



# Take Action For Bone Health

## World Osteoporosis Day 2021

# Take Action For Bone Health

**OSTEOPOROSIS**  
LEADS TO **POROUS**  
AND **FRAGILE BONES**  
THAT BREAK WITH LOW  
OR NO TRAUMA.

NORMAL BONE

OSTEOPOROSIS



OSTEOPOROSIS IS  
PAINFUL **ONLY WHEN**  
**A FRACTURE OCCURS.**



## TESTING FOR OSTEOPOROSIS

It is recommended for all men and women aged older than 65 years, but your doctor might request the test earlier if he identifies risk factors that could negatively affect your bone health.

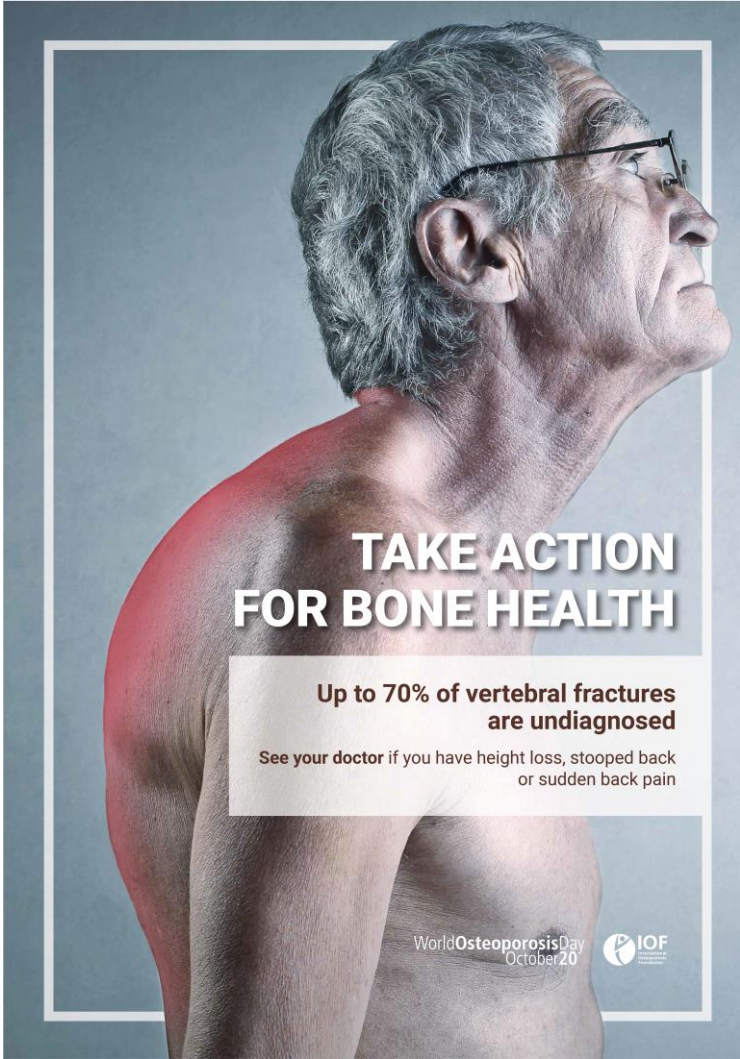


## TO PREVENT OSTEOPOROSIS

Take the following actions to protect your bones at all ages:



