



**CHRISTIANA CARE**  
**HEALTH SYSTEM**

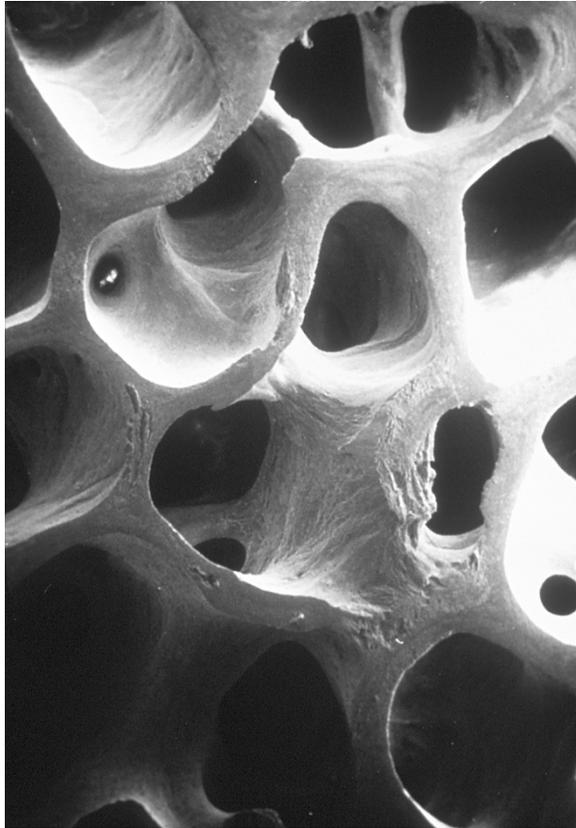
**Strong Bones for Life**

# Objectives

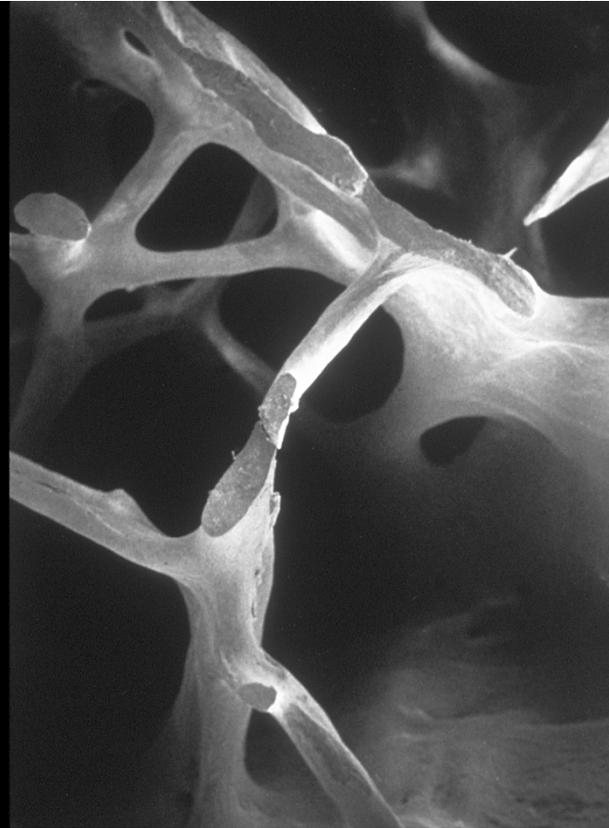
- Discuss screening and diagnosis of osteoporosis
- Define a fragility fracture
- Discuss risk factors for osteoporosis
- Discuss Vitamin D and Calcium Supplementation



