FRACTURES AND BONE DISEASE

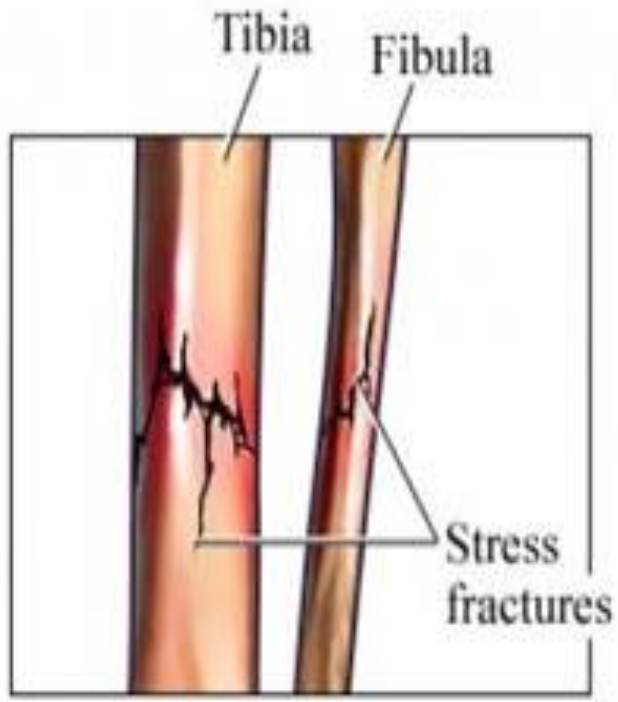
FRACTURES

"Breaks" divided into 3 types:

A) SIMPLE - no separation of bone
B) COMPOUND (OPEN) - breaks into separate pieces
C) COMMINUTED - shattered into many pieces

STRESS FRACTURES

Tiny cracks caused by a rapid increase in activity or when athletes switch training surfaces or wears footwear with improper cushioning



Why do some people tend to break bones much easier?

- Osteogenesis imperfecta (brittle bone disease that causes weakening of the bones)
- Weak muscles
- Low bone density

