

Protect Your Bones: Approach to Bone Health

Osteoporosis



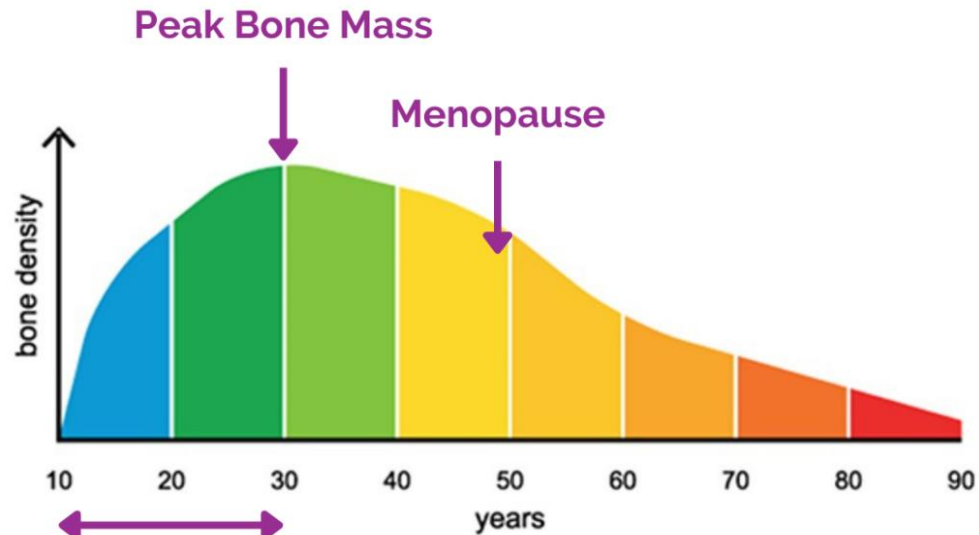
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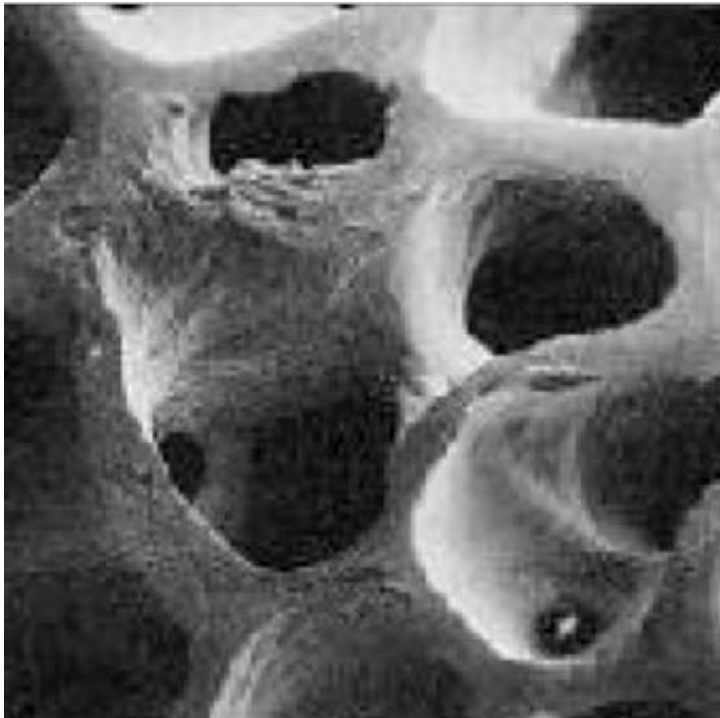
Bone health is important through all stage of life



