

Long Bone Dissection Lab

PLEASE DO NOT WRITE ON THIS!

Worth 35 points!

Purpose: To familiarize the student with structures characteristic of a long bone.

Materials:

Beef bone sawed in half longitudinally

Dissecting instruments Dissecting pans

Procedure:

1. Examine each specimen. Locate and identify the following structures.
Articular cartilage Medullary Cavity
Spongy Bone Periosteum
Compact Bone Red Marrow
Diaphysis Epiphysis
Yellow Marrow Volkman's Canals
2. With your forceps, remove a portion of the *periosteum* from the bone's diaphysis. Isolate blood vessels within the *periosteum* and locate the *Volkman's canal* into which the vessels lead.
3. Draw and label ALL the above structures. Please don't scribble!
4. Complete the chart below.

LONG BONE STRUCTURE	FUNCTION PERFORMED BY THIS STRUCTURE	CHARACTERISTICS WHICH MAKE THE STRUCTURE SUITABLE FOR THE FUNCTION NAMED

OSTEOPOROSIS

Instructions: 1) Read the passage. 2) Use your text for help.

The body uses calcium for things other than building bones: for regulating the cells metabolic activity, helping the muscles to contract, and helping to control heart rate. Calcium is transported through the circulatory system. If the concentration of calcium in the blood gets too low, the osteoclasts release acids which dissolve the calcium in bone which is then released into the blood. If calcium is removed faster than it is replaced, the bones are weakened and are susceptible to fracture.

The fragile bones and the humped back that elderly persons (Dowager's Hump) – especially women – sometimes are caused by a gradual loss of calcium in bones. This condition is called *osteoporosis*.

Although the signs may not appear until old age, calcium loss begins early in life. To help your skeleton to remain strong as you grow older, it is important for you – NOW – to eat a balanced diet that includes nonfat dairy, green leafy vegetables and citrus fruits. You will be building a storehouse of calcium for the future.

Questions: complete sentences would be nice!

1. List four things the body uses calcium for.
2. How is calcium carried through the body?
3. What can happen to your bones if they lose calcium?
4. Give 2 ways to ensure you have enough calcium for all your body's needs?
5. At what age does calcium loss generally begin for women? For men?
6. When should you begin (age) to take precautions against calcium loss?
7. Briefly explain how the body restores the normal levels of calcium in the blood. You should focus your discussion on the hormonal mechanism.
8. How is it possible for the bones to lose more calcium than they gain? Be specific!
9. Quite often, an elderly woman may say, "I was just standing in the middle of the floor when I fell and broke my hip!" Do you think this sequence of events may not be quite what she thinks it was? Explain your answer.