# Take Action For Bone Health



## TAKE ACTION FOR BONE HEALTH

**Up to 70% of vertebral fractures are undiagnosed**

See your doctor if you have height loss, stooped back or sudden back pain

WorldOsteoporosisDay  
October 20



# Take Action For Bone Health



**TAKE ACTION  
FOR BONE HEALTH**

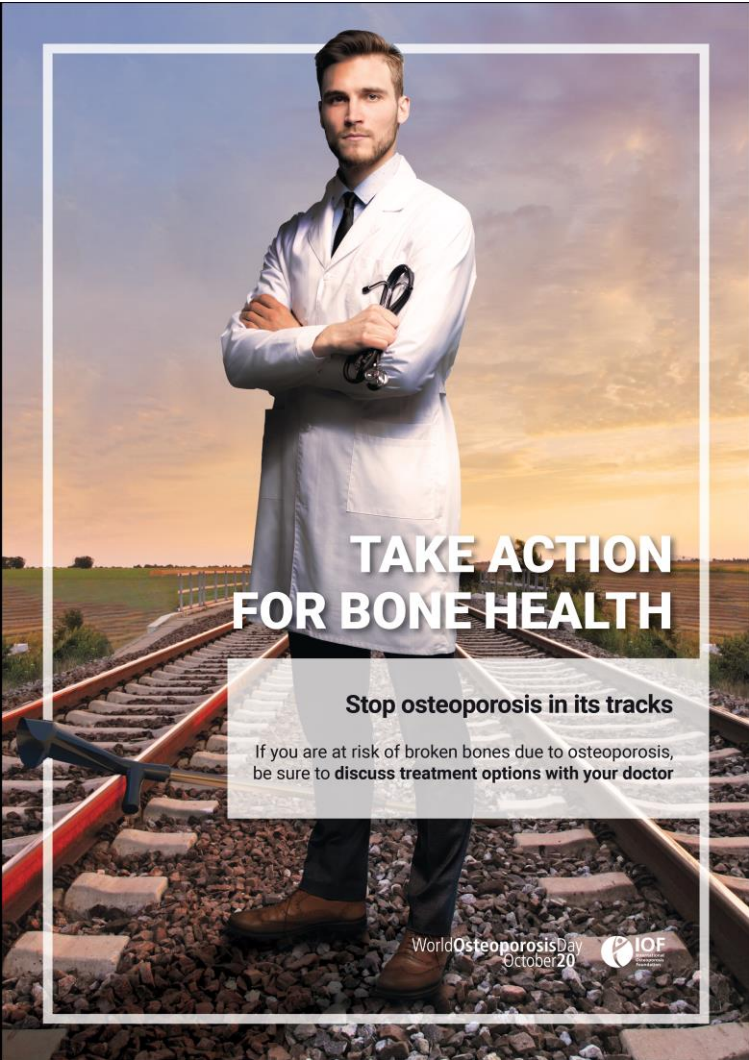
**80% of adults who have broken a bone  
are not tested or treated for osteoporosis**

Broken a bone after age 50?  
Ask your doctor for post-fracture care!

WorldOsteoporosisDay  
October 20



# Take Action For Bone Health



## TAKE ACTION FOR BONE HEALTH

**Stop osteoporosis in its tracks**

If you are at risk of broken bones due to osteoporosis, be sure to discuss treatment options with your doctor

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# Take Action For Bone Health



**TAKE ACTION  
FOR BONE HEALTH**

**Nourish your bones**

Ensure your diet is rich in calcium as well as protein, vitamin D and other bone-healthy nutrients

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# Take Action For Bone Health



## TAKE ACTION FOR BONE HEALTH

**In women, hip fracture is more common than breast cancer**

Could you be at risk of osteoporosis?  
**Ask your doctor for testing**

# Take Action For Bone Health



**TAKE ACTION  
FOR BONE HEALTH**

**90% of broken bones are the  
result of a fall**

If you're prone to falls, ask your doctor for  
a falls risk assessment

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October 20



# That's Osteoporosis: A Family Affair



When help is needed for daily chores

**THAT'S OSTEOPOROSIS**

Broken bones due to osteoporosis have restricted Mary's mobility. She relies on her daughter to help with everyday activities such as shopping and bathing.

 **IOF**  
International  
Osteoporosis  
Foundation

*Our vision is a world without fragility  
fracture in which healthy mobility is a  
reality for all*

**WorldOsteoporosisDay**  
October 20<sup>th</sup>  
[www.worldosteoporosisday.org](http://www.worldosteoporosisday.org)

# That's Osteoporosis: A Family Affair

With her daughter's support and good medical care,  
she's determined to stay fracture-free

**THAT'S OSTEOPOROSIS**

Valentina urges her daughter and others to prevent osteoporosis and fractures through early diagnosis and treatment.



Our vision is a world without fragility  
fracture in which healthy mobility is a  
reality for all

WorldOsteoporosisDay  
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# That's Osteoporosis: A Family Affair

After enduring severe, unexplained back pain,  
she insisted on a bone density scan



**THAT'S OSTEOPOROSIS**

It was a long and difficult journey before the explanation for Elaine's back pain was found: severe osteoporosis and spine fractures. She is frustrated and angry that it had taken so long to diagnose.

 **IOF** International Osteoporosis Foundation  
Our vision is a world without fragility  
fracture in which healthy mobility is a  
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On the occasion of World Osteoporosis Day, the **Calcium Metabolism and Osteoporosis Program at AUBMC** invites you to participate in the Osteoporosis Day activities.

