

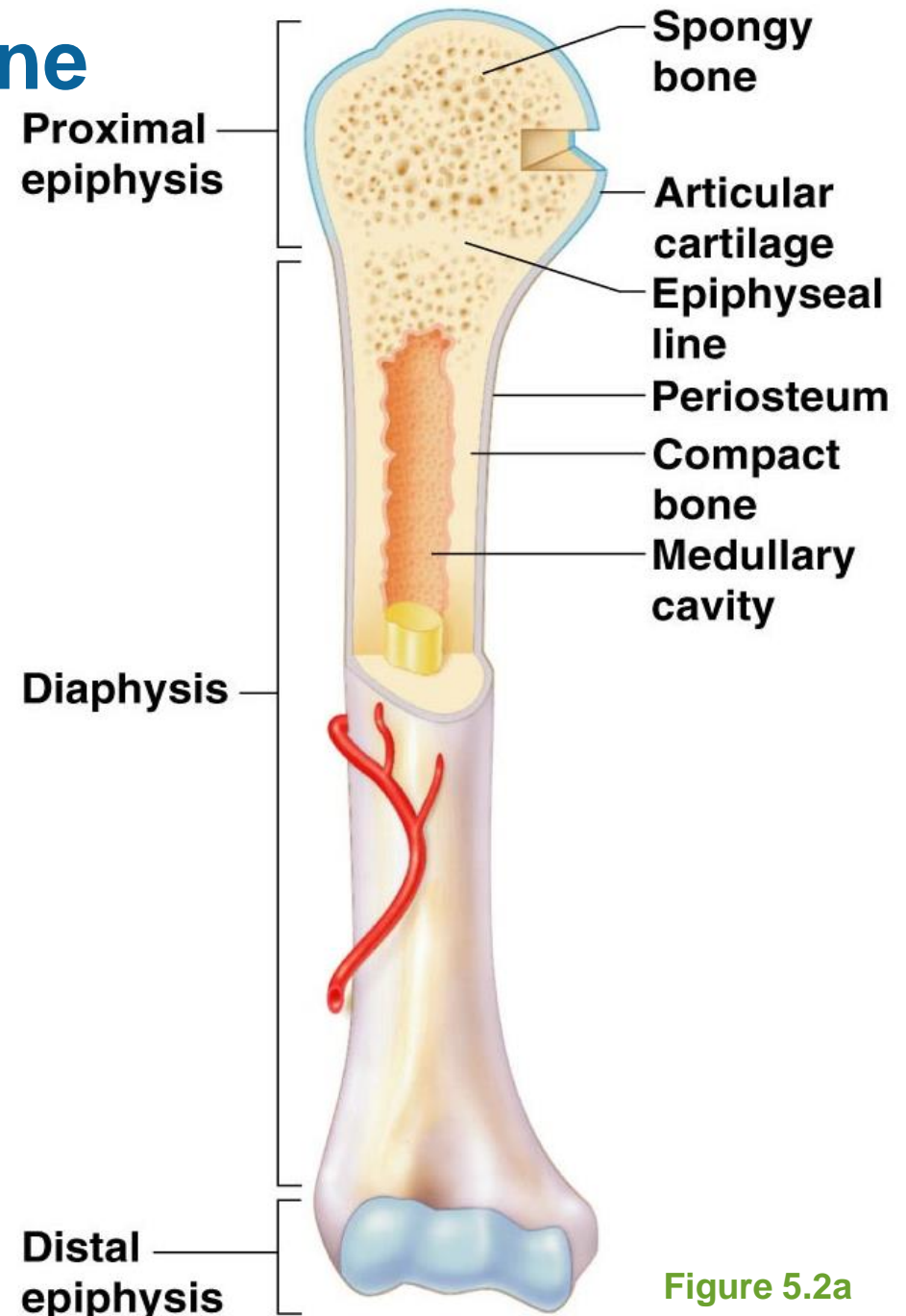
LESSON 2

- **Anatomy of a Long Bone**
- **Bone Markings**

Anatomy of a Long Bone

[Long Bone Anatomy Song](#)

- **Diaphysis**
 - **Shaft** of the bone
 - Composed of **compact** bone
- **Epiphysis**
 - **Ends** of the bone
 - Composed mostly of **spongy** bone

