

Module 4 LO6

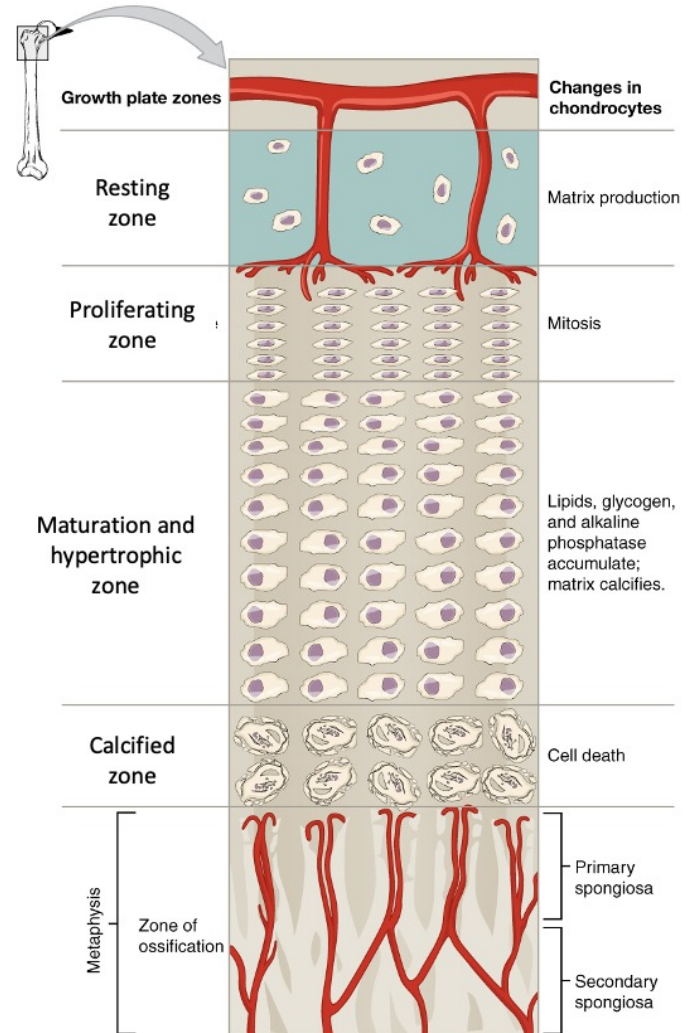
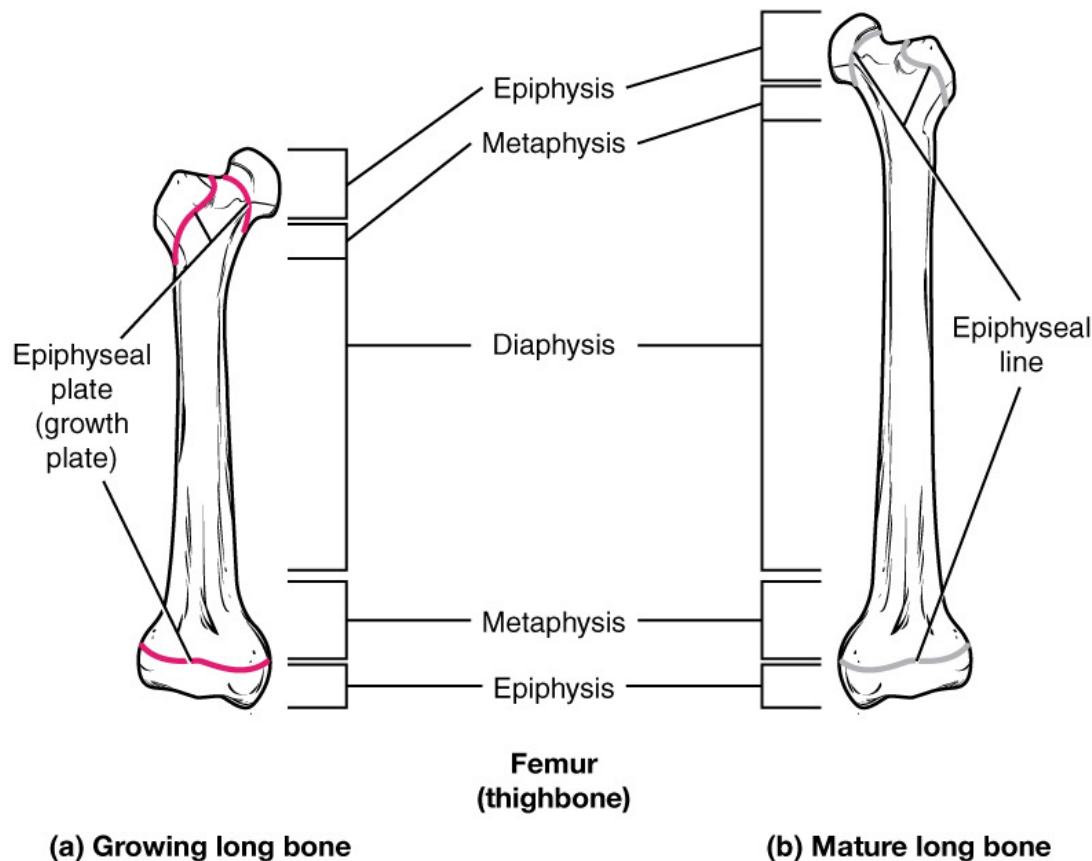
Bone Growth

