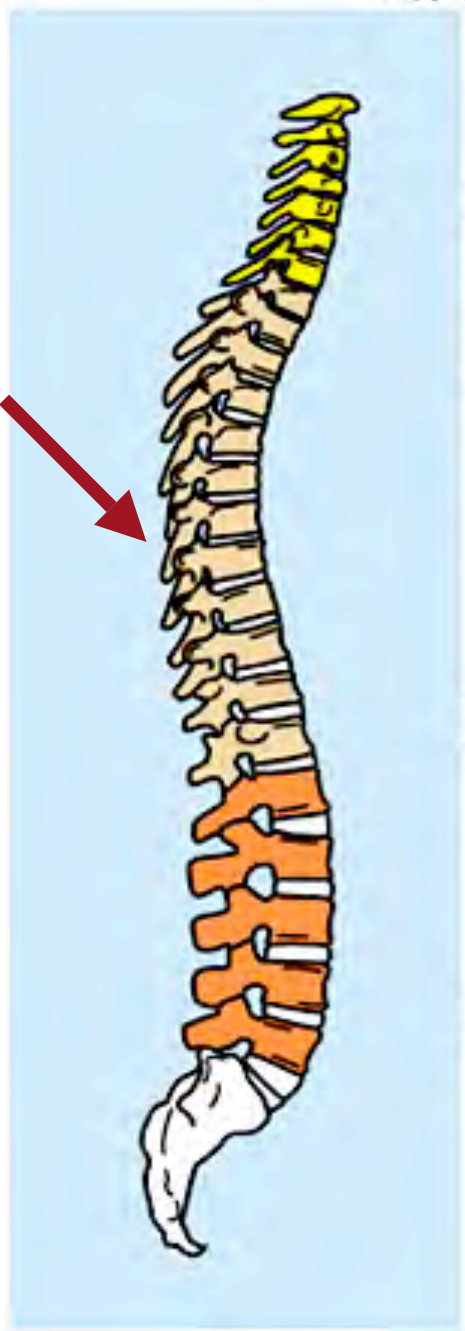
● Inferior articulating process

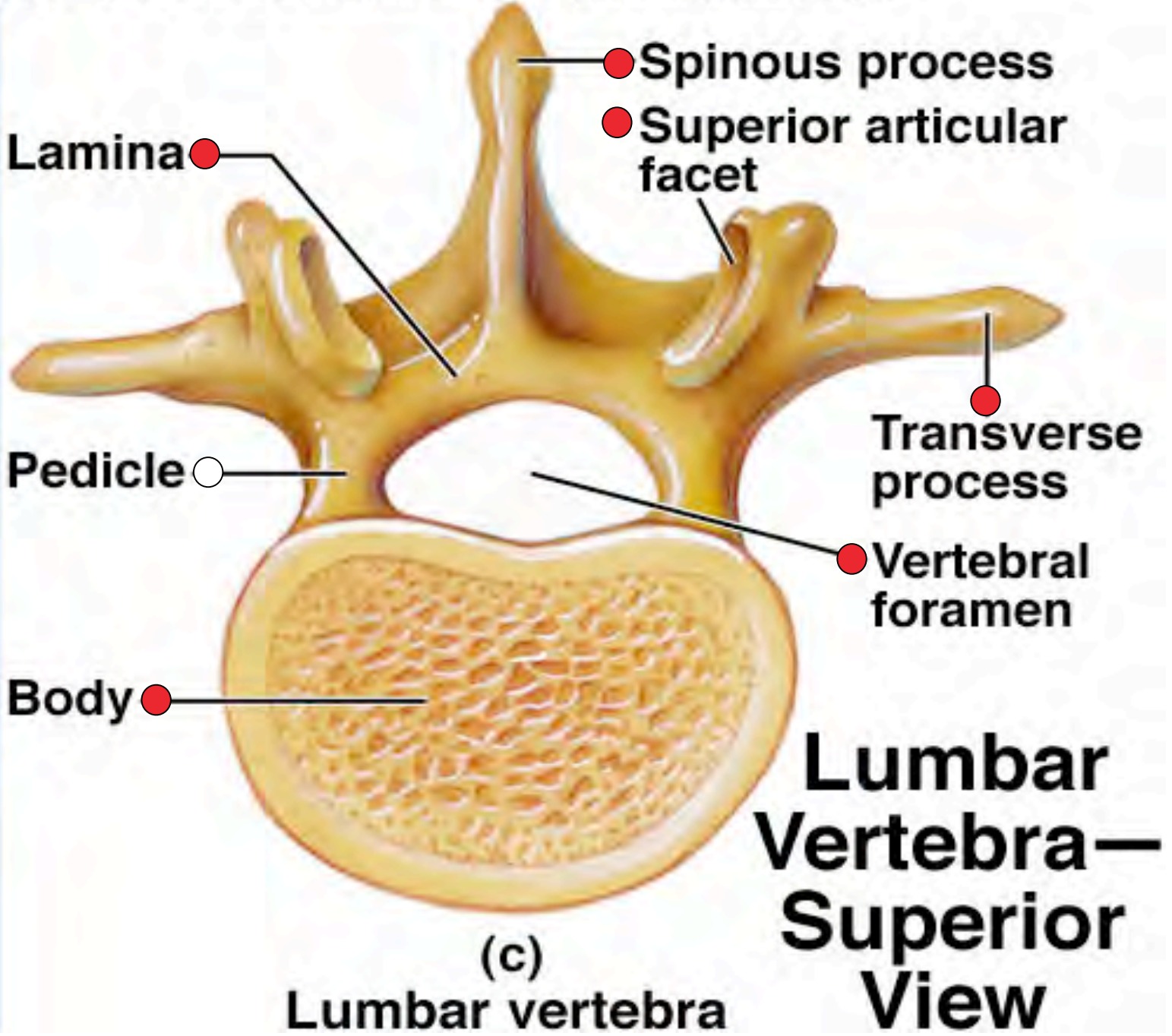