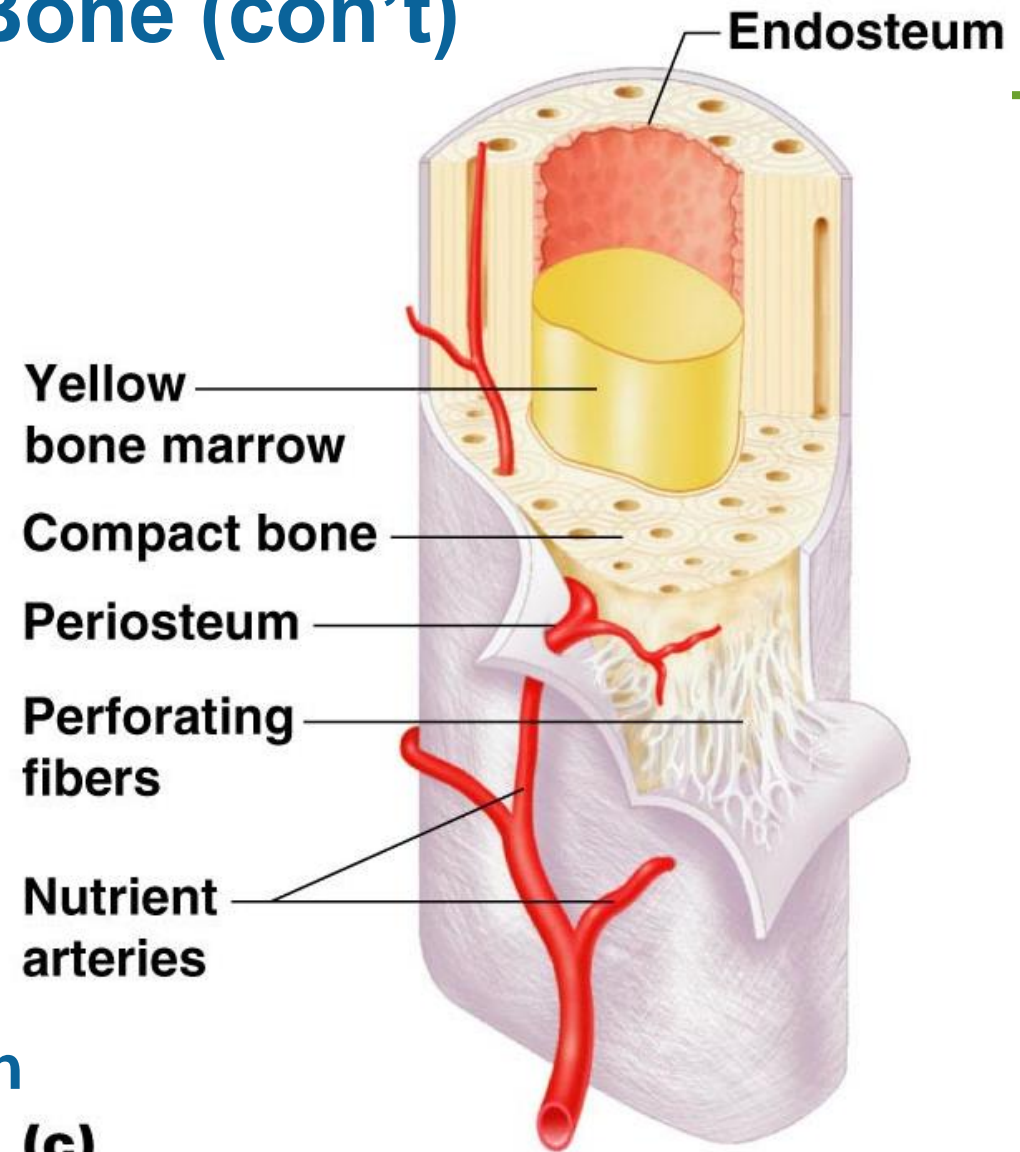


(a)

Figure 5.2a

Anatomy of a Long Bone (con't)