# What is osteoporosis?



Normal bone



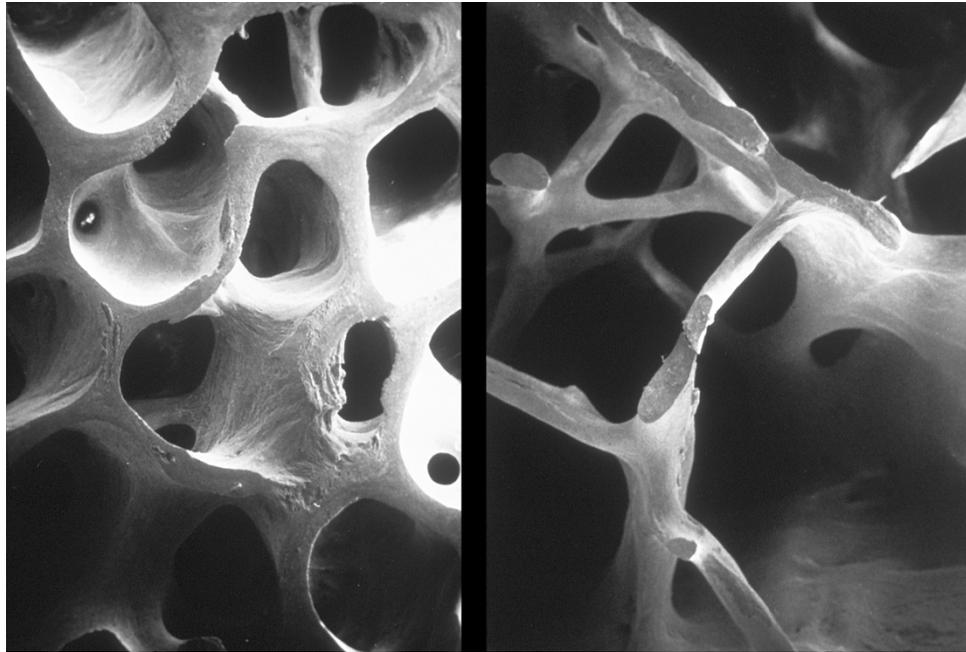
Osteoporosis



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# What is low bone density?

- Low bone density (osteopenia) is bone density that is not normal but not severe enough to be considered osteoporosis
- Osteoporosis is severe bone loss with increased risk of fracture



# How to Diagnose: *Bone densitometry (DXA)*

- Bone Density testing (DXA) takes measurements of the hip and lower spine
  - Results will tell if the bone density is normal, low bone density or osteoporotic.
  - Safe, easy and quick (about 15 minutes)



# Who should be tested?

- Women age 65 or older
- Men age 70 or older
- Postmenopausal women or men age 50 or older with risk factors present for accelerated bone loss
- Fragility fracture



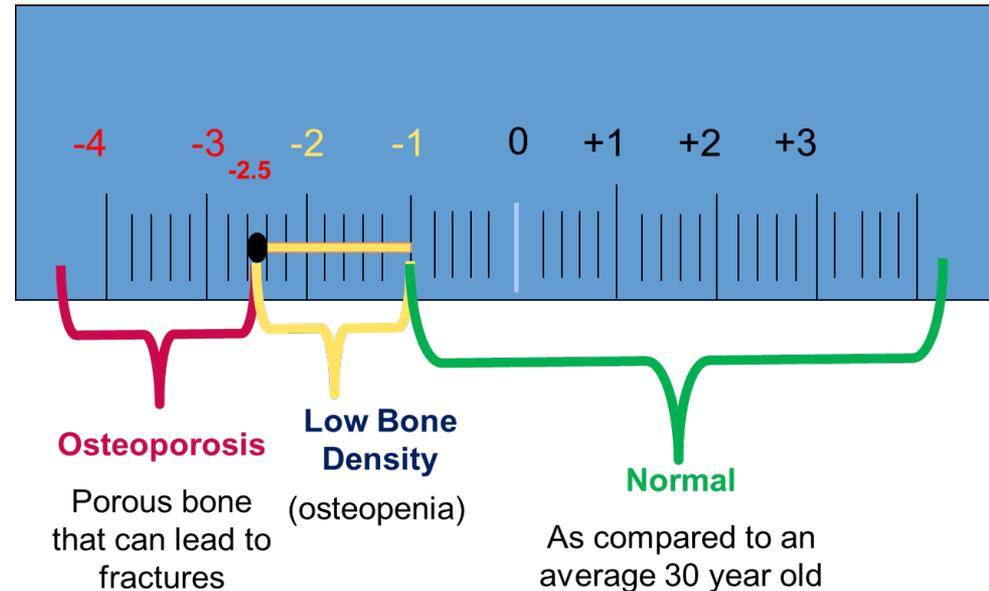
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# What is osteoporosis?

## *A bit more technical*

***Bone density will tell us if the bone is:***

- Normal bone (T score  $\geq$  or equal to -1)
- Osteopenic: defined as a T-score of -1.0 to -2.5.
- Osteoporotic: defined as a bone density less than or equal to -2.5)



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# Osteoporosis: *Medical Impact*

- Very common
  - An estimated 10 million Americans have osteoporosis
- An estimated 2 million individuals suffer a fracture caused by bone disease annually
- 20% of hip fracture patients require long term care; only 40% fully regain their pre-fracture level independence



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# *Osteoporosis: A silent disease*

- Low bone density and osteoporosis do not have symptoms
- Many patients don't even know they have osteoporosis until they sustain a fracture