# TAKE ACTION

FOR BONE HEALTH

## اتخذ التدبير

من أجل صحة العظام



Assessment of Your Risk Fracture

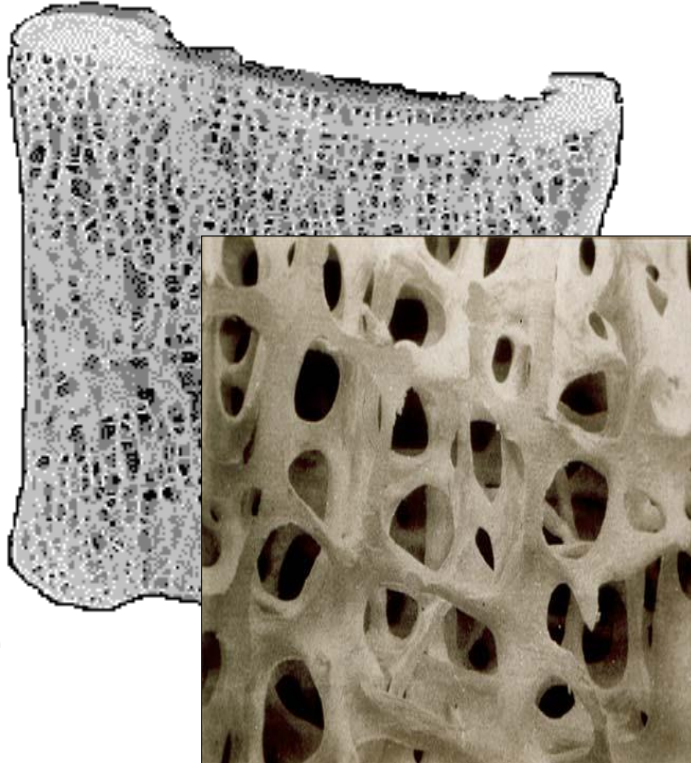
Assessment of Your Knowledge in Bone Health

# All About Osteoporosis

- What is osteoporosis?
- What are the consequences?
- What are the Risk Factors
- Finding out if your bones are fragile
- Healthy living for strong bones
- Drug treatments to prevent fractures
- Help after fragility fractures

# What Is Osteoporosis?

“A skeletal disorder characterized by **compromised bone strength** predisposing to an increased risk of fracture. **Bone strength** reflects the integration of two measures: **bone density and bone quality**”.