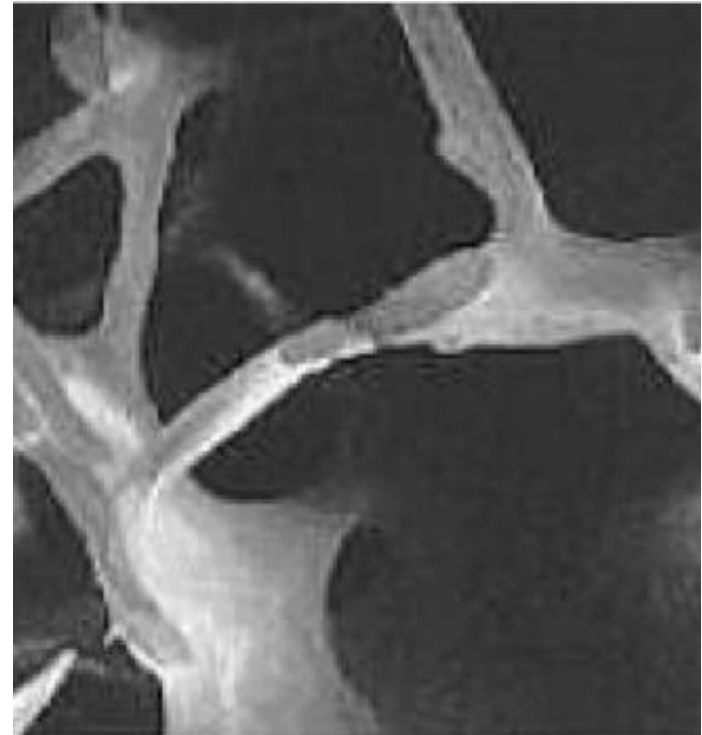
What is Osteoporosis?

A skeletal disorder characterized by compromised *bone strength* predisposing to an increased risk of fracture

Bone strength = Bone density + Bone quality



Normal



Osteoporosis

What are risk factors for developing osteoporosis?

Age and gender.

Family history and genetics.

Lifestyle factors (diet, physical activity, smoking, alcohol use)

Conditions associated with estrogen deficiency

Medical conditions and medications that weaken bones

It is important to consider your risk for osteoporosis

1 in 2 women over age 50 will break a bone from osteoporosis.

A woman's risk of breaking a hip is equal to her combined risk of breast, uterine and ovarian cancer.



What can you do for your bone health?

- Optimizing Calcium and Vitamin D
- Weight-bearing & resistance exercise
- Maintain healthy weight
- Smoking cessation/Alcohol moderation
- Screening for osteoporosis/osteopenia when recommended
- Consider treatment for osteoporosis if indicated

What foods are rich in calcium and vitamin D?



Calcium can come from both dairy and non-dairy sources



How much calcium and vitamin D is recommended?

AGE	CALCIUM (mg)	VITAMIN D (IU)
19-50	1,000 - 2,000	600 - 4,000
51-70	1,200 - 2,000	600 - 4,000
>70	1,200 - 2,000	800 - 4,000

Add supplemental calcium if dietary calcium is below target

Institute of Medicine, 2010

Exercise Recommendations

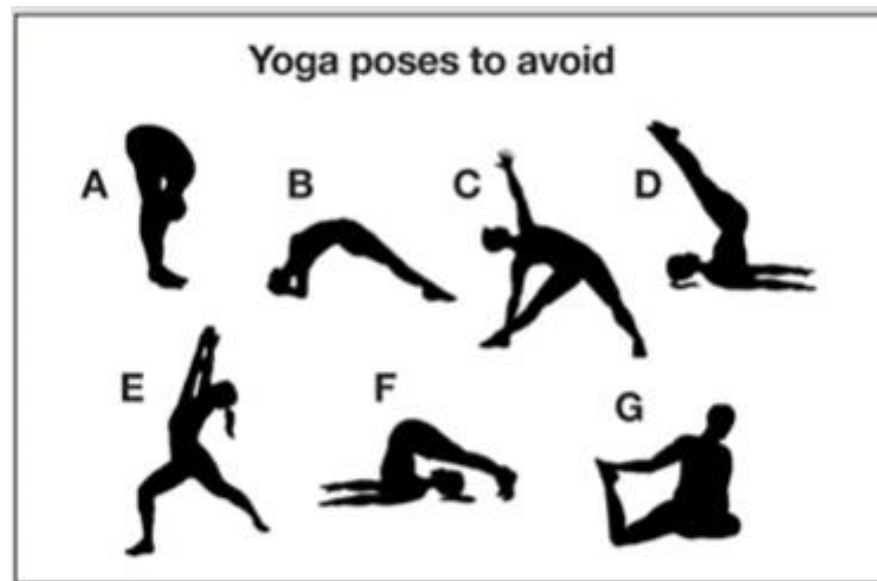
General recommendations for adults:

- **Most people should aim to exercise for 30 to 40 minutes three to four times each week, with some weight-bearing and resistance exercises in the program**

For adults with osteoporosis:

The following types of movements and exercises may not be suitable for people with osteoporosis, particularly if they have spine fractures:

- Sit-ups and excessive bending at the waist
- Twisting movements such as a golf swing
- Exercises that involve abrupt or explosive movement, or high-impact loading





EXERCISE

Exercise is an important step towards protecting your bones



TOO FIT TO FRACTURE

Too Fit to Fracture is a series of exercise recommendations for people with osteoporosis or spine fractures.

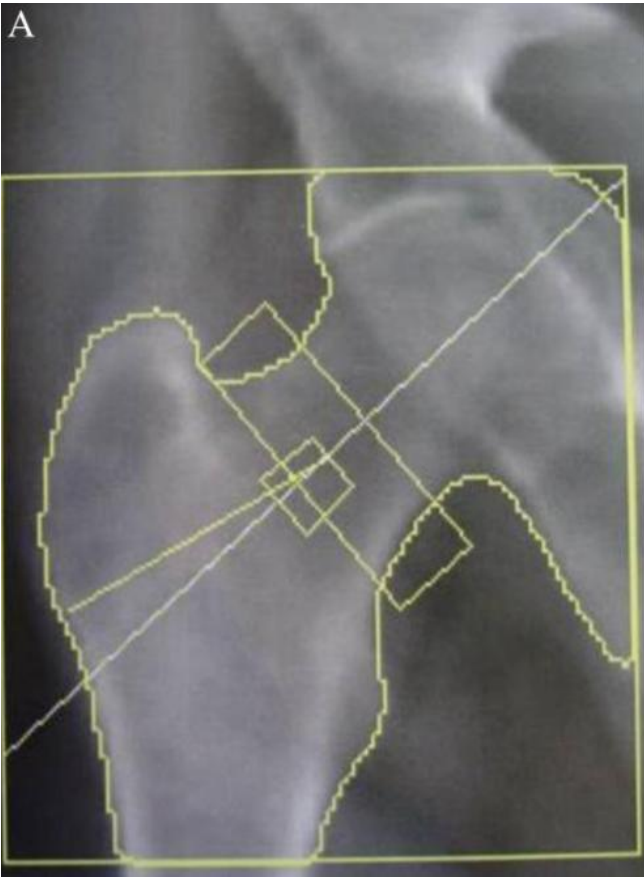
VIEW >

<https://osteoporosis.ca/exercise/>

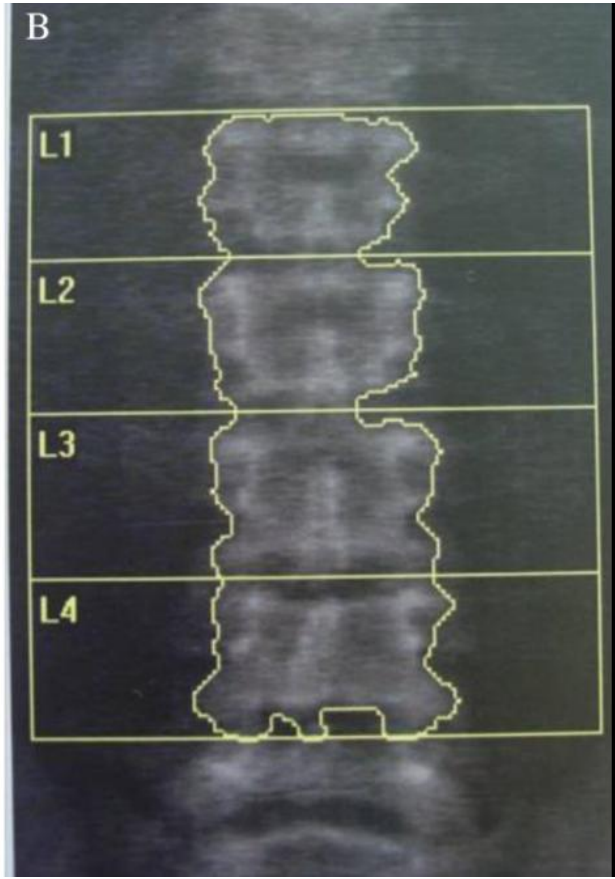
How do we screening for osteoporosis?



