



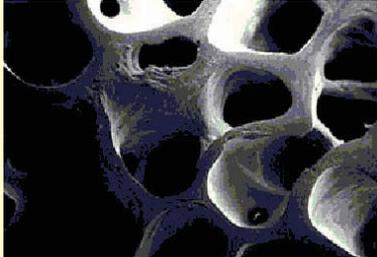
# Osteoporosis in Women



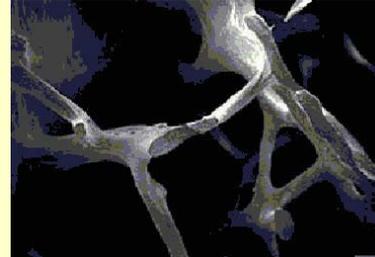
Department of Health

## What is osteoporosis?

Osteoporosis is a metabolic disease of the bone which leads to a reduction in the bone density. The density of the affected bones become lower and the bones becomes more fragile, and are therefore more likely to break, resulting in fractures.



Normal bone



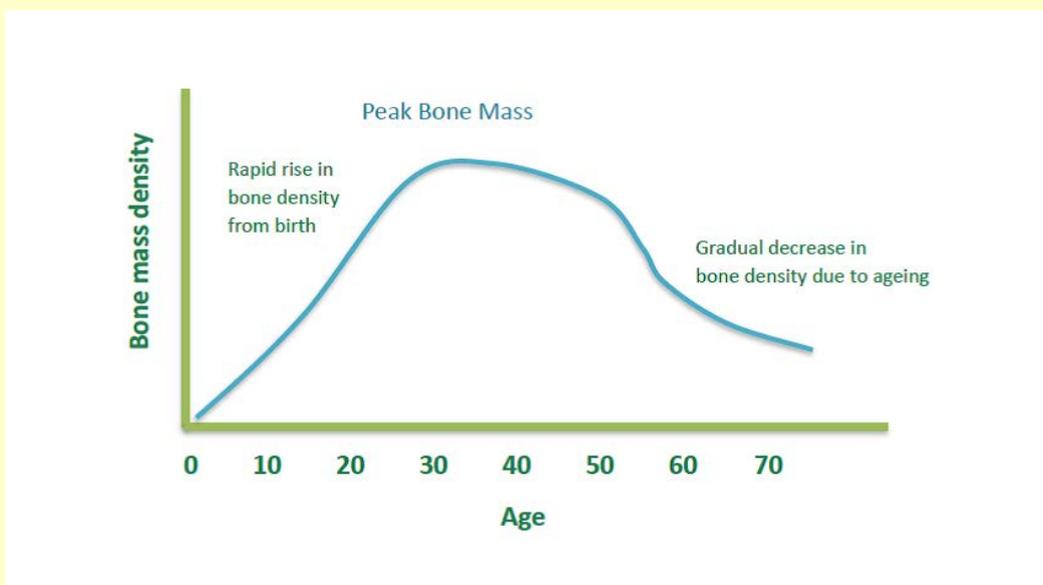
Osteoporotic bone

(Source: Dempster, D. W. et al *J.Bone and Mineral Res.* 1:15-21, 1986)

## What is the relationship between osteoporosis and age?

During the life process, bones change in size, shape and structural density.

- In general, bone mass is most rapidly built during childhood and adolescence, and reaches its peak in the mid-30s. After that, the optimal bone mass is maintained during young adulthood.
- From around age 40, the loss of bone mass becomes obvious, with a period of more rapid loss in women approaching menopause due to oestrogen withdrawal.
- When loss of bone mass is faster than it should be, the chance of having osteoporosis and bone fracture will occur much earlier.