- **Periosteum**
 - **Outside covering** of the diaphysis
 - **Fibrous connective tissue membrane**
- **Sharpey's fibers**
 - **Secure periosteum to underlying bone**
- **Arteries**
 - **Supply bone cells with nutrients & oxygen**

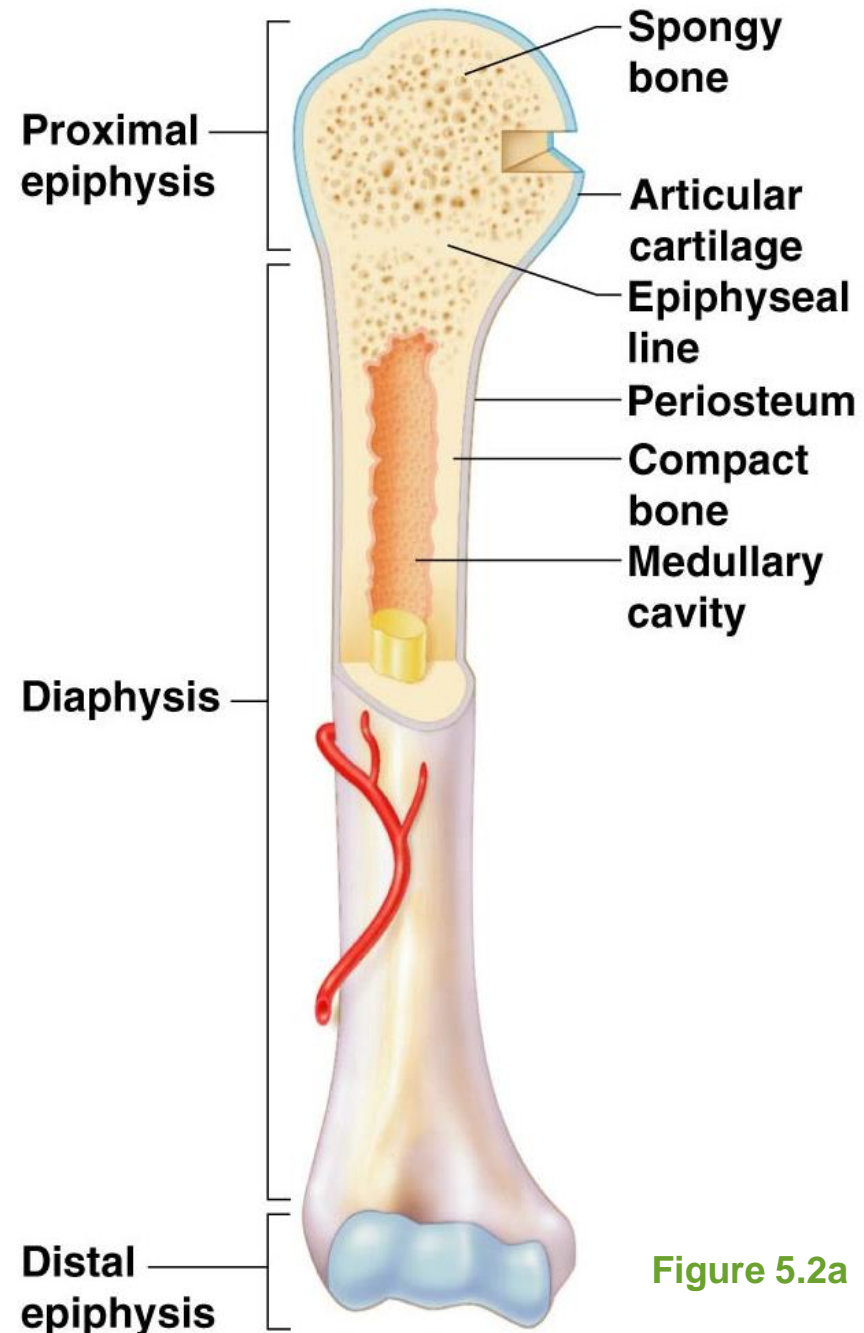


(c)

Figure 5.2c

Anatomy of a Long Bone (con't)

- Articular cartilage
 - Covers the external surface of the **epiphyses** (bone ends)
 - Made of **hyaline** cartilage
 - Decreases **friction** at joint surfaces



(a)

Figure 5.2a

Anatomy of a Long Bone (con't)

