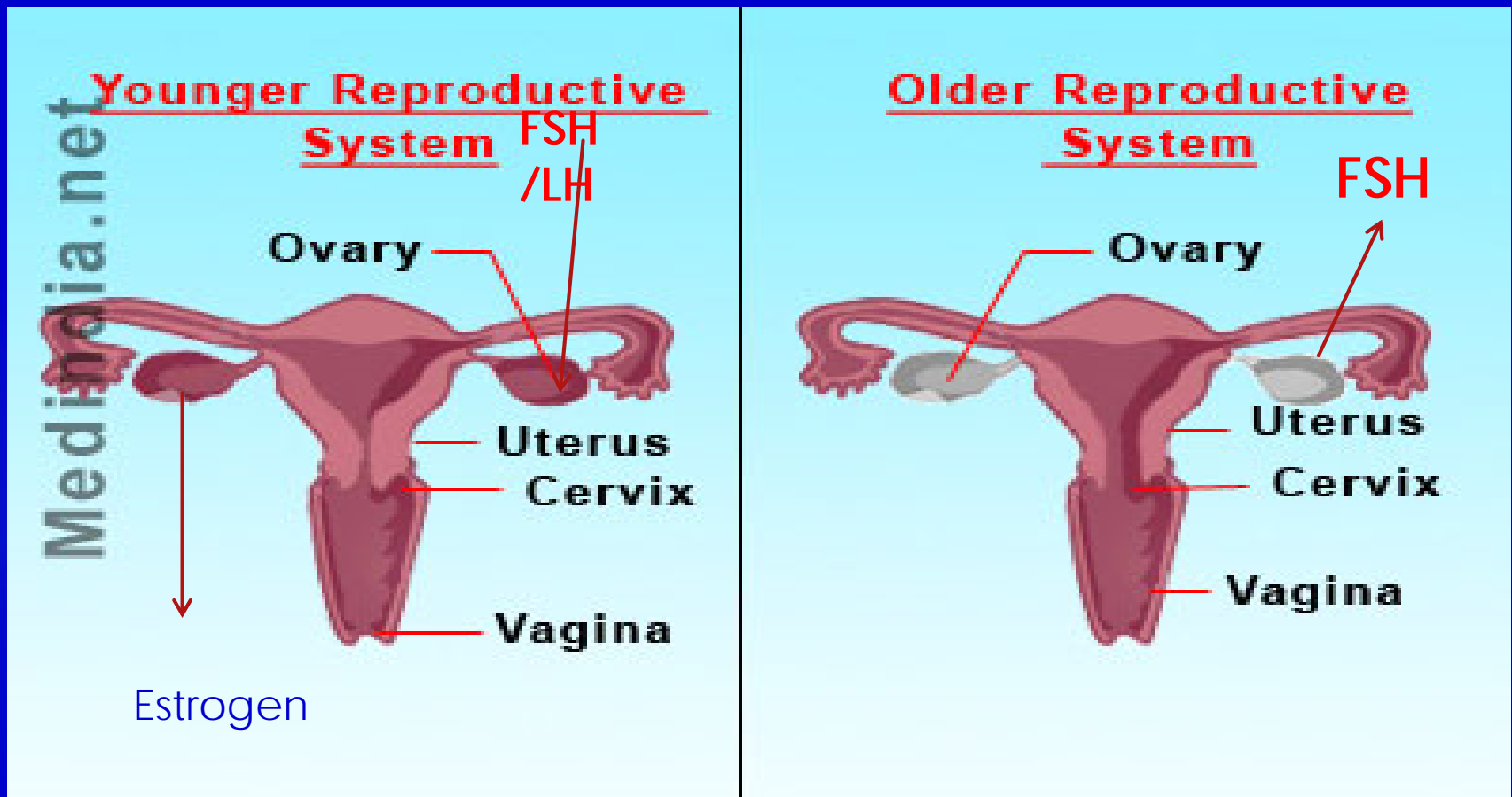
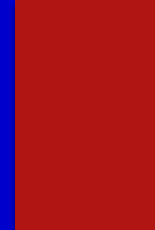


# Hormones menopause and osteoporosis

RENU JOSHI, M.D.