## Who are at risk of getting osteoporosis?

Those who have risk factors like:

- Advancing age
- Being a female
- Being Asian or Caucasian
- Being underweight or having a small body frame
- Having a family history of osteoporosis and fracture
- Having an unhealthy lifestyle, for example:
  - Low calcium intake especially those who are having an unbalanced diet or on diet
  - Smoking
  - Excessive alcohol consumption
  - Excessive caffeine intake
  - Consuming too much sodium (salt)
  - Inadequate exercise

Smoking



Excessive alcohol consumption



Unhealthy lifestyle

■ Those who suffer from certain diseases, for example:

- Lack of oestrogen in women with premature menopause (age < 40 years old), early menopause (age 40-45 years old) or after surgical removal of the ovaries
- Endocrine diseases such as hyperthyroidism
- Chronic medical conditions, vitamin D deficiency or undergone gastrointestinal operation

■ Those who are having medications like:

- Long term use of steroids or other drugs that may affect bone turnover

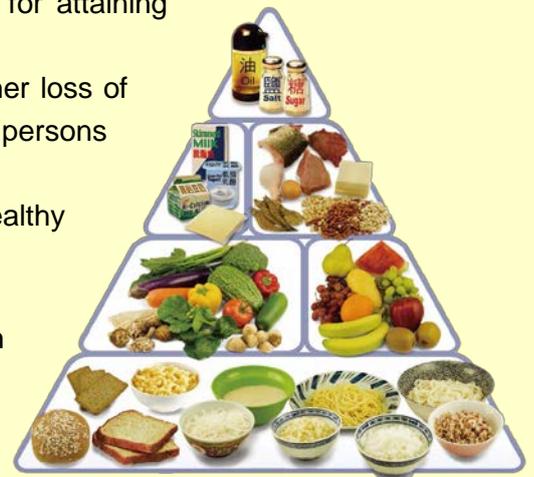
## Does osteoporosis cause bone pain?

- Osteoporosis generally produces no symptoms on its own. If osteoporosis-related fracture occurs, there may be localised pain over the fracture sites.
- An osteoporotic fracture may occur even after relatively minor trauma or fall.
- Common sites of osteoporotic fracture include thigh bone (near the hip joint), spine (vertebrae) and forearm (near the wrist).
- The spine can fracture without any trauma. Vertebral fracture can result in a hunched-back and a decrease in body height, and sometimes back pain.

## How to prevent and treat osteoporosis?

- Build strong healthy bone during childhood and adolescence.
- Calcium and vitamin D are two essential nutrients for attaining peak bone mass.
- Maintain a healthy lifestyle helps to slow down further loss of bone density and to prevent future fractures in persons diagnosed with osteoporosis.
- To build stronger bones, we need to practise a healthy lifestyle:

- Eat a well-balanced diet with adequate calcium and vitamin D
- A moderate exposure to sunlight helps our body produce vitamin D, which is needed for absorption of calcium
- Do weight-bearing exercise regularly (Weight-bearing exercises are the activities which require your bones to bear your body weight, such as Tai Chi, jogging, brisk walking, dancing, tennis, badminton etc.)
- Maintain an optimal body weight
- Avoid smoking
- Non-drinkers should not start drinking for the perceived health benefits of alcohol consumption; for those who choose to drink, limit alcohol intake to minimise the related hazard
- Avoid excessive caffeine-containing drinks, e.g. coffee and tea
- Persons diagnosed with osteoporosis should take appropriate precautions to prevent fractures



- Depending on individual conditions, doctors may prescribe medications such as calcium supplements, oestrogen replacement, vitamin D, bisphosphonates or calcitonin.

## What are the good dietary sources of calcium?

Following foods are good sources of calcium	Choosing Tips
Milk products such as milk, cheese and yogurt etc.	Choose low-fat or skimmed products to reduce intake of extra fat and energy  Avoid flavoured milk like chocolate milk, strawberry milk or condensed milk, as they contain added sugar
Seafood eaten with bones or shells, such as whitebait, sardines, dried silver fish and dried small shrimps etc.	Remove sauce from canned fish as they contain high level of sodium and fat
Soy bean products such as tofu (set with calcium salt), dried bean curd, calcium-fortified low sugar soy milk, soy based vegetarian foods, bean curd stick and bean curd sheet etc.	Avoid choosing high fat products like fried bean curd or bean curd puff
Dark green leafy vegetables, e.g. bok choy, broccoli, kale, Chinese spinach and choy sum etc.	Using low fat cooking method such as boiling, simmering in broth is healthier
Nuts, e.g. almond, walnut and sesame, etc.	Choose products with no salt and sugar added
Fruits (including dried fruits), e.g. oranges, figs, raisins, dried figs and apricots, etc.	Choose dried fruit without added sugar

## What / How should I eat to get adequate calcium if I do not drink milk?

If you do not consume milk products, you may include other calcium rich foods such as soy bean products, seafood or fish eaten with bones, dark green vegetables, seeds and nuts throughout the day, to acquire the calcium your body needs.