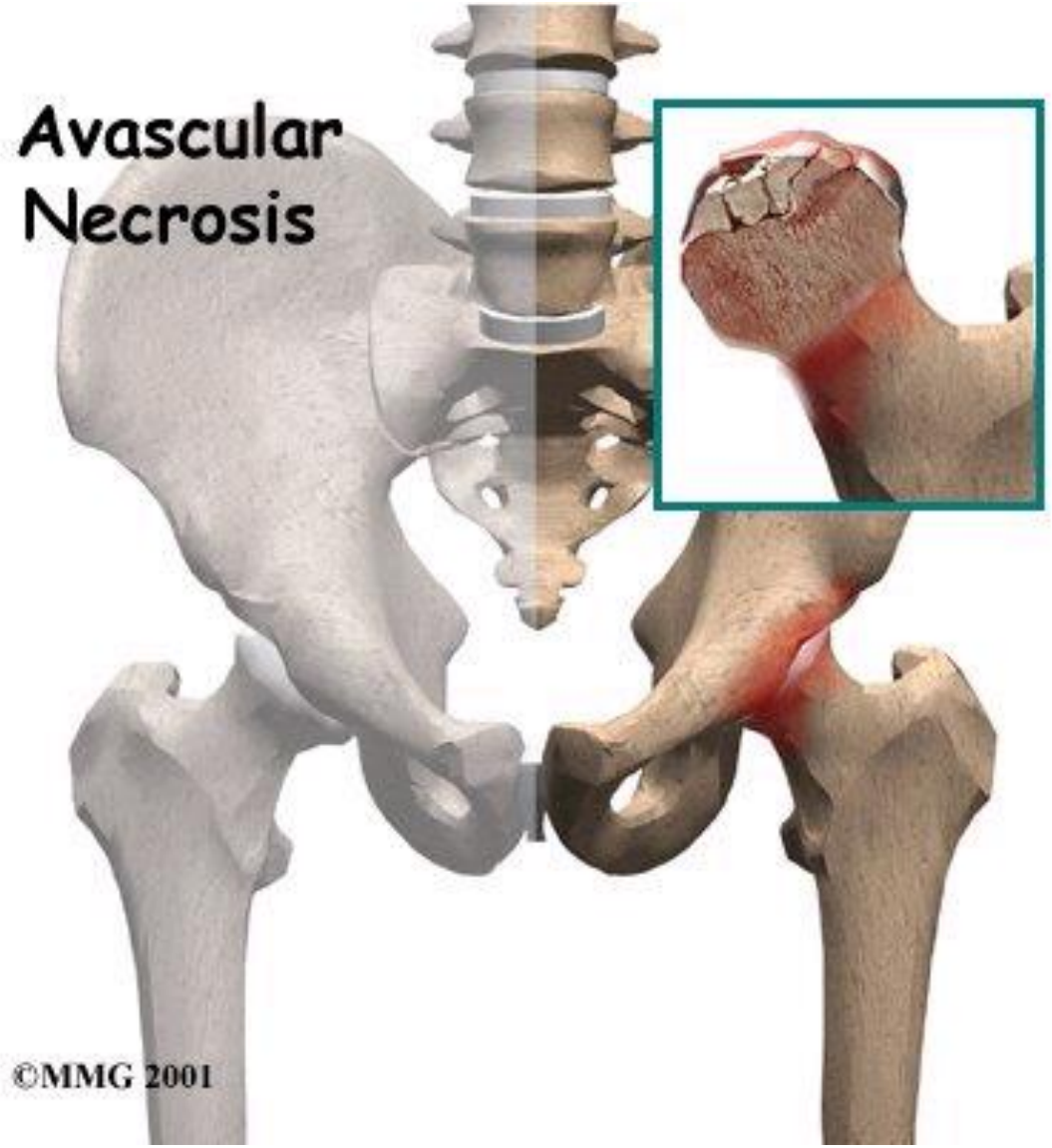
Shin Splints (Medial Tibial Stress Syndrome)

- Pain usually occurs on the medial side of the tibia
- Inflammation of the tendons, bone tissue and muscles around the tibia such as the *Anterior tibialis, Posterior tibialis, Gastrocnemius, Soleus*
- Caused by overuse
- If left untreated they can develop into stress fractures
- Continuous stress of the lower leg prevents the bone from repairing itself

Causes of Shin Splints

- an anatomical abnormality (such as flat foot syndrome)
- muscle weakness in the thighs or buttocks
- lack of flexibility
- improper training techniques

AVS (Avascular Necrosis)