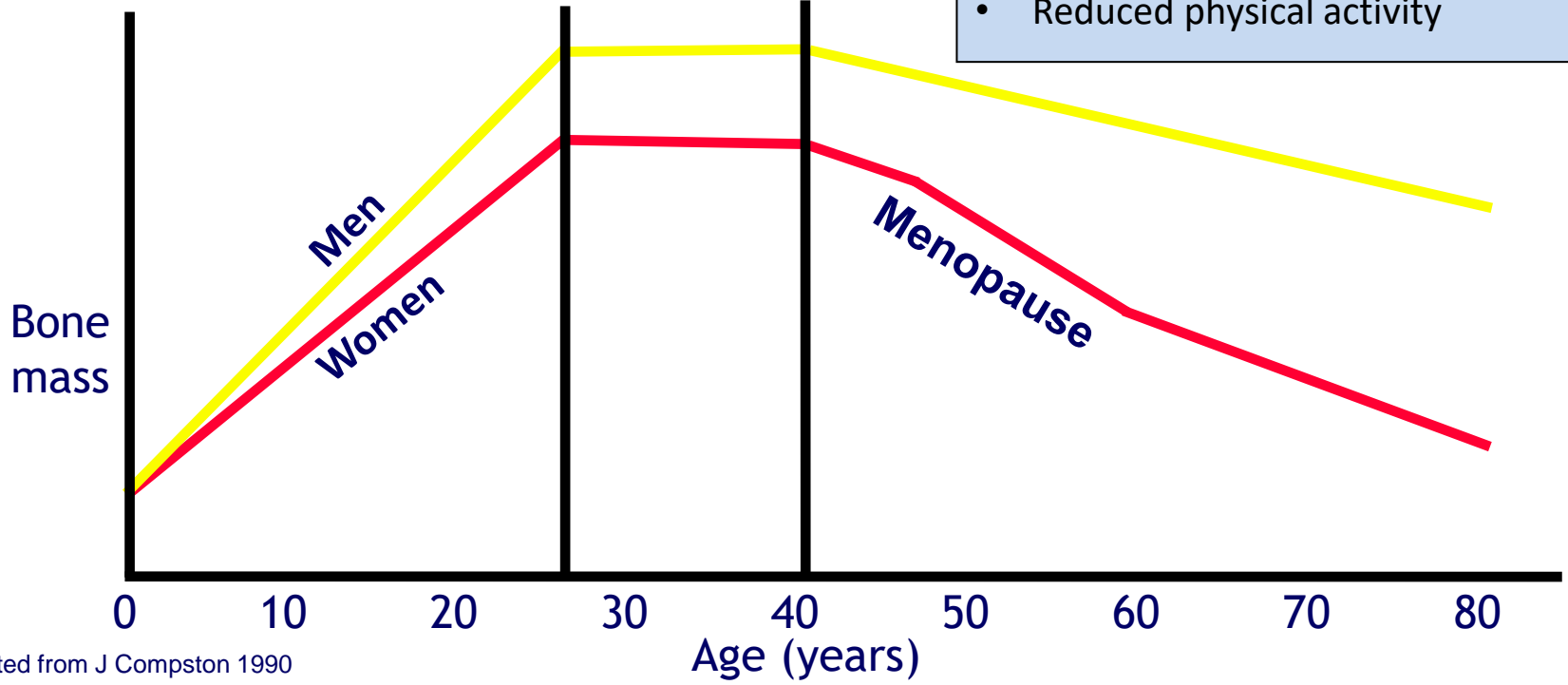


# Changes In Bone Mass With Age

- Genes
- Nutrition
- Exercise

- Nutrition?
- Vitamin D in the womb

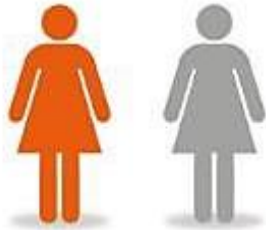
- Age related bone loss
- Reduced physical activity



Adapted from J Compston 1990

# Osteoporosis Is Common

## Who it affects



**1 in 2 Women**

**1 in 5 Men**

People **over the age of 50**, who will break a bone mainly as a result of poor bone health.