- **Epiphyseal plate**
 - Flat plate of hyaline cartilage seen in **young, growing bone**
- **Epiphyseal line**
 - Remnant of the epiphyseal plate
 - Seen in **adult bones**

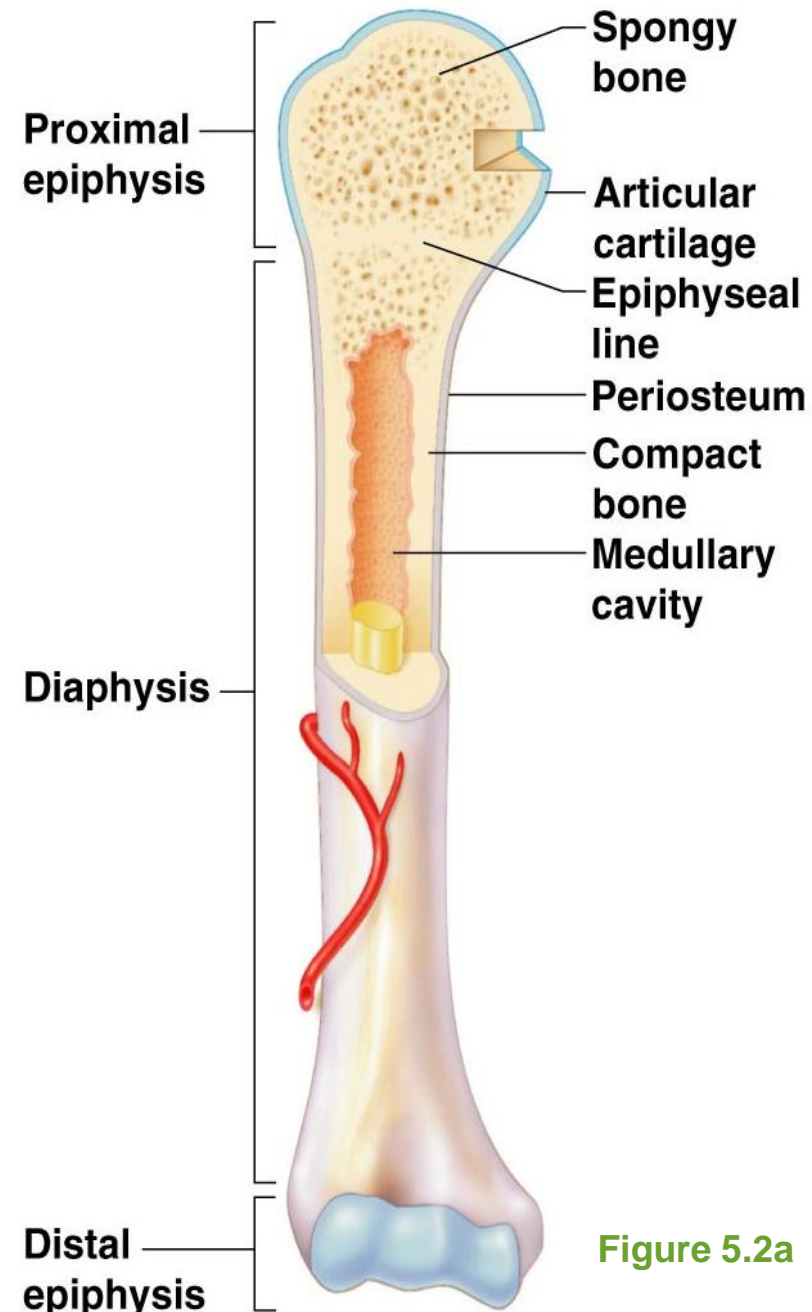


Figure 5.2a

Anatomy of a Long Bone (con't)

[Video – Dissected Long Bone Anatomy of a Deer](#)

- **Medullary cavity**
 - **Cavity inside of the diaphysis (shaft)**
 - **Contains yellow marrow (mostly fat) in adults**
 - **Contains red marrow (for blood cell formation) in infants**