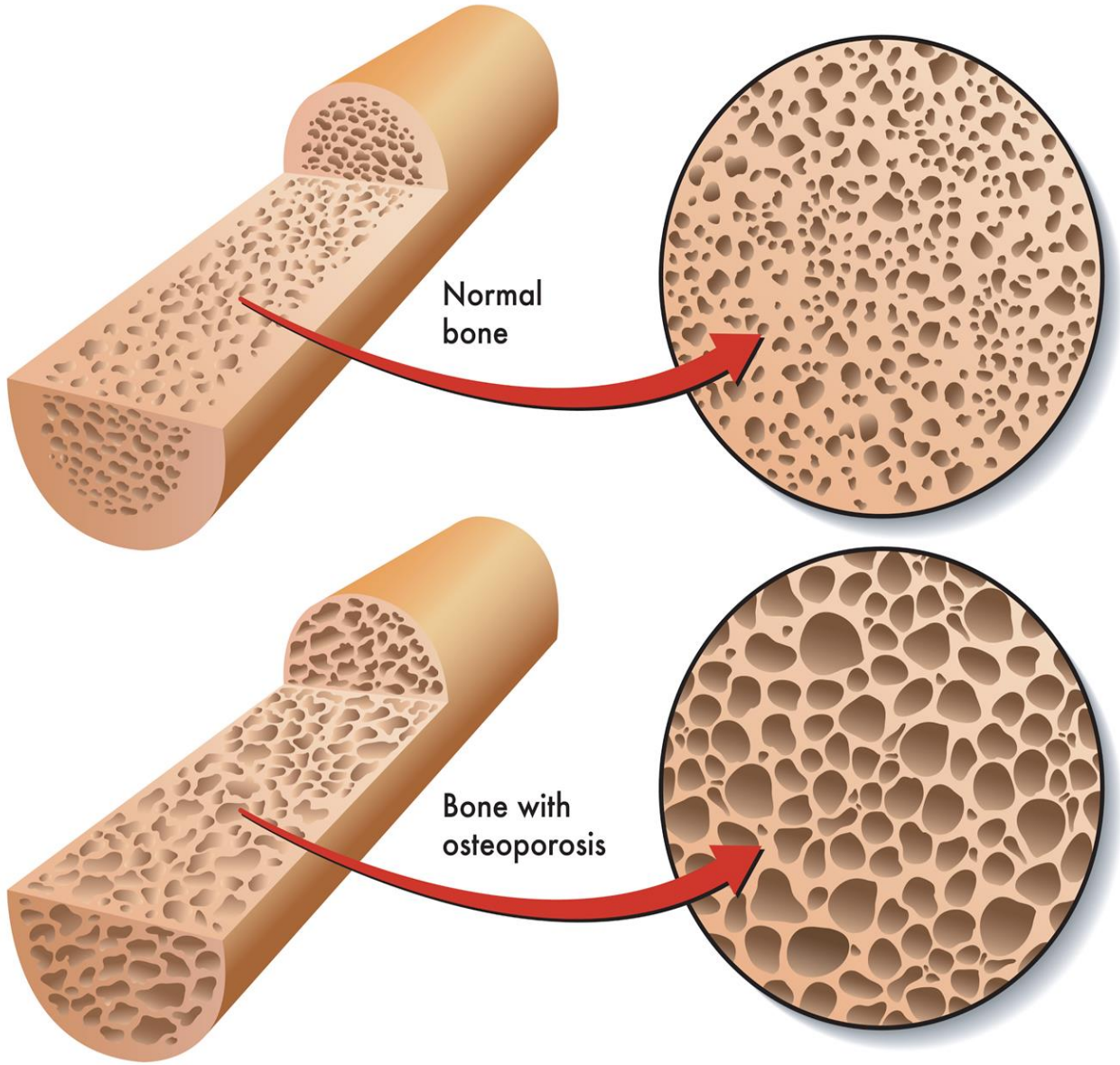


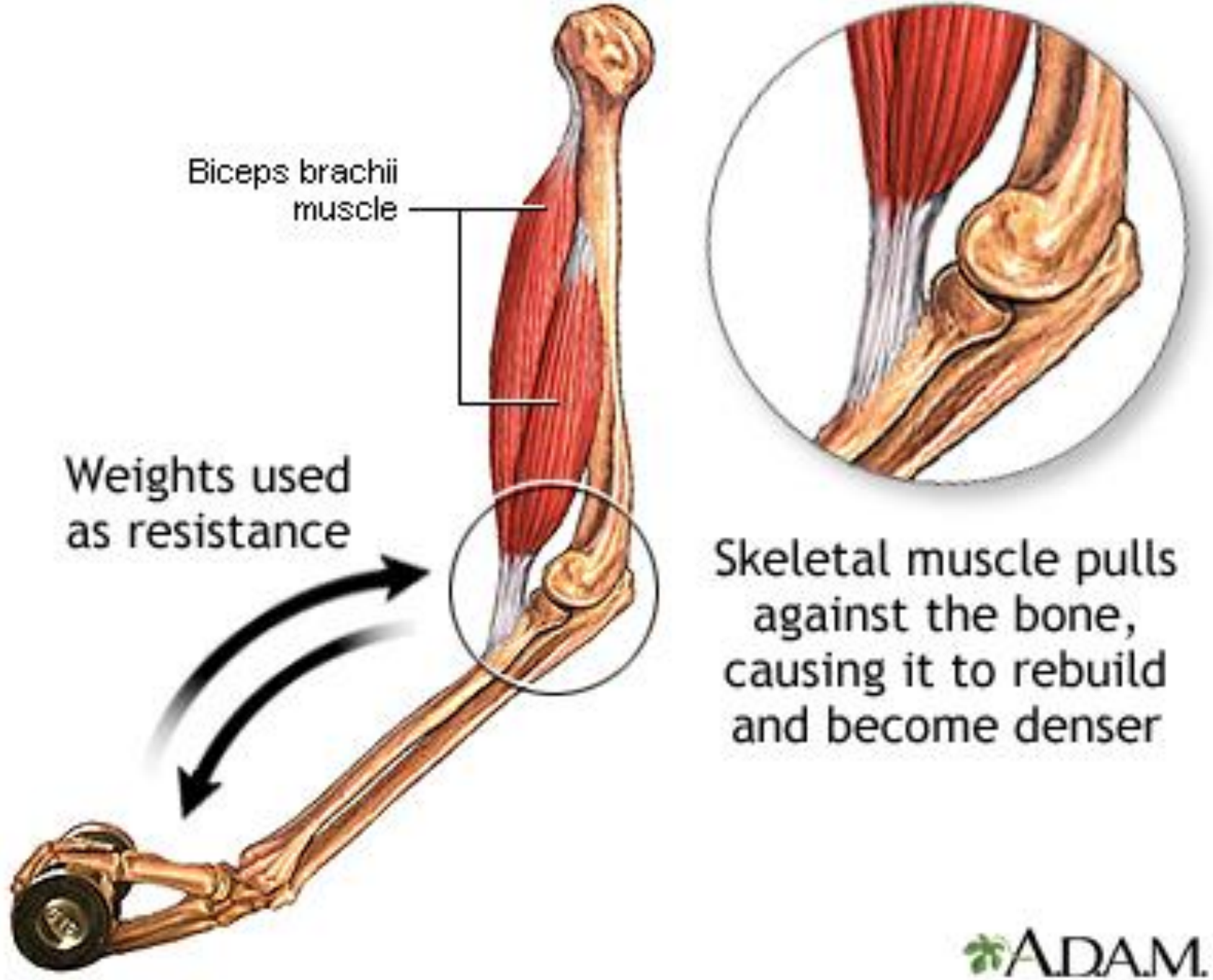
WHAT IS AVN?

- Dislocation or fracture of the femur
- This disrupts the blood supply the bone
- With no blood supply, the bone will eventually die
- This causes the bone to collapse
- Loss of joint function

OSTEOPOROSIS

- Deterioration of bone mass
- Leads to more susceptibility of bone fractures
- silent disease




Biceps brachii muscle
Weights used as resistance
Skeletal muscle pulls against the bone, causing it to rebuild and become denser
A.D.A.M.

OSTEOPOROSIS

HOW CAN I PREVENT EARLY ONSET OF THIS?

1. A balanced diet rich in calcium and vitamin D
2. Weight-bearing exercise
3. A healthy lifestyle
4. Bone density testing and medication when needed

Osteoarthritis

- Caused by mechanical stress and joint not able to repair itself
- Stress caused from - excess body weight
  - bone misalignment (congenital or pathogenic)

FOP (Fribrodysplasia ossificans progressiva)

What is FOP?

- Extremely rare genetic disorder
- Muscle and connective tissue such as tendons and ligaments are replaced by bone
- Causes progressive extra bone formation
- This affects joint movement (limited mobility)
- extra-skeleton