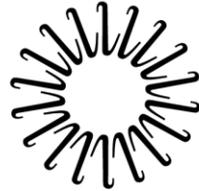


# Osteoporosis and Posture



## **Lifespan Cardiovascular Institute**

**Rhode Island Hospital • The Miriam Hospital  
Newport Hospital**

*Delivering health with care.®*

Center For Cardiac Fitness  
Pulmonary Rehab Program  
The Miriam Hospital

# What is Osteoporosis?

- Osteoporosis is a metabolic bone disease that effects the strength of bone making it weak and brittle
- Normal bone has cells that build up the bone and cells that break down or “Remodel” the bone. Osteoporosis results when there is an imbalance between these cell types

# Normal Bone

- Osteoblasts build up bone
- Osteoclasts break down the bone
- We build up bone mass primarily in the first 3 decades of our life
- Bones need resistance or weight bearing to form properly

# Risk Factors for Osteoporosis

- Gender female>male
- Race/family history: Caucasian, Asian, Hispanic heritage more prevalent. Family history of low weight or slight build
- Age: lower estrogen in women, lower testosterone in males
- Medications: Main consideration for People with pulmonary disease: Prednisone/steroid use

# Risk factors-continued

- Other diagnoses: hyperthyroid, DM, RA, Celiac or Crohn's Disease
- Smoking: generates free radicals in the body that attack the immune system, upsets hormone levels that can affect osteoblasts (bone building cells)
- Sedentary lifestyle: bone need some weight bearing to form properly.

# Nutritional risk factors

- Lack of Calcium/Vit D
- Excessive alcohol: blocks absorption of calcium and interferes with Vit D production
- High Sodium diet: research shows that people with high sodium diet tend to lose more  $\text{Ca}^+$
- High Soda intake: phosphoric acid in the soda tends to increase excretion of  $\text{Ca}^+$  in the urine
- High caffeine intake: leaches calcium from the bone

# Which types of exercise are best?

- Weight bearing exercises are most important
  - Walking
  - Stair climbing
  - Using weights or rubber bands for exercise
  - Core strengthening
    - Abdominal exercises
    - Back exercises
    - Stretches that promote good posture!
  - Swimming is a great way to exercise, but does not promote strong bones-if you enjoy swimming-add some weight training on opposite days