**SILENT DISEASE UNTIL FRACTURE OCCURS**

# Common Fracture Sites

>60 years



Vertebrate fracture



Wrist fracture



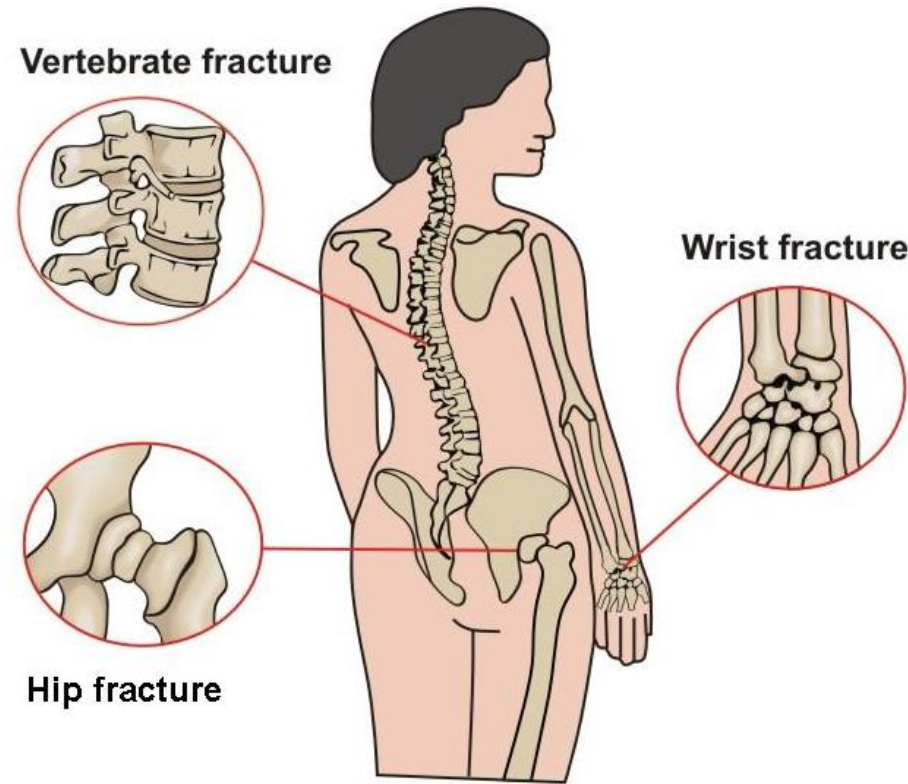
50-60 years



>70 years



Hip fracture



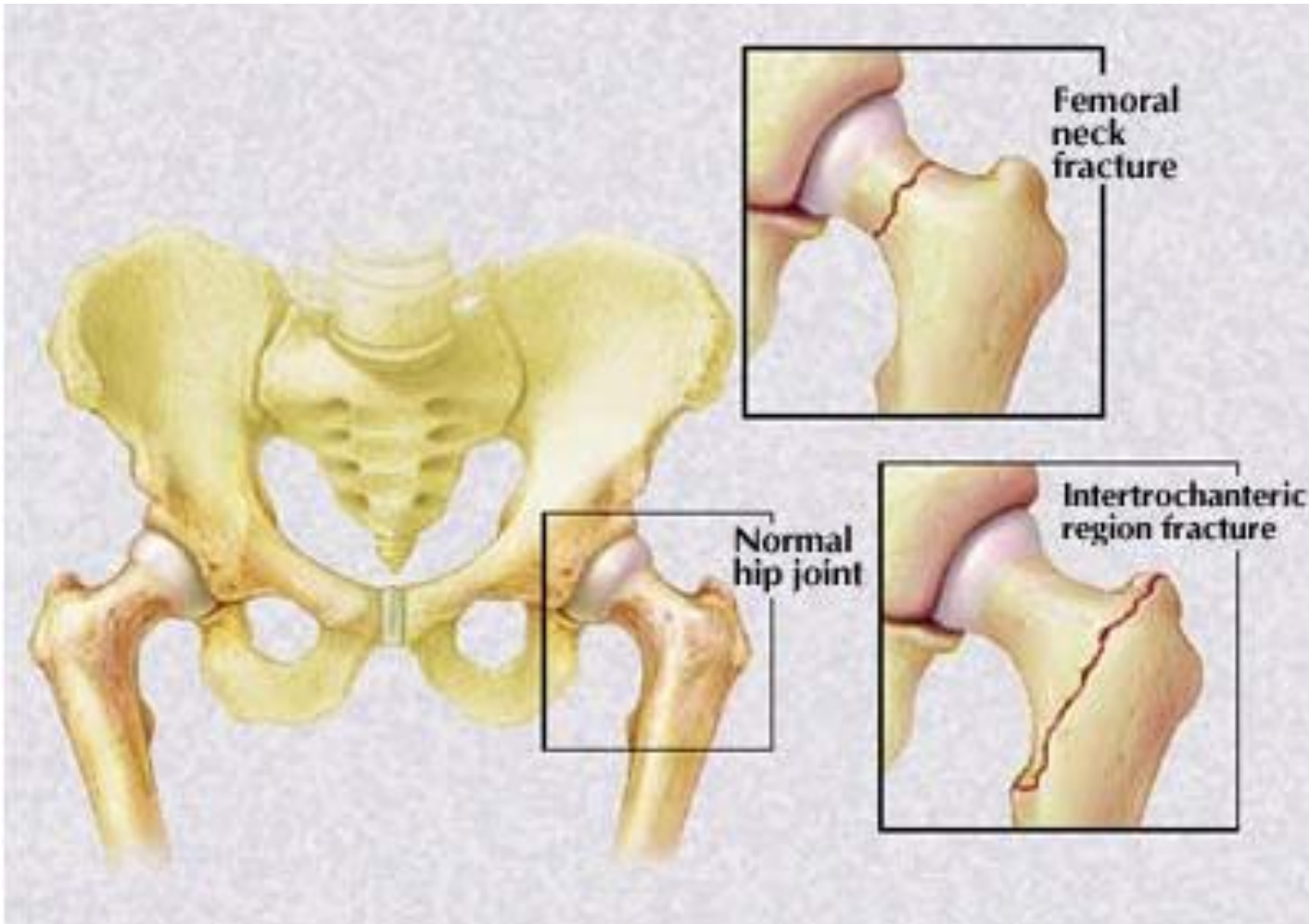
# All About Osteoporosis

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# Osteoporosis: Widow's Hump



# Hip Fractures



# All About Osteoporosis

- What is osteoporosis?
- What are the consequences?
- **What are the Risk Factors ?**
- Finding out if your bones are fragile
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# Risk Factors For Osteoporosis And Fractures

- Older Age
- Race
- Gender: woman
- Some medicines -e.g. glucocorticoids ('steroids'), breast and prostate cancer drugs, breast cancer and prostate cancer drugs
- Medical conditions: liver, renal, heart and lung disease

# Risk Factors (cont.)

- Some medical conditions e.g. rheumatoid arthritis and early menopause
- Medical conditions causing immobility, affecting food absorption, or affecting hormone levels
- Low body weight
- Family history
- Current smoking
- Alcohol more than 3 units daily
- Bones have already broken easily



# One 'Fragility Fracture' Increases The Risk Of A Second

## After a first fracture:

- 23% of all further fractures occurred within 1 year
- 54% of all further fractures occurred within 5 years\*

\*Clinical subsequent fractures cluster in time after first fractures; (2009) van Geel TA, van Helden S, Geusens PP, Winkens B, Dinant G

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# Osteoporosis Diagnosed On A Scan



Bone density scanning of hip and spine:  
**dual energy X-ray absorptiometry (DXA)**