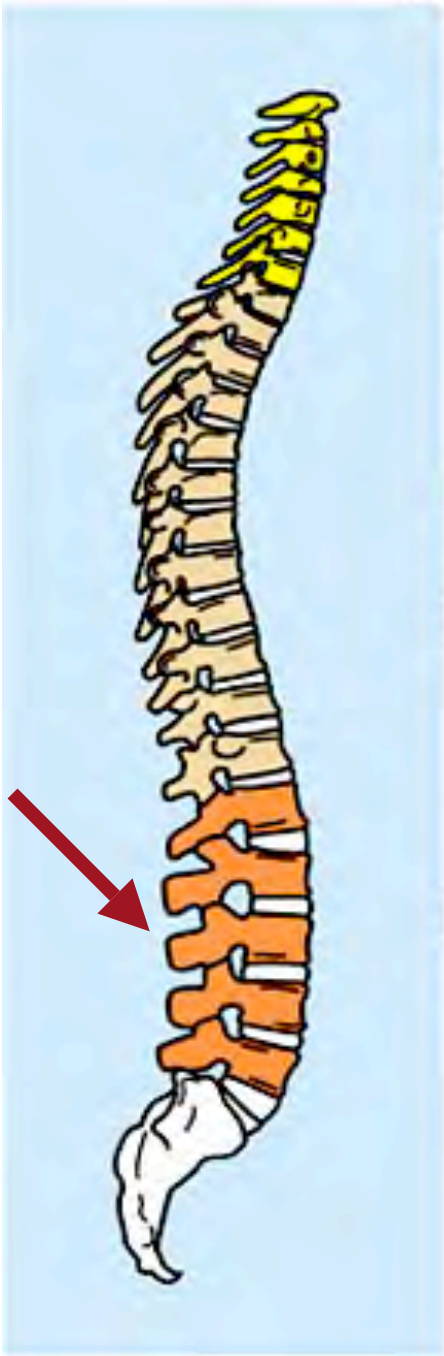
● Spinous process ●

(b)

(c)







