

IMPACT OF MENOPAUSE ON BONE HEALTH

“Better be safe than sorry”

- Reiner Bartl, Endocrinologist.

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Introduction:

Menopause is defined as the permanent cessation of menstruation due to loss of ovarian activity. Menopausal symptoms are associated with reduced functioning of the ovaries due to aging, resulting in lower levels of estrogen and other hormones. Menopause can increase women's risk of developing osteoporosis.

Osteoporosis is a disease that weakens bones, increasing the risk of sudden and unexpected fractures. By 2050, the international osteoporosis foundation estimates that half of the world's osteoporotic fracture will occur in Asia. Almost 70 million people over the age of 50 suffer from osteoporosis and the disease causes about 6,87,000 hip fractures among women in a year.

In India the number of osteoporosis is approximately 26 million (2003). and the number projected to increase to 36 million by 2013. The risk of suffering from osteoporotic fractures is 30-50% in women.

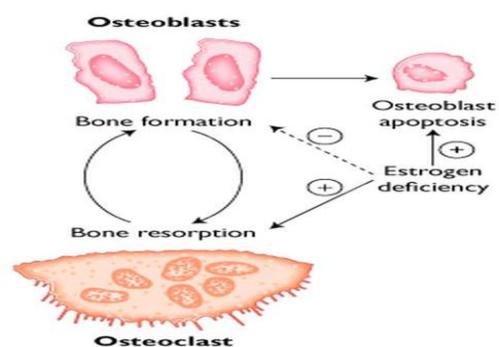
IMPACT OF MENOPAUSE ON BONE HEALTH:

Bones are a dynamic tissue, constantly undergoing breakdown and formation. It can be affected by many factors such as diet, exercise, hormones (estrogen) and other life style factors.

Estrogen plays an important role in maintaining bone strength and it slows bone loss and improves the body absorption and retention of calcium. **There is a direct relationship between the lack of estrogen after menopause and development of osteoporosis.** This lack of estrogens accelerates bone loss for a period

ranging from 5 to 8 yrs. In terms of bone remodeling, the lack of estrogen enhances the ability of osteoclasts (break down of bone) to absorb bone. Since the osteoblasts (formation of new bone) are not encouraged to lay down more bone, the osteoclasts win and more bone is lost than is produced.

Lack of estrogens decreases bone mass approximately one percentage per year from the age of 40 .It increases rapidly after menopause for the next 10 yrs. It is estimated that, on average women loses approximately 15% of her bone mass within 5 yrs. This rapid bone loss period is followed by slower bone mass loss such that she may lose up to 40% of her peak bone mass by 80 yrs of age. Research suggests that about half of all women over the age of 60 yrs experience atleast one fracture due to osteoporosis.



PREVENTION OF MENOPAUSAL OSTEOPOROSIS:

Five 'E'asy ways to prevent osteoporosis are:

- ❖ Exercise
- ❖ Eat foods rich in vit D, calcium, phytoestrogens, and proteins
- ❖ Encourage to maintain healthy body weight
- ❖ Early identification and treatment

❖ Engage with preventive steps for fracture

EXERCISE:

- Establish a regular exercise programme.
- Learn and practice weight bearing exercises such as walking, jogging, playing tennis and dancing.
- Flexibility exercise, muscle strengthening exercise such as push up, dumbles etc...

EAT FOOD RICH IN CALCIUM, VITAMIN D, PHYTOESTROGENS, AND PROTEINS: CALCIUM

- **US recommended daily allowances of calcium for** women age31 to 50 are 1,200 mg and people over 50 should consume 1,500 mg of calcium.
- Calcium rich sources are dairy products, seafood, dark green leafy vegetables such as broccoli, orange juice.
- Consult physician and consume calcium supplements such as calcium carbonate and calcium citrate.
- Calcium supplements should not exceed 2000mg/day which may produce renal calculi.

Some Calcium-Rich World's Healthiest Foods

Food	Serving	Calcium (mg)	Quality
Sesame seeds	0.25 cup	351.0	Good
Milk(whole)	1 cup (200ml)	236	Very good
Turnip greens, cooked	1.0 cup	197.3	Excellent
Soybeans, cooked	1.0 cup	175.4	Excellent
Mustard greens, boiled	1.0 cup	103.6	Good
Broccoli cooked	1.0 cup	71.6	Very good
Almonds	0.25 cup	91.8	Good
Fig	4fruits(220g)	506	Excellent

VITAMIN D

- Exposing the body to sun light for 20 mts every day helps to gain enough vit D
- Eat foods such as egg, fatty fish like salmon, and milk
- Consult physician and take vit D supplements 1000 to 2000 IU
- Avoid certain medications such as steroids, anticoagulants and thyroid medications

Food Sources of Vitamin D: * IUs = International Units, ug = Microgram

Food with Vitamin D	IU per serving*	ug per serving*
Salmon, cooked, 100 g	360	9
Egg, 1 whole (vitamin D is found in yolk)	20	0.5
Liver, beef, cooked, 100 g	15	0.37
Milk, whole, 100 ml	4	0.1

PROTEINS: Eat protein rich diet such as dhal, egg, meat, and fish. Framingham (2006) found in his study, lower protein intake were associated with loss of bone mineral density in the hip and spine.

PHYTOESTROGENS:

Phytoestrogens are a plant estrogen which has an action similar like estrogens.

- Eat foods rich in phytoestrogens such as soy, peanut, oats, and gingili pomegranate, garlic, sesame seeds, dry dates.
- Consume only 30 to 50 mg of phytoestrogens per day.
- For better absorption of phytoestrogens women should poses healthy bacterial flora.

H. Arjmandi Bah ram et al., (2002) states that soy protein has greater effect on bone in post menopausal women as evidenced by reducing bone resorption and urinary calcium excretion.

ENCOURAGE TO MAINTAIN HEALTHY BODY WEIGHT:

Excessive thinness, malnutrition and loss of estrogen can devastate to bone health. Also excessive weight causes fracture, so women should maintain a healthy body weight to prevent fracture during menopausal transition.

EARLY IDENTIFICATION AND TREATMENT:

Undergo bone density testing every one to two years after menopause which will helps to identify and treat the problem early.

ENGAGE WITH PREVENTIVE STEPS FOR FRACTURE:

- Remove objects or hazards that can lead to falls eg: loose floor rugs
- Installing hand rails in areas such as entrance way and bathrooms
- Using non slippery mats in bath or shower
- Padding to protect vulnerable parts of the body eg: use hip protectors to prevent hip fracture

SUMMARY

Osteoporosis is a silent killer disease causing fracture among women after menopause. Life style changes will guide the women to prevent osteoporosis and help them to build a strong bone during menopausal transition.

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