# Fan-Beam With Rotating Gantry



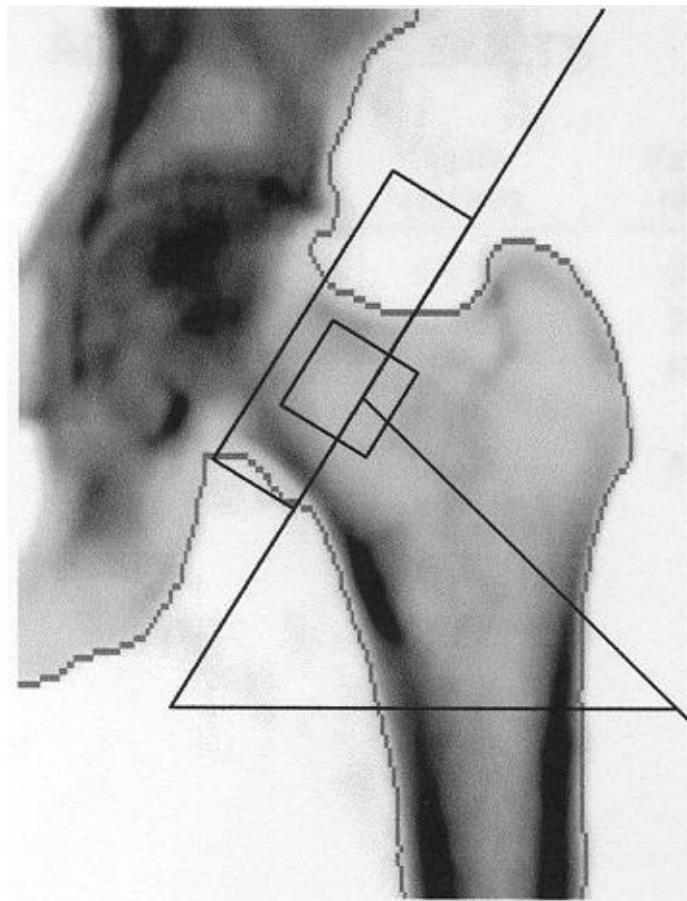
Supine lateral spine

# Densitometry DXA

**SPINE AP**



**HIP: neck/trochanter**



# Who To Test?

## FRAX Based Lebanese Guidelines 2013

### Definite indications

- >65 years: age as a risk factor (20% of women >65 have VFx, 13% of men)
- Presence of vertebral deformity or fragility fracture
- Radiologic evidence of demineralization
- Chronic corticosteroid therapy (>3-6 months)
- Aromatase Inhibitors and androgen deprivation therapy

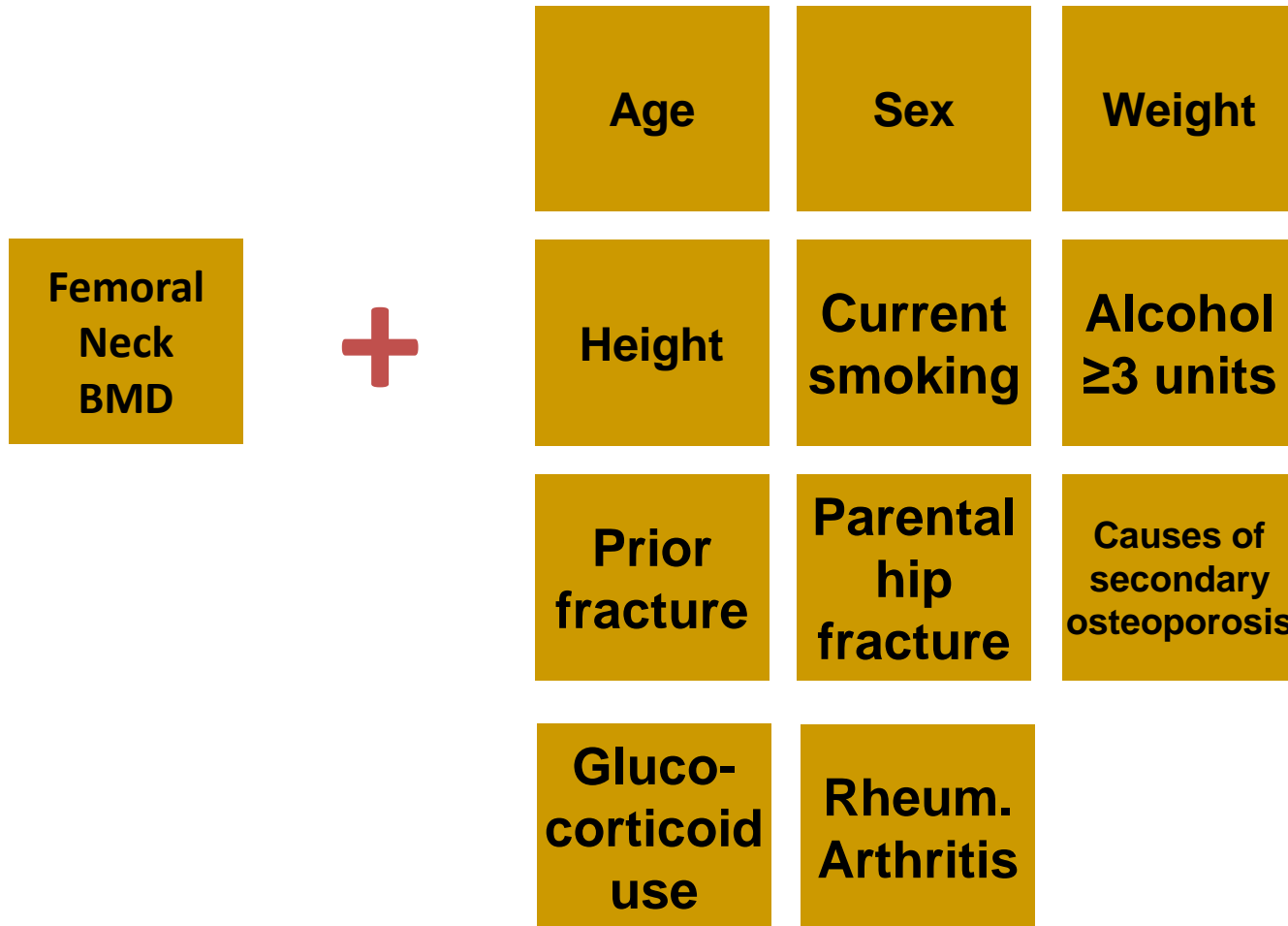
### Less definite indications in PM women and Older men/ Use FRAX Risk Factors to decide on BMD-If FRAX with RF close to 10% then Do BMD