High calcium food



## Is 'pork bone soup' or 'pork hock in ginger vinegar ' a good source of calcium?

**No.** Calcium in pork or fish bones does not dissolve in water. Therefore, the calcium content in bone soup is low. The eggs and pork hock are rich in protein, but not calcium. In fact, this stew is high in fat (especially saturated fat) and sugar. Try to limit your intake and remove the skin and visible fat when you are cooking or having these dishes. Choose lean meat instead.



## Do I need to take calcium supplements?

If you have certain health conditions (such as lactose intolerance, conditions requiring long-term steroid therapy, certain bowel diseases such as Inflammatory Bowel Disease, Irritable Bowel Syndrome, or Coeliac Disease), you may not be able to acquire adequate calcium through diet alone. Calcium supplement comes in different compounds and dosage. You may wish to discuss with your doctor, dietitian or pharmacist to choose a suitable calcium supplement if necessary.

## How to get adequate vitamin D?

Most of the vitamin D is made in the skin when we are exposed to sunlight. Expose the face and arms in sunlight for about 10 minutes in mid-morning or mid-afternoon daily. People with darker skin tone or wearing sunscreen need longer exposure. Minimise direct exposure of the skin to the sunlight especially during mid of the day.

Some vitamin D can be obtained by eating fatty fish (such as salmon, sardine, mackerel, tuna, cod, eel, etc.), egg yolk, milk or milk products/soy milk added with vitamin D, but food alone is usually not sufficient to meet your need.

## Do I need to take vitamin D supplements?

Some people may have too little sunlight exposure and therefore they should seek advice from doctor, dietitian or pharmacist about vitamin D supplements. They are:

- People in clothes covering the face, arms and legs most of the time;
- People staying indoors mostly and having very little sun exposure (e.g. those working for long hours indoors or living in institutions);
- People who have a darker skin tone and have limited exposure to sunlight.

## Does stretching exercise help prevent osteoporosis?

- Stretching exercises help to improve agility and balance, but it is not adequate to keep the bone healthy.
- Studies reveal that 30 minutes of physical activity of moderate intensity including weight-bearing exercise every day is beneficial to health. To achieve the benefits of physical activity, you do not need to do it in one single session but can divide the 30-minute physical activity time into three 10-minute sessions.
- Ensure sunlight absorption by performing outdoor activities.
- Warm-up exercises for 5 to 10 minutes should be done beforehand. Stop physical activity immediately if you are feeling unwell and seek medical advice promptly.
- If you have a chronic medical condition, you should seek medical advice from a family doctor before starting an exercise programme.

## How do I know if I was suffering from osteoporosis?

- Dual energy X-ray absorptiometry (DEXA) is specifically used in the diagnosis and monitoring of treatment effect for osteoporosis.
- It measures bone density by X-rays (commonly measures the lower spine and the hip joint).
- The whole process is simple, quick and safe.
- If you suspect that you may be suffering from osteoporosis, please seek advice from your family doctor.

## Conclusion

- Bone mineral loss is a natural phenomenon of aging / when one gets older. Building strong healthy bone during childhood and adolescence can reduce the chance of developing osteoporosis.
- Maintain a healthy lifestyle can help to slow down further loss of bone mass and to prevent future fractures in persons diagnosed with osteoporosis.
- Nowadays there are medications that can effectively reduce the bone mineral loss and increase bone density. If you have any queries, please seek advice from your family doctor.



Family Health Service

Website : [www.fhs.gov.hk](http://www.fhs.gov.hk)

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