# Hormones



# Pathophysiology

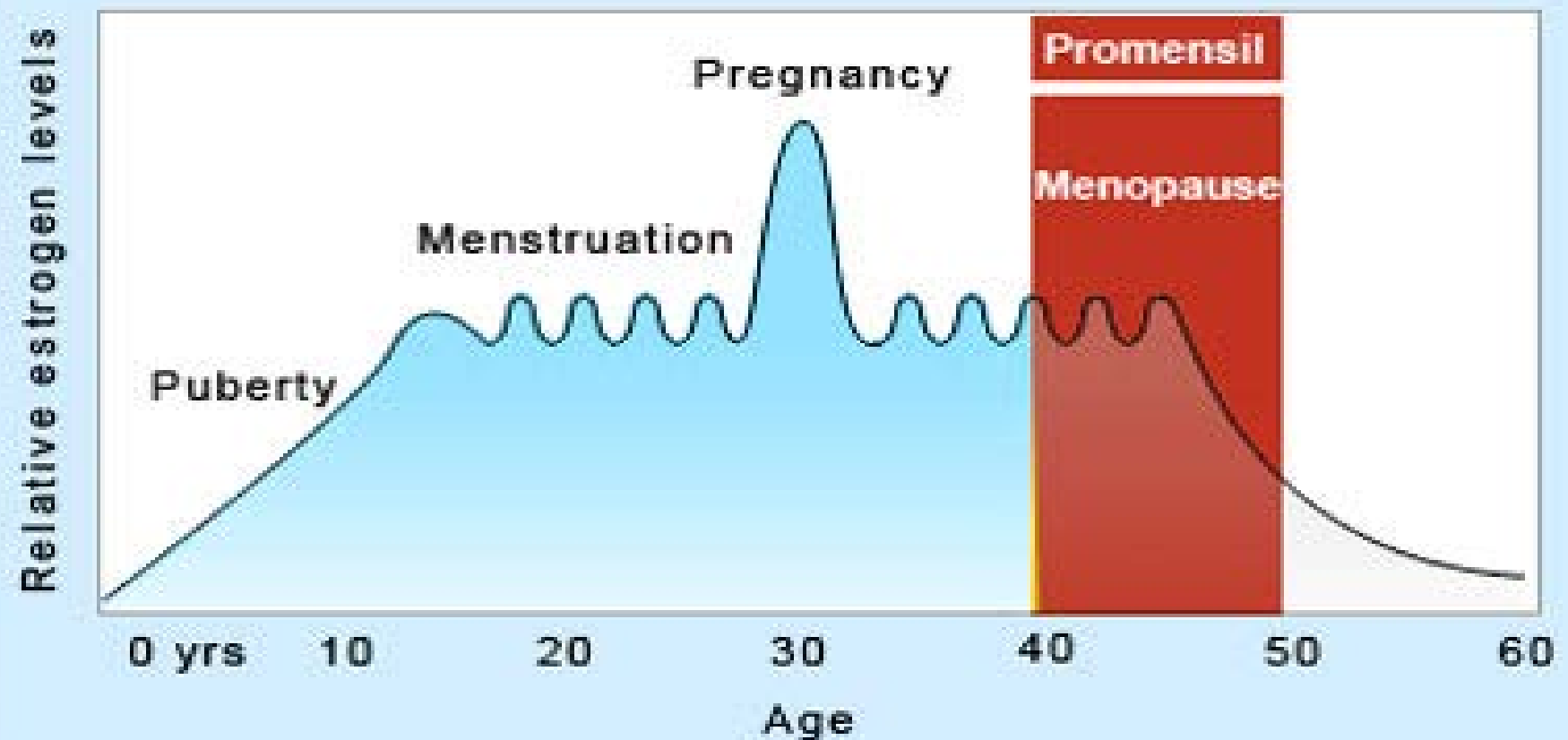
- ▶ Ovaries start to fail which then causes a surge from pituitary Gland a Hormone called as FSH

▶ FSH/ LH ( pituitary )



Ovaries

## ESTROGEN LEVELS FROM PUBERTY TO POST-MENOPAUSE



# Menopause

- ▶ Complete stopping of periods for 12 months with no menstrual cycles.
- ▶ Usual age 45-50 but can happen as early as 35 and as late as 55.
- ▶ In between period is called Peri-menopausal.