***Why screening is so important!***



# Fragility Fracture: *Definition*

***Fractures that occur from a fall from a standing height or less; or happen without a significant trauma.***



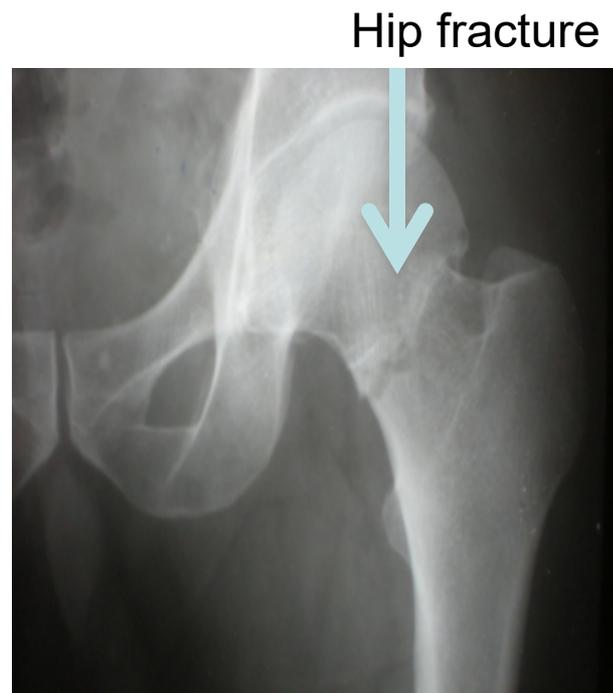
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# Fragility Fracture

- Fragility fractures occur most commonly in spine, hip, and wrist (forearm)



Compression spine fracture



# Fragility Fractures:

## *Prior fracture is a risk for another one*

- Risk of future fracture is increased 1.5 to 9.5 times following a fragility fracture
  - This means a cascade of fractures are more likely to happen (1.5 – 9.5 X's more likely) after a person sustains their first fragility fracture



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# Risk Factors for Osteoporosis: *Diseases*

- Alcoholism
- Disordered Eating
- Cancers
- Celiac Disease
- Crohn's Disease
- Cushing's Disease
- Diabetes Type 2
- Hypogonadism
- Hyperthyroidism
- Liver Disease (interferes with Vitamin D absorption)
- Malabsorption
- Rheumatoid arthritis



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# Risk Factors for Osteoporosis: *Medications*

- Anticoagulants (Heparin®)
- Anticonvulsants (Dilantin®)
- Aromatase Inhibitors
- Androgen Deprivation Therapy
- Chemotherapy drugs
- Cyclosporine
- Lithium
- Methotrexate
- PPIs (Nexium, Prilosec)
- SSRIs (Prozac, Zoloft, Paxil)
- Oral Steroids
- Tamoxifen (premenopausal use)
- Thyroxine - high doses (Synthroid®)



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# Risk Factors for Osteoporosis: *Gender*

- Being a women
  - However 1 in 4 men will develop osteoporosis past age 50.
- Women who have missed periods for several months and/or reached menopause.
- Women who reached menopause before 40.



# Risk Factors for Osteoporosis

Things you **can't** change:



- 1 Gender.
- 2 Heredity – body type and size.
- 3 Age.
- 4 Fracture history.
- 5 Medical conditions.
- 6 Medications.



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# Risk Factors for Osteoporosis

Things you **can** change:



- 1 Calcium Consumption (incorporated in diet).
- 2 Vitamin D intake.
- 3 Quit smoking.
- 4 Alcohol consumption.
- 5 Physical activity.
- 6 Posture.
- 7 Low body weight (BMI <20).
- 8 Some medications.



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# When should medication be considered?

Postmenopausal woman and men age 50 or older with:

- Fragility fracture
- Bone density T-score  $\leq -2.5$
- Some patients who have low bone density and have significant risk factors for accelerated bone loss
  - Your doctor will determine whether treatment is appropriate



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# Vitamin Supplementation: *Calcium and Vitamin D*

- ***Adequate calcium and vitamin D intake are the building blocks of healthy bone***
  - 800-1000IU daily of vitamin D, if blood levels are normal, is currently recommended
  - Your primary doctor should check your vitamin D levels if you have low bone density.
    - ◆ If the levels are low then higher doses of vitamin D may be needed for a short period of time.



Food	Item	Serving Size	Vitamin D Range
Fatty Fish	Salmon, Cooked	3 oz	400-500 IU
	Sardines, Canned	3 oz	150-250 IU
Dairy	Milk, Fortified with D	1 cup	100-125 IU
Other Foods	Fortified Cereals	1 cup	50-75 IU
	Fortified Juices	½ cup	

# Vitamin Supplementation: *Calcium and Vitamin D*

- ***Adequate calcium and vitamin D intake are the building blocks of healthy bone.***
  - Current recommendations are 1200mg/day of calcium.
    - ◆ Calcium citrate or calcium carbonate - Calcium Citrate absorbed on empty stomach (has less elemental Calcium than carbonate) and Calcium Carbonate absorbed if taken with food (requires stomach acid)
  - Decade long debate on the risk and benefits of calcium supplements.
    - ◆ Recent study demonstrated an increase risk of heart disease .