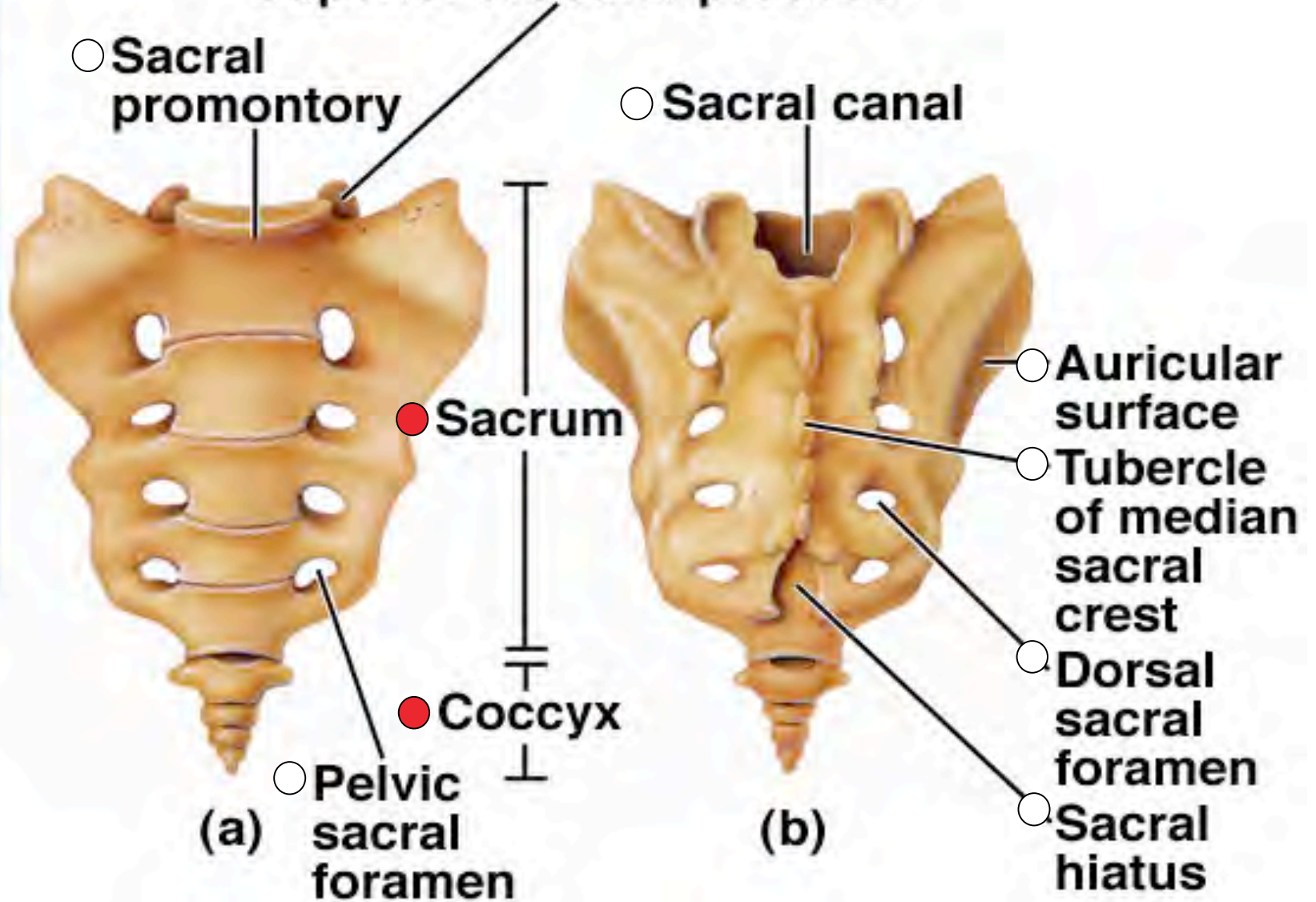
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# Sacrum and Coccyx