- Medical conditions known to cause bone loss:
- Other risk factors for bone loss: Low BMI, +Family Hx of hip fractures

### No indications: use FRAX RISK Factors to reassure

- Healthy cycling premenopausal women
- Men  $\leq$  65 years

# WHO FRAX Risk Factors For Fracture



# FRAX Lebanon

## Calculation Tool

Please answer the questions below to calculate the ten year probability of fracture with BMD.

Country: Lebanon Name/ID:  [About the risk factors](#)

**Questionnaire:**

1. Age (between 40 and 90 years) or Date of Birth  
Age:  Date of Birth: Y:  M:  D:

2. Sex  Male  Female

3. Weight (kg)

4. Height (cm)

5. Previous Fracture  No  Yes

6. Parent Fractured Hip  No  Yes

7. Current Smoking  No  Yes

8. Glucocorticoids  No  Yes

9. Rheumatoid arthritis  No  Yes

10. Secondary osteoporosis  No  Yes

11. Alcohol 3 or more units/day  No  Yes

12. Femoral neck BMD (g/cm<sup>2</sup>)  
Select BMD



### Weight Conversion

Pounds  kg

### Height Conversion

Inches  cm

**00110210**

Individuals with fracture risk assessed since 1st June 2011

## Welcome to FRAX®

The FRAX® tool has been developed by WHO to evaluate fracture risk of patients. It is based on individual patient models that integrate the risks associated with clinical risk factors as well as bone mineral density (BMD) at the femoral neck.



Dr. John A Kanis  
Professor Emeritus,  
University of Sheffield

The FRAX® models have been developed from studying population-based cohorts from Europe, North America, Asia and Australia. In their most sophisticated form, the FRAX® tool is computer-driven and is available on this site. Several simplified paper versions, based on the number of risk factors are also available, and can be downloaded for office use.

The FRAX® algorithms give the 10-year probability of fracture. The output is a 10-year probability of hip fracture and the 10-year probability of a major osteoporotic fracture (clinical spine, forearm, hip or shoulder fracture).

### FRAX Desktop Application

Click here to view the applications available



### Web Version 3.4

View Release Notes



### Links

[www.iofbonehealth.org](http://www.iofbonehealth.org)



[www.nof.org](http://www.nof.org)



[www.jpof.or.jp](http://www.jpof.or.jp)



[www.esceo.org](http://www.esceo.org)



### FRAX available as iPhone App

View in iTunes



**00745336**

Individuals with fracture risk assessed since  
1st June 2011

Available in  
50 countries/3 with differing ethnic groups  
16 languages  
Accessed on-line Oct 25, 2013

# All About Osteoporosis

- What is osteoporosis?
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- Finding out if your bones are fragile
- **Healthy living for strong bones**
- Drug treatments to prevent fractures
- Help after fragility fractures

# What Can I Do To Keep My Bones Strong And Prevent Fractures?

- Healthy, balanced, calcium-rich diet
- Weight-bearing exercise
- Maintain appropriate body weight
- Not smoking
- No excessive alcohol
- Adequate vitamin D



# The eatwell plate



Use the eatwell plate to help you get the balance right. It shows how much of what you eat should come from each food group.







