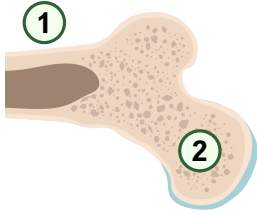


TOPIC: OSTEOPOROSIS: MINERALS AND BONE HEALTH

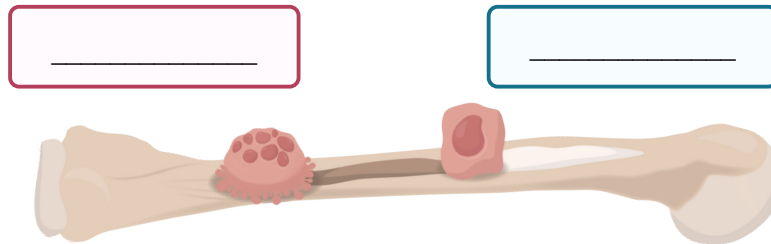
Bone Health

◆ Bones are _____ organs that are constantly being _____.



1. **Cortical** (_____) **bone**: mostly _____ outer layer.
2. **Trabecular** (_____) **bone**: inner layer, many spaces for marrow.

◆ **Bone Remodeling**: process by which old bone is dissolved (reabsorbed) and new bone is built (deposited).



Childhood → 30s	Depositing > _____	Bone density ____.
30s → Old age (esp. in females)	Dissolving > _____	Bone density ____.

PRACTICE

Why does bone density typically decrease later in adulthood?

- People typically eat less calcium and vitamin D as they age.
- During remodeling, cells that deposit bone tend to be less active than those that remove bone as people age.
- Bone remodeling naturally tends to remove more bone than it deposits and bone remodeling does not begin until growth is complete.
- As we age, bone remodeling tends to replace cortical bone with trabecular bone, which is less dense.

PRACTICE

What differentiates cortical bone from trabecular bone?

- Cortical bone is located on the inside of bone, while trabecular bone is found on bone surface.
- Trabecular bone is softer because it is filled with marrow (like a sponge), while cortical bone is more solid.
- Cortical bone has less space within the bone, where trabecular bone is filled with small non-bony spaces.
- Trabecular bone is denser and adds to the strength of the inside of bones, while cortical bone is a thin layer that adds little strength to the bone.

TOPIC: OSTEOPOROSIS: MINERALS AND BONE HEALTH

Osteoporosis

◆ When bone density decreases you get:

▸ **Osteopenia:** loss of bone mass in adulthood.

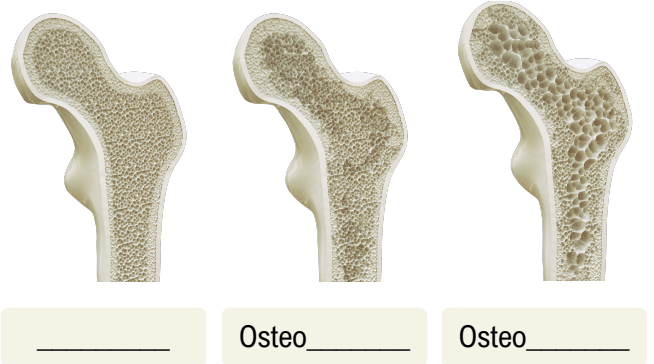
- Almost _____ of Americans 50+.

▸ **Osteoporosis:** severe bone _____; _____ bo-

- ~ _____ % of Americans 50+ & > _____ % females 65+.

- Low _____ post menopause __ risk.

- High risk of complex _____.



Risk Factors	_____; Diet (low ____ & vit D); ____; Sedentary lifestyle
Prevention	Diet rich in Ca (esp. _____ life). Exercise (esp. _____ training)
Treatment	Hormone _____ therapy (HRT); Remineralization Drugs

PRACTICE

Which of the following is not a risk factor for osteoporosis?

- a) A diet low in vitamin A. c) Being female.
b) Lack of physical activity. d) Being over 65 years of age.

PRACTICE

How are osteopenia and osteoporosis related?

- a) Osteopenia is the milder form of bone loss in adulthood that can progress to osteoporosis in old age.
b) Osteopenia is when there is an issue with the cortical bone tissue while osteoporosis is when there is an issue with the trabecular bone tissue.
c) Osteopenia is a disorder related to phosphorous consumption while osteoporosis is a disorder related to calcium consumption.
d) Osteopenia is a disorder of collagen while osteoporosis is a disorder of hydroxyapatite.