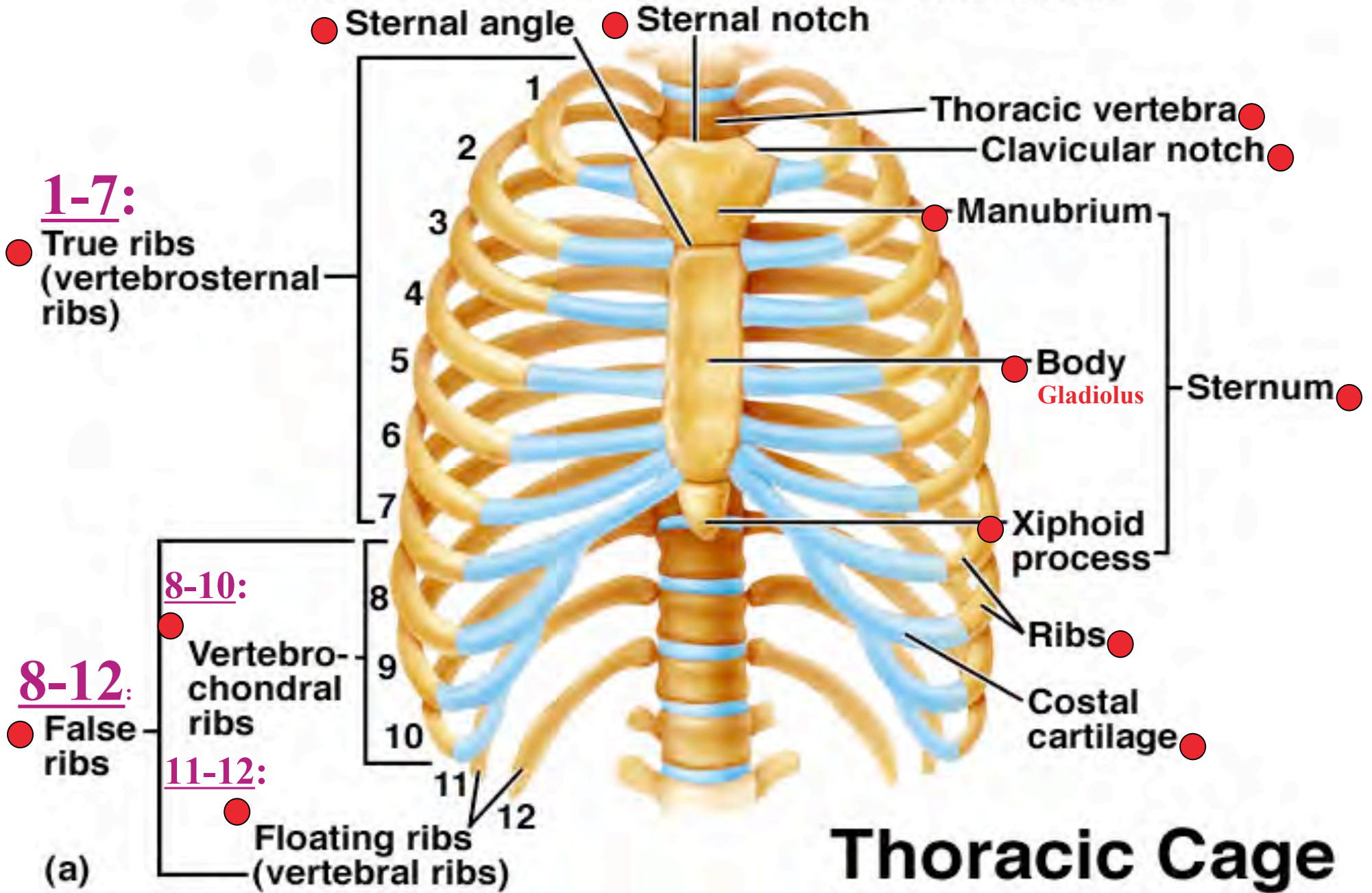
○ Superior articular process

○ Sacral promontory

○ Sacral canal



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# Thoracic Cage

*Ready for a Self - Test ?*

*Two of my favorite sites:*

*- Best for the Skull -*

<http://www.gwc.maricopa.edu/class/bio201/skull/skulltt.htm>

*Best for the Vertebrae and Ribs*

<http://www.gwc.maricopa.edu/class/bio201/vert/vertut.htm>

*-Don't forget to scroll down.*

**Last Plate**