# Symptoms of menopause

Irregular periods

Decreased fertility

Vaginal dryness

Hot flashes

Sleep disturbances

Mood swings

Increased abdominal fat

Thinning hair

Loss of breast fullness

Decreased sex drive or Libido

## Other symptoms

- 60-70% women go through menopausal period without problems
- Rest needs guidance and treatment



- ➔ Hot Flashes
- ➔ Mood Swings & Irritability
- ➔ Low Energy
- ➔ Weight Gain
- ➔ Loss of Libido
- ➔ Night Sweats
- ➔ Difficult Concentrating
- ➔ Sleeplessness
- ➔ Bone Loss

# Causes

- ▶ Natural
- ▶ surgery if ovaries are removed.
- ▶ Radiation or Chemo therapy.
- ▶ Unnatural due to other diseases



# Diagnosis

- ▶ While the blood test does not always confirm menopause specially in peri-menopausal period ,Blood test for FSH and estrogen levels can sometime confirm the diagnosis .

# Non Medical treatment

- ▶ Avoid factors which stimulate Hot flashes eg: coffee,hot tea ,smoking .
- ▶ Soya products, Vitamin E, Black Cohosh.
- ▶ Relaxation with meditation Yoga etc.
- ▶ Get good sleep
- ▶ Exercise and healthy habits
- ▶ Quit smoking
- ▶ Strengthen your pelvic floor .

# Treatment

- ▶ Hormones oral and Vaginal estrogen.
- ▶ Clonidine.
- ▶ Low dose anti depressants
- ▶ Neurontin.

## Estrogen therapy

- Short term estrogen therapy
- 1) To relieve symptoms like; hot flush, night sweats, palpitations, disturbed sleep
- In smallest effective dose for 3-6 months
- Natural estrogens
- Oral premarin(Conjugated equine estrogen (CEE): 0.625 mg daily)
- Ethinyl estradiol(0.01mg),Evalon(1-2mg), micronized oestrogen are effective.

## Contraindications of HRT

- Breast cancer, uterine cancer or family history of cancer.
- Previous history of thromboembolic episode.
- Liver & gall bladder disease.

# Other Treatment for Menopause

- ▶ Clonidine
- ▶ drug for high BP but helps with hot flashes in 40-50 % cases
- ▶ Antidepressants- Effexor
- ▶ Neurontin

# Other issues

- ▶ Vaginal Estrogen cream for dryness .
- ▶ Painful intercourse –Osphena .( Osmiphine)
- ▶ Decreased Libido ? Data with some Testosterone like products ( Estratest).
- ▶ Sometime viagra can be used

# Complications

- ▶ Heart disease Same risk of Heart disease as men after menopause but worse outcomes.
- ▶ weight gain Average of 5-10 lbs over 1-4 years.
- ▶ osteoporosis
- ▶ urinary incontinence



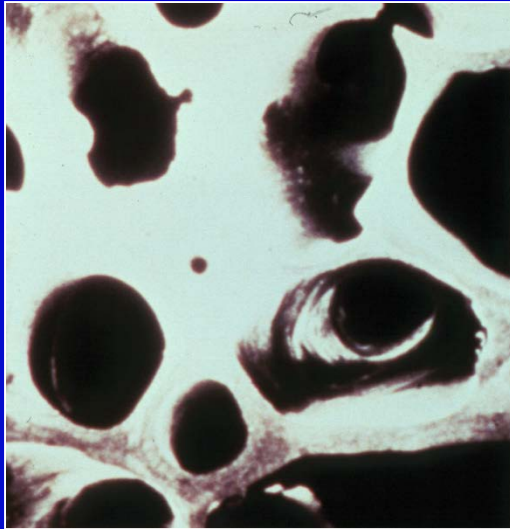
# Summary Menopause

- ▶ Healthy life style is a key to success .  
Appropriate control of portion size with a decrease of 400-500 calories is important with menopause to avoid wt gain.
- ▶ Do not put extra calories in your mouth if you cannot burn them by Exercise.
- ▶ There are appropriate treatments available for hormonal conditions which will help with sweating well being and prevent Osteoporosis