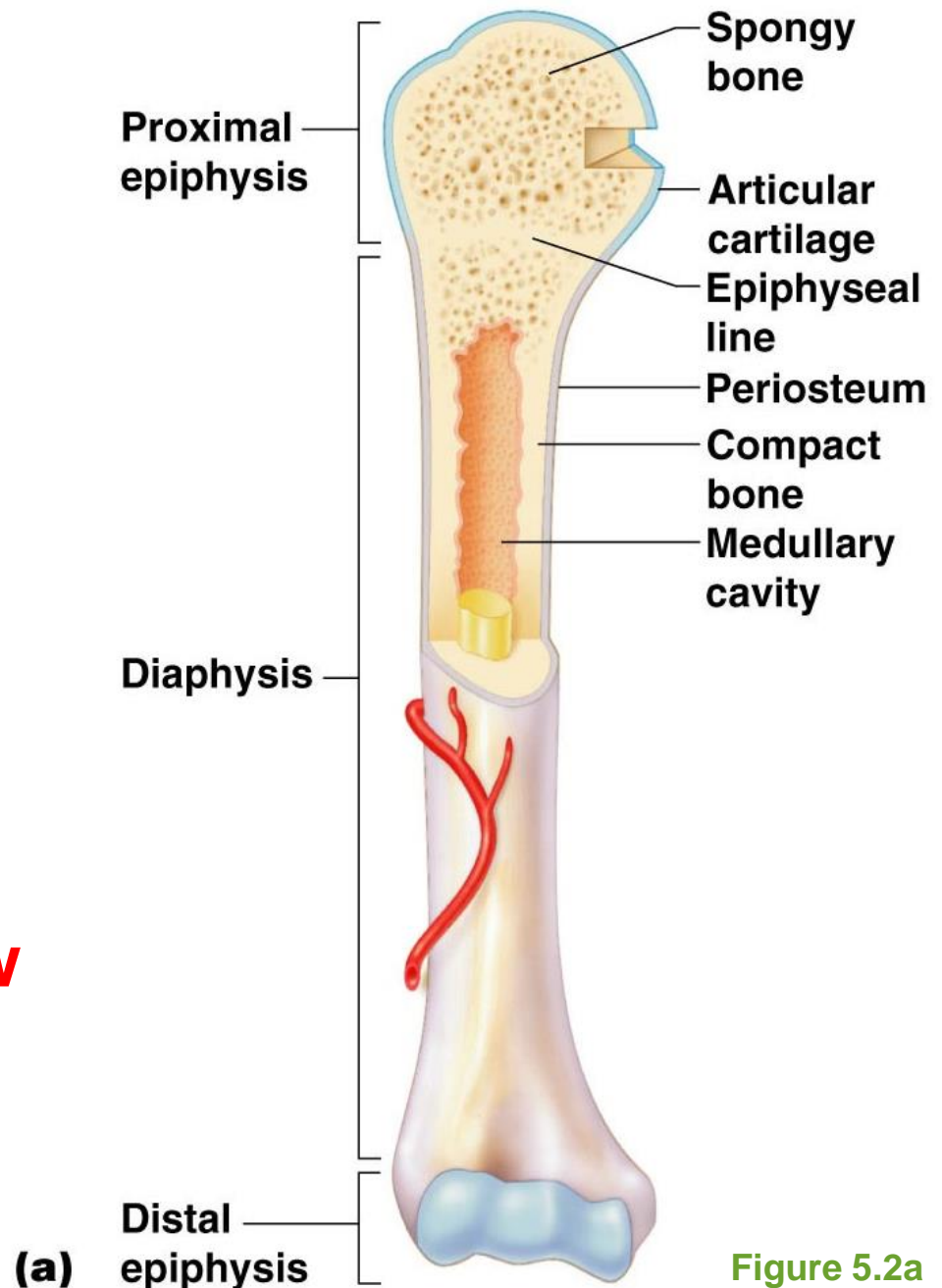
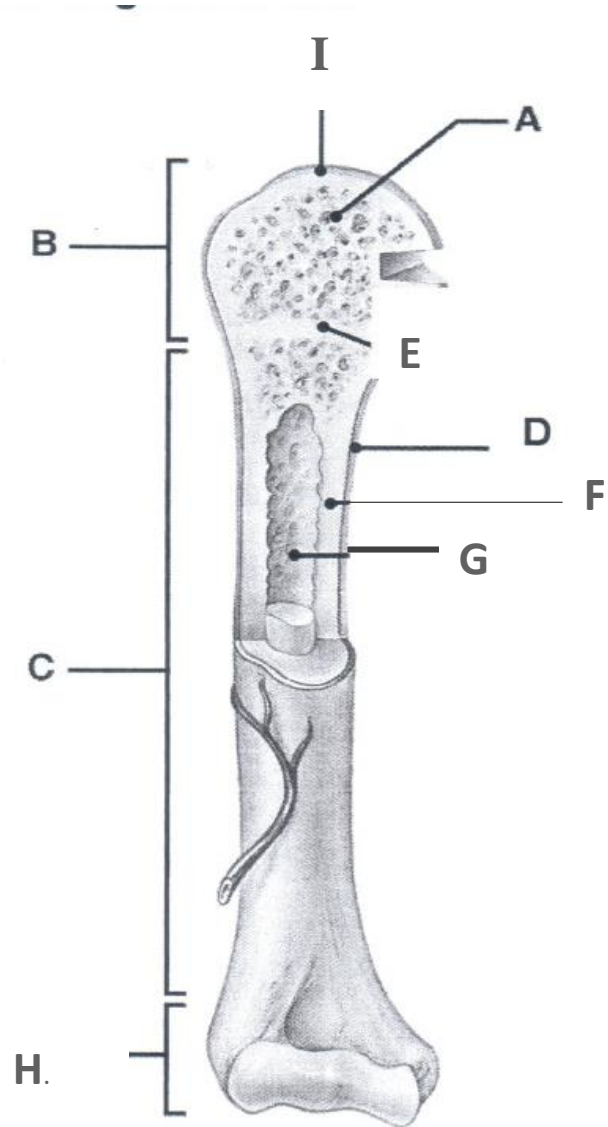