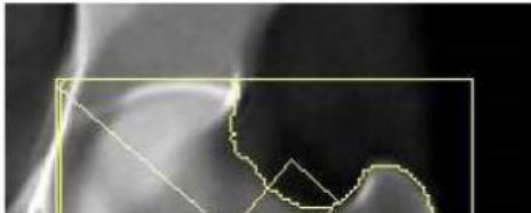
Bone Mineral Density is evaluated by DEXA scan



Hip: Total and Femoral Neck



Lumbar Spine (L1-L4)



Sex: Female
 Ethnicity: White
 Height: 64.5 in
 Weight: 115.0 lb
 Age: 61

DXA Results Summary:

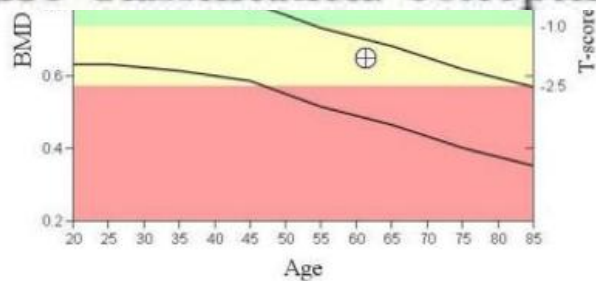
Region Area BMC BMD T-score PR Z-score AM

DXA Results Summary:

Region	Area (cm ²)	BMC (g)	BMD (g/cm ²)	T - score	PR (%)	Z - score	AM (%)
Neck	5.14	3.34	0.649	-1.8	76	-0.5	93
Troch	11.79	6.68	0.567	-1.4	81	-0.4	93
Inter	17.92	15.03	0.839	-1.7	76	-0.9	85
Total	34.85	25.04	0.719	-1.8	76	-0.8	88
Ward's	1.14	0.56	0.493	-2.1	67	0.0	100

Total BMD CV 1.0%

WHO Classification: Osteopenia



Comment:

All treatment decisions require clinical judgment and consideration of individual patient factors, including patient preferences, comorbidities, previous drug use and risk factors not captured in the FRAX model (e.g. frailty, falls, vitamin D deficiency, increased bone turnover, interval significant decline in BMD).

How is Osteoporosis Defined?

- **Normal**

- T-score ≥ -1.0

- **Low bone mass (“osteopenia”)**

- T-score -1.0 to -2.5

- **Osteoporosis**

- T-score ≤ -2.5

WHO, 2007

When should you be screened for osteoporosis?

- Recommended for postmenopausal women:
 - Aged 65 years and older
 - Earlier than 65 years with history of fragility fracture*

*Fracture occurring with the equivalent of a fall from a standing height or less

- Consider in women under 65 with:
 - Secondary cause of osteoporosis
 - Body weight less than 127 lbs or BMI less than 21 kg/m²
 - History of hip fracture in a parent
 - Current smoker

Bone Density Screening is recommended in patients with breast cancer

Breast cancer treatments can significantly impact bone density by causing bone loss and increasing the risk of osteoporosis and fractures

- Many treatments reduce estrogen levels (e.g. aromatase inhibitors) and can impact the vital role estrogen plays in maintaining bone strength
- Other treatments, such as steroids, are often given with chemotherapy agents and negatively impact bone health
- Some treatments can cause premature menopause

Pharmacologic Treatments for Osteoporosis

- **Anti-resorptive medicines**

- Used to slow bone loss

- **Anabolic medicines**

- Can help to build bone

Pharmacologic Therapy

•Anti-resorptive agents

- Bisphosphonates (Fosamax, Reclast, Zometa)
- Denosumab (Prolia)
- Raloxifene (Evista-same class of medicine as Tamoxifen)

Conclusions

- Osteoporosis is common and impacts about 20% of women in the US where the prevalence increases with age
- It's never too early to think about your bone health
- Lifestyle factors like improving your diet, exercising regularly and maintaining a health weight can have significant impact
- Work closely with your provider for appropriate screening and treatment recommendations

Thank you!