**The Washington Post**

# Vitamin Supplementation: *Calcium and Vitamin D*

- Dietary calcium is the best way to obtain calcium.
  - Dairy, green leafy vegetables, fortified juices and cereals.
  - American Bone Health “Calcium Rule of 300”

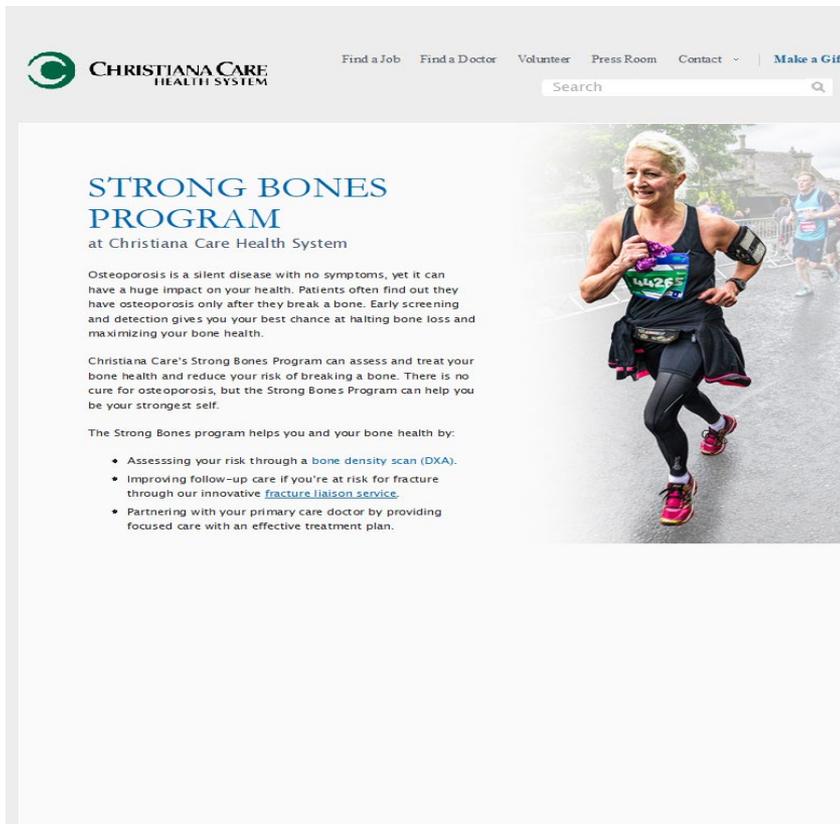


# Weight-bearing exercise

- The best exercise for your bones
  - forces a person to work against gravity.
  - Examples include:
    - ◆ Walking
    - ◆ Hiking
    - ◆ Jogging
    - ◆ Climbing stairs
    - ◆ Tennis
    - ◆ Dancing
    - ◆ Weight training



# Strong Bones Program



The screenshot shows the Christiana Care Health System website. At the top left is the logo, and to its right are navigation links: Find a Job, Find a Doctor, Volunteer, Press Room, Contact, and Make a Gift. A search bar is located below these links. The main content area features the title "STRONG BONES PROGRAM" in blue, followed by "at Christiana Care Health System". Below this is a paragraph explaining osteoporosis as a silent disease. To the right of the text is a photograph of a woman in athletic wear running a race. Below the text is a bulleted list of program services.

**CHRISTIANA CARE HEALTH SYSTEM**

Find a Job Find a Doctor Volunteer Press Room Contact | Make a Gift

Search

## STRONG BONES PROGRAM

at Christiana Care Health System

Osteoporosis is a silent disease with no symptoms, yet it can have a huge impact on your health. Patients often find out they have osteoporosis only after they break a bone. Early screening and detection gives you your best chance at halting bone loss and maximizing your bone health.

Christiana Care's Strong Bones Program can assess and treat your bone health and reduce your risk of breaking a bone. There is no cure for osteoporosis, but the Strong Bones Program can help you be your strongest self.

The Strong Bones program helps you and your bone health by:

- Assessing your risk through a [bone density scan \(DXA\)](#).
- Improving follow-up care if you're at risk for fracture through our innovative [fracture liaison service](#).
- Partnering with your primary care doctor by providing focused care with an effective treatment plan.

For more information or to schedule an appointment, call 302-733-5592 or e-mail [strongbones@christianacare.org](mailto:strongbones@christianacare.org)

# Questions



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