Figure 5.2a

Anatomy of a Long Bone (con't)



ANSWERS:

A – Spongy bone

B – Proximal epiphysis

C – Diaphysis (shaft)

D – Periosteum

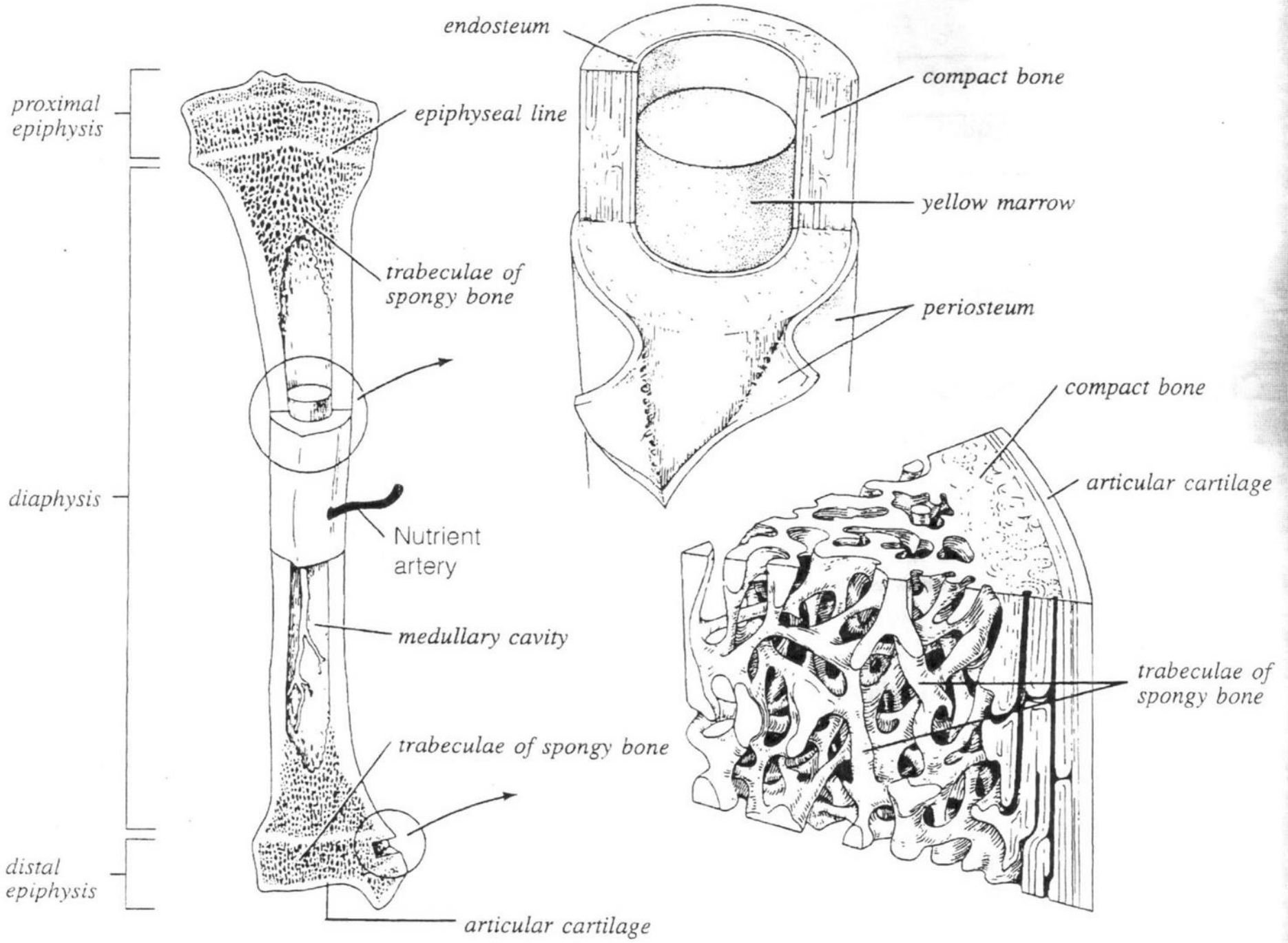
E – Epiphyseal line

F – Compact bone

G – Medullary cavity

H – Distal epiphysis

I – Articular cartilage



Bone Markings

- **Surface features of bones**
 - Sites of attachments for **muscles, tendons, and ligaments**
 - Passages for **nerves and blood vessels**
- **Categories of bone markings**
 - **Projections or processes - grow OUT from the bone surface**