Dr. Lisa Brinn

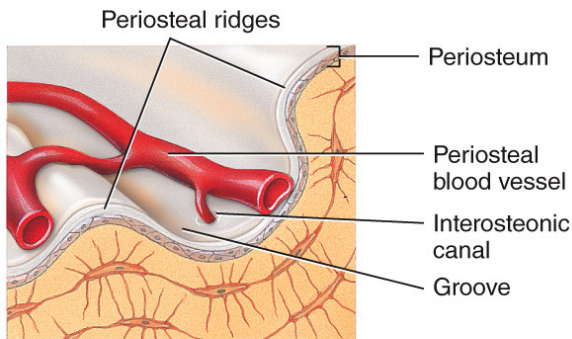
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[Module 4 MLO6 Video Bone Growth](#)

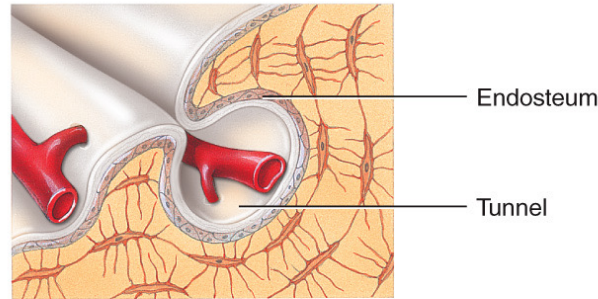
6. Bone Growth in Length



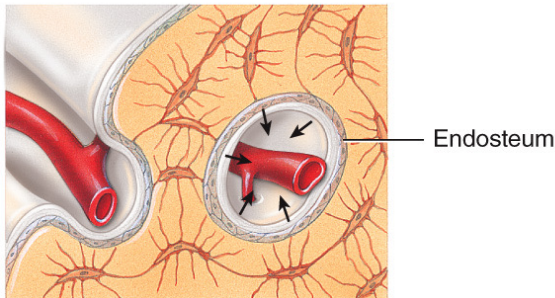
Bone Growth in Thickness



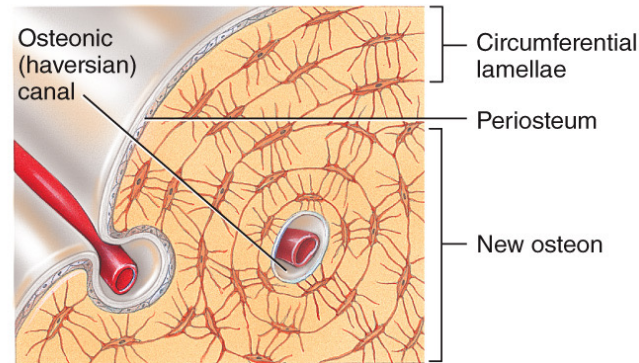
- 1 Ridges in periosteum create groove for periosteal blood vessel.



- 2 Periosteal ridges fuse, forming an endosteum-lined tunnel.



- 3 Osteoblasts in endosteum build new concentric lamellae inward toward center of tunnel, forming a new osteon.



- 4 Bone grows outward as osteoblasts in periosteum build new circumferential lamellae. Osteon formation repeats as new periosteal ridges fold over blood vessels.

(a) Microscopic details

Factors That Affect Bone Growth

- Nutrition
 - Bone growth requires proliferation of chondroblast and osteoblasts
 - Metabolic disorder that affects cell proliferation rate
 - Alteration in collagen production and other matrix components
 - Important vitamins – Vitamin D and vitamin C
- Hormones
 - Pituitary gland – growth hormone
 - Thyroid gland – thyroid hormone
 - Gonads – reproductive hormones