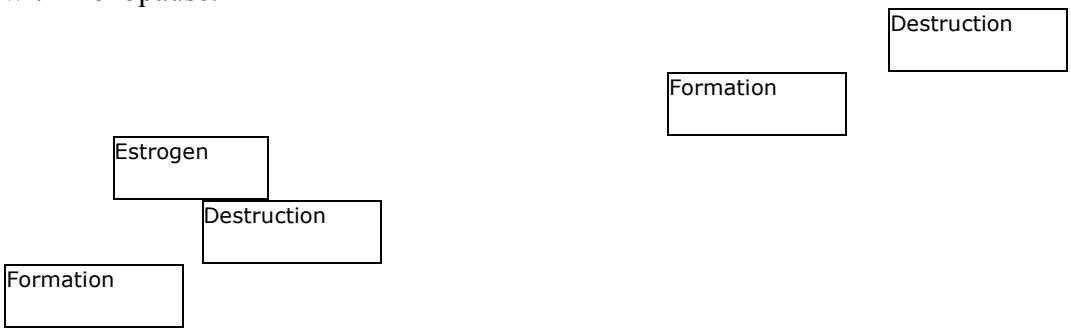
"Osteoporosis": the silent disease and natural ways of possible prevention

By: Nada Rashed Health & Fitness - October 2009

It is Often referred to as the "silent disease," osteoporosis usually progresses without obvious signs or symptoms until the first fracture occurs. Osteoporosis frequently strikes women after their menopause phase, mainly because of the decline in levels of the hormone estrogen which is important for the calcification of bones. When estrogen levels drop, the ability to absorb and assimilate dietary calcium is often reduced. It can also occur in men as a result of delayed puberty, inadequate calcium intake, smoking, excessive alcohol consumption or medications, such as glucocorticoids in addition to the declined levels of estrogen which come with the progress of age.

There are hormones such as estrogen , parathyroid and vitamin D which are all very essential for bone formation and calcification and hence all three should be in balance. There are also genetic factors that seem to have an effect on the bones density, which mainly effect vitamin D, or genetic mutation that controls production of collagen matrix which is essential for bones formation.

The normal process of bone formation and bone destruction takes place normally within the human body. Until a healthy person is around 40, the process of breaking down and building up bones is in balance. Afterwards and as the age progresses one needs to be more careful. One of the main factors affecting the levels of bone formation is the high level of estrogen we have within our bodies. For example, during the women's menopause phase, the estrogen levels drop down significantly; increasing the risk of osteoporosis and the susceptibility for bone fracture as well.Therefore, Women unfortunately are more likely to suffer an earlier osteoporosis compared to men as men's estrogen levels drop gradually as they get older whereas women's drop suddenly with menopause.



Balanced state Progress of age

In the US, some 40% of women and 13% of men may sustain a fracture after age 50. Calcium, especially from milk products, has been universally recommended as the one main element needed to reduce the risk of fractures.

However, late studies have suggested that this may be a wrong approach as there are more fractures in regions that consume milk products (US, Great Britain, Canada, Northern Europe), than in those that don't (traditional Africa, China). There was a study conducted at Harvest on 78,000 nurses who have been drinking milk regularly (like twice a day) for the past 12 years and these people had a much higher risk of hip fracture than those who drink a glass of milk a week or less.

The explanation for this lies in understanding more the structure and function of bones. At this time, most people, including health professionals, think bone=calcium. But things are a bit more tricky here.

Physiologically, bones are composed of calcium phosphate salts (65%) for the purpose of hardness, and a collagen matrix (35%), for the purpose of flexibility. If we place a bone in an acid bath and all the calcium is removed from it, leaving just the collagen matrix, -when exposed to stress- it will bend, however it will not break. On the other hand, if the collagen matrix is removed and all that remains are the calcium salts, when exposed to stress it will break.

In other simple words: a bone with zero calcium will bend, not break, whereas a high calcium/low collagen-matrix bone would break easily. This is why excess calcium can indeed *increase* the risk of fracture because that increase does not mean that the collagen matrix is also increased; which is more vital for healthy formation of bones.

Milk contains very high levels of phosphate that it actually leaches calcium out of the bones. In addition to that milk had 8 times the amount of calcium compared to magnesium which is not a balanced ratio. High calcium levels with not enough magnesium levels will prevent the absorption of magnesium which is vital for moving calcium into the bones.

A 2:1 ratio or better calcium than magnesium is more recommended. However, the ratio in milk would cause a magnesium deficiency in the body. When the ratio is not balanced, calcium will be pulled *from* the bones and this calcium is often deposited in the soft tissues; where it may later cause arthritis.

We often check for calcium levels during menopause through our regular blood tests. Usually the doctor prescribes high doses of calcium during that phase either based on

the blood test findings or as a preventive way of future calcium declines. However, the calcium levels which are derived through the blood tests give us an idea about the calcium levels present in the blood which are different than the ones present in the bones. In other words, a person may have normal levels of blood calcium but that does not deny the fact that the calcium levels of his bones have