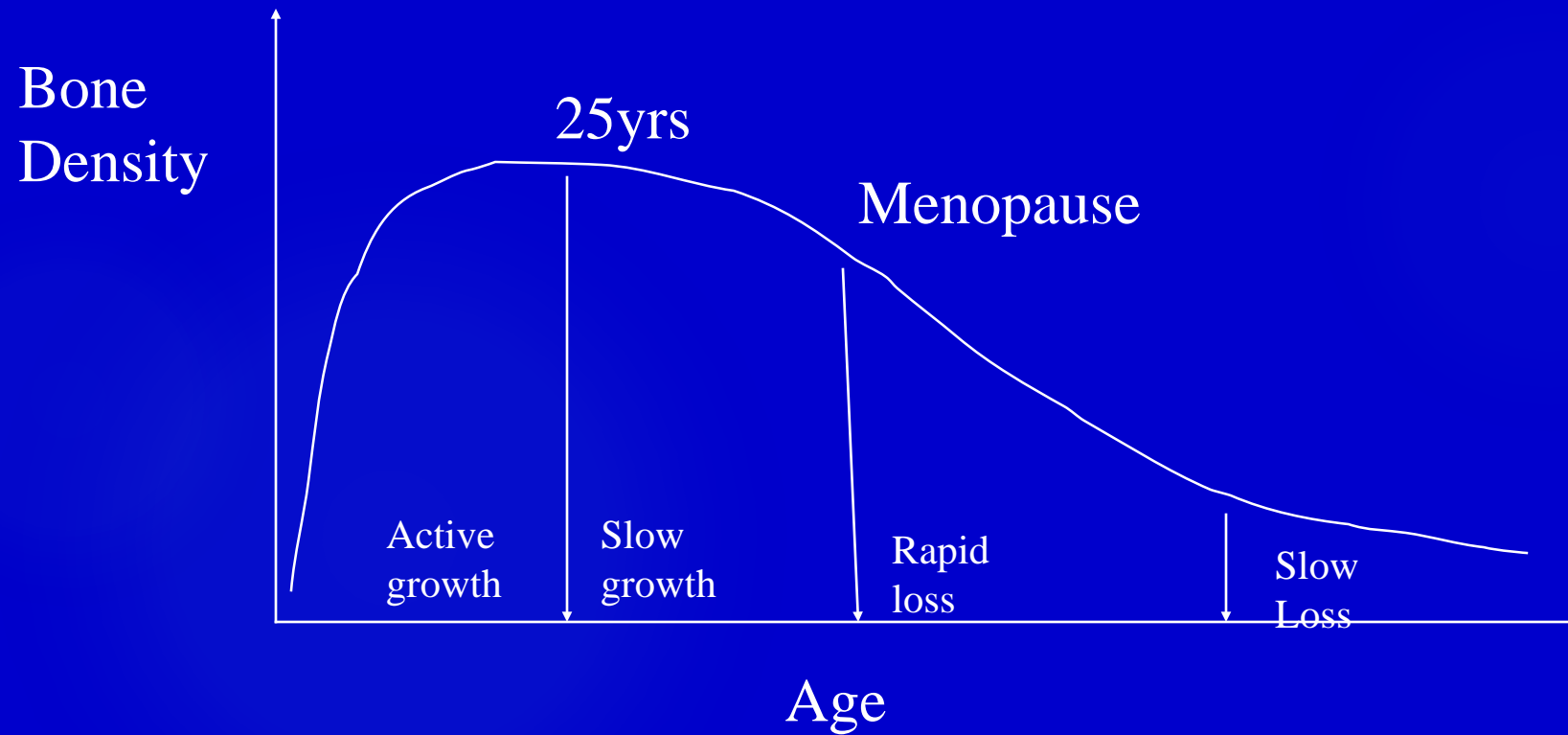
# Osteoporosis



# Osteoporosis: Definition



# Bone mass in women



# Prevalence

- ▶ Almost 50% of women between age 50-65 across world suffers from osteopaenia/osteoporosis. This figure is almost 75-80% in women more than 65 yrs of age.
- ▶ Almost 50% of white women suffer from one fracture due to this disease.
- ▶ 25-30 Millions are affected.
- ▶ Transfers into huge economic burden and poor quality of life.
- ▶ Projected cost is 25 billion by 2025 and 40 billion by 2040.