 - **Depressions or cavities – indentations IN the bone surface**

Bone Markings (con't)

TABLE 5.1

Bone Markings

Table 5.1 (1 of 2)

Name of bone marking **Description**

Illustration

Projections That Are Sites of Muscle and Ligament Attachment

Tuberosity Large, rounded projection; may be roughened

Crest Narrow ridge of bone; usually prominent

Trochanter (tro-kan'ter) Very large, blunt, irregularly shaped process (the only examples are on the femur)

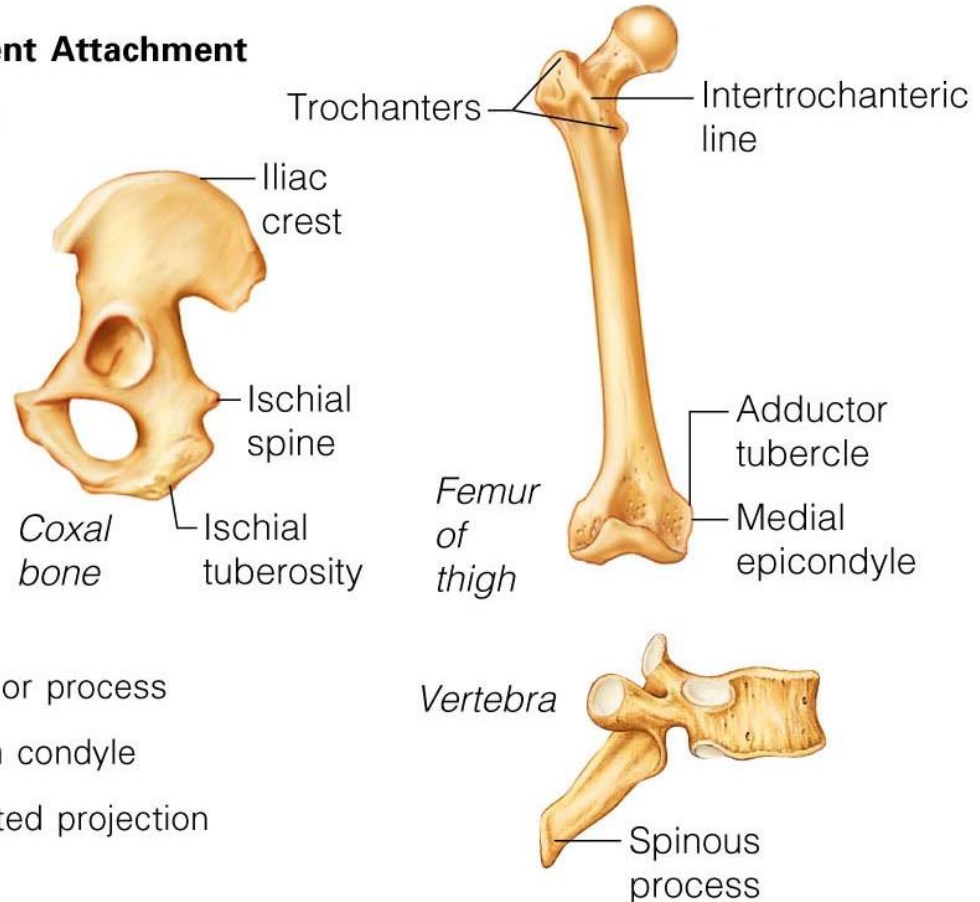
Line Narrow ridge of bone; less prominent than a crest