# Recommendation For Ca & Vitamin D Supplementation

	Use	Dosage
<b>Calcium</b>	Supplementation recommended for most men and women aged > 50 yrs	Total intake 1000-1500 mg/day (Adjust dosage according to dietary calcium intake)
<b>Vitamin D</b>	Supplementation recommended for most men and women	Age 51-70yr: 800 IU/day Age ≥70yr: 800-1,000 IU/day

# How To Improve Your Bone Health?

## Milk

CALCIUM RICH 

FOOD	SERVING SIZE	CALCIUM (MG)
Milk, semi-skimmed 	200 ml	240
Milk, skimmed 	200 ml	244
Milk, whole 	200 ml	236
Milkshake	300 ml	360
Sheep milk	200 ml	380
Coco milk	200 ml	54
Soy drink (non-enriched)	200 ml	26
Soy drink, calcium-enriched*	200 ml	240
Rice drink	200 ml	22
Oat milk	200 ml	16
Almond milk	200 ml	90



**Benefits of calcium outweigh potential risk!!**

# How To Improve Your Bone Health?

- **Exercise:**

- Weight-bearing
  - Muscle-strengthening
  - Balance-training exercises
- 20-30 min 3-4 times per week



Avoid twisting, high-impact loading, bending and compression of the spine

# Fall Prevention

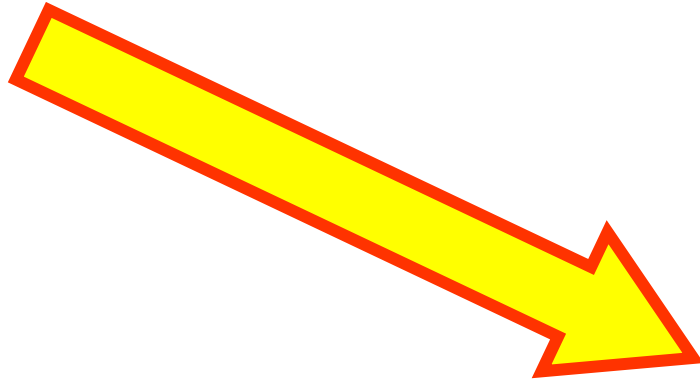
Falls prevention strategies and assistive devices help reduce fracture risk



# Vitamin D

- Sunlight provides the vitamin D we need
- Daily sunlight exposure between May and September increases vitamin D levels
- Stored by the body for the winter months
- Helps the body use calcium and is essential for healthy bones

**Skin** needs, and makes  
cholesterol  
(7-dehydro-cholesterol)



Cholecalciferol  
(Vitamin D3)



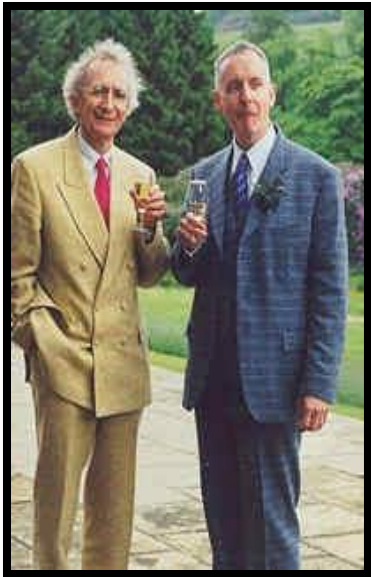
*CYP2R1 polymorphisms  
and others*

25(OH)D

1,25 (OH)<sub>2</sub> D ← 25-hydroxyvitamin D

# Vitamin D Supply

Amount of skin surface exposed  
The quality of sunlight.



# Vitamin D

- 10 minutes of sun exposure to bare skin once or twice/day
- Important not to burn
- Make sure that you are *actually* outside
- Some people need supplements:  
10-20µg (micrograms) daily –

e.g. pregnant women; those who don't get sunlight exposure; older frailer people



# Vitamin D



The body itself makes vitamin D when it is exposed to the sun

Cheese, butter, margarine, fortified milk, fish and fortified cereals are food sources of vitamin D



ADAM.

# Vitamin D

The body makes vitamin D when it is exposed to Ultraviolet (UV) rays from the sun.



## FOOD SOURCES:

- Cheese
- Margarine
- Butter
- Fortified Milk
- Healthy Cereals
- Fatty Fish



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# Keeping Steady And Safe As We Get Older To Prevent Hip Fracture

- Keep fit and active as you get older
- Specific exercises help to improve balance and muscle strength
- Tai Chi
- Safe home environment
- Hip protectors?



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لأم في خمسة أسئلة

في تكلفة العظمية وخشاشة في البنية  
من احتمال الكسور.



عظم عادي

أكثر نعوماً عن ترقق العظام أما كسر  
فهو الأكثر تأثيراً على الصحة.



كسر الفقرات



كسر الورك

CALCIUM METABOLISM  
OSTEOPOROSIS PROGRAM

# فق العظام ليل المريض



تت مبكر  
خر

بيروت

CALCIUM METABOLISM  
OSTEOPOROSIS PROGRAM



## Osteoporosis A Patient's Guide

IT IS NEVER TOO  
TOO LATE TO PREVENT  
TREAT OSTEOPOROSIS



American University of Beirut  
Faculty of Medicine  
& Medical Center



## Bone Densitometry Unit

CALCIUM METABOLISM  
OSTEOPOROSIS PROGRAM



AUB Medical Center



**THANK YOU**