# Causes for osteoporosis

- ▶ Too much destruction-

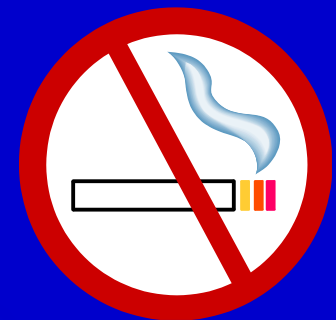
- ▶ Menopause
- ▶ Medicines
- ▶ Medical conditions
- ▶ Life style

- Too little formation

Decreased Vit D and Calcium

# *Risk Factors*

- Caucasian/Asian race
- Age > 45 in F and > 65 in M
- Menopause- Medical/ surgical
- Lifestyle
  - Diet <300 mg of calcium per day.
  - Alcohol/smoking
  - Lack of exercise
  - Caffeine > 3 cups along with < 800 mg of calcium



## *Medical conditions resulting in Osteoporosis?*

---

- Endocrine conditions-Over active thyroid , Cushings, Hyperparathyroidism, Hypo Gonadism
- Chronic diarrhea and vomiting
- Nutritional deficiency of Calcium /Vitamin D
- Organ transplantation & cancer



TIME

Partners  
with  
CNN

# Health & Science

## Kids Aren't Getting Enough Vitamin D

By Kathleen Kingsbury Monday, Oct.  
13, 2008



# What are the Symptoms of Osteoporosis?

**.SILENT EPIDEMIC as in Early stages it is painless**

- Pain in the back
- Loss of height
- A curving spine
- Fracture of bones

# *Tests for Osteoporosis*

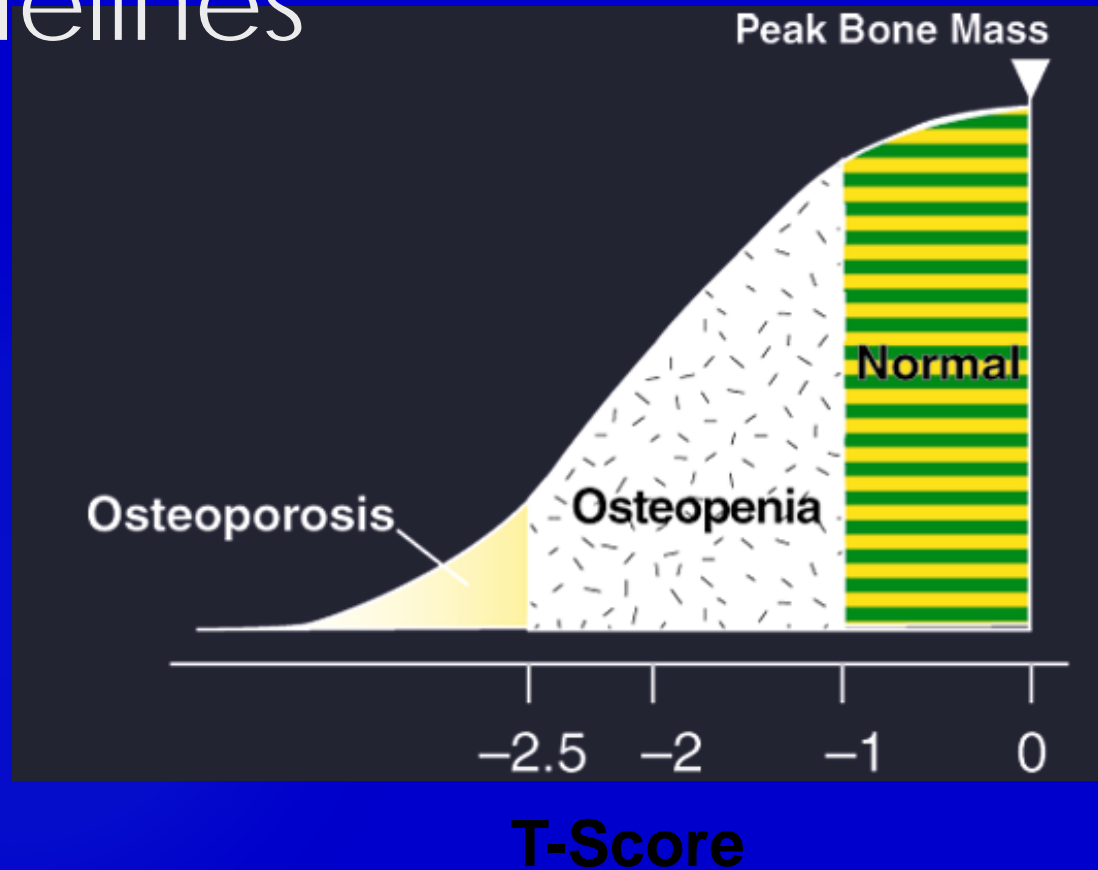


- 
- Bone density test
- Osteoporosis can be detected at an early stage with a routine “Bone density test
- It is a simple X-ray type test called DEXA (dual energy X-ray absorptiometry)
- It measures the density of bone which predicts the risk of fractures.