Tubercle (too'ber-kl) Small, rounded projection or process

Epicondyle Raised area on or above a condyle

Spine Sharp, slender, often pointed projection

Process Any bony prominence

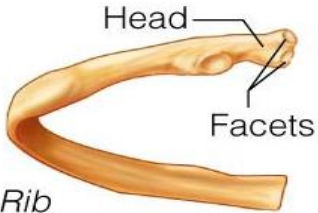
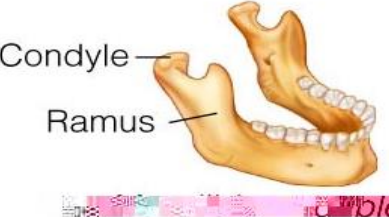
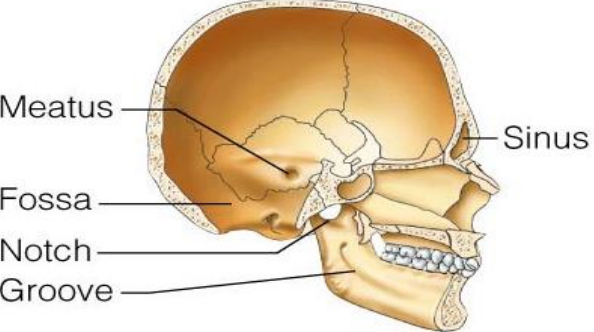
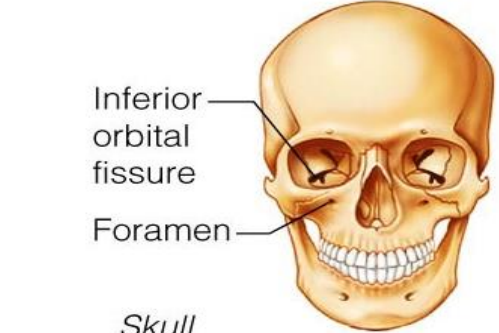


Bone Markings (con't)

TABLE 5.1

Bone Markings (continued)

Table 5.1 (2 of 2)

Name of bone marking	Description	Illustration
Projections That Help to Form Joints		
Head	Bony expansion carried on a narrow neck	
Facet	Smooth, nearly flat articular surface	
Condyle (kon'dīl)	Rounded articular projection	
Ramus (ra'mus)	Armlike bar of bone	
Depressions and Openings Allowing Blood Vessels and Nerves to Pass		
Meatus (me-a'tus)	Canal-like passageway	
Sinus	Cavity within a bone, filled with air and lined with mucous membrane	
Fossa (fos'ah)	Shallow, basinlike depression in a bone, often serving as an articular surface	
Groove	Furrow	
Fissure	Narrow, slitlike opening	
Foramen (fo-ra'men)	Round or oval opening through a bone	