# Who should get Bone Density testing?

- ▶ For post menopausal women above age 65.
- ▶ Presence of risk factors in person between 50-65 years of age.
- ▶ Evidence of vertebral deformity/Height loss of > 1.5 Inches.
- ▶ H/o non/mild traumatic Fx of spine hip wrist or feet.
- ▶ For follow up of therapy.
- ▶ Heel scan and finger scans are free and are a good screening test to find out about osteoporosis.

# World Health Organization (WHO) Osteoporosis Guidelines

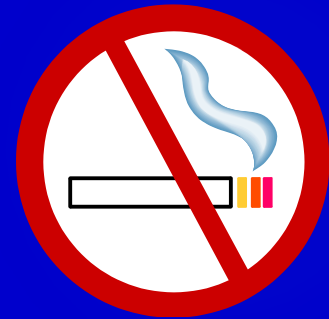


# FRAX tool

- ▶ New tool by WHO to find out your risk for fracture if your numbers are between -1 till -2.5 .
- ▶ you can download at home and put in numbers
- ▶ Treatment should be initiated if Hip Fx risk is  $> 3\%$  and any other fracture risk is  $> 20\%$
- ▶ [www.Frax.com](http://www.Frax.com)

# What can you do to prevent Osteoporosis?

- ▶ Quit Smoking
- ▶ Increase Calcium Intake
- ▶ Exercise 20-30 min 5-7 days a week
- ▶ Caffeine less than 3 cups daily.
- ▶ Reduce alcohol.



# *Calcium Requirements*

- Adults - 1000 mg daily
- Post menopausal not on HRT - 1200 mg daily
- Post menopausal women on HRT 1000 mg daily.
- children < 10 yrs- 800 mg daily.
- Adolescents-1200 mg daily.
- Males after 65 -1000 mg daily



## *Facts about calcium*

- Dairy products are the richest source. 1 cup( 300 ml) of milk= 1 1/2 slice of cheese=1 cup of yogurt = 300 mg of calcium.

- **Skim Milk calcium == same as Regular milk.**

- Broccoli, Chinese cabbage, canned fish, seeds and nuts are other good sources of calcium.

# Vit D levels

- ▶ Normal  $> 30$  ng/ml
- ▶ Good levels are considered to be  $> 30$  ng/ml.
- ▶ Mild deficiency is 20-30 ng/ml
- ▶ moderate deficiency is 10-20 ng/ml and
- ▶ severe deficiency is considered is  $< 10$  ng/ml

# Prevention /Treatment for Vit d deficiency

- ▶ Prevention is minimum of 800 IU daily.
- ▶ Moderate or severe usually need 50,000 IU once a week for 8-12 weeks to correct.
- ▶ Mild deficiency can be corrected with 2000 IU daily of Vit D<sub>2</sub> or D<sub>3</sub>.

## *Medicines to prevent osteoporosis*

- Supplemental Calcium and Vitamin D in all patients.
- Treatment of other medical conditions.
- Estrogen replacement therapy (Hormone replacement therapy) Not considered for prevention therapy any more.

# Bisphosphonates

- ▶ Actonel and Fosamax and Boniva
- ▶ Fosamax is generic once weekly .Can be taken daily as well.
- ▶ Actonel/ Boniva is once a month.
- ▶ Reclast is same but IV once an year.

# Bisphosphonates Contd....

- All drugs should be taken with plenty of water first thing in am.
- No lying down for 30 minutes
- Side effects include Stomach upset, acidity
- if you have gastric ulcers do not take without discussing with your physician
- Occasionally people get pain in joints which would need stopping of drug.

# Fractures and Bisphosphonates

- ▶ New data to suggest increased risk of Transverse fractures with Bisphosphonates .
- ▶ More common after 5 years .
- ▶ Also risk of Osteonecrosis of Jaw very rare

# Other drugs

- ▶ Forteo -Once daily injection for 2 years to buildup bones
- ▶ Prolia a new drug every 6 months to decrease bone destruction



# Summary

- ▶ Silent Epidemic
- ▶ Needs to be recognized early
- ▶ Bone density is direct predictor of Fractures
- ▶ Lifestyle modifications are very helpful
- ▶ Vit D deficiency is increasing common and should be tested in every individual.
- ▶ Drugs are safe and very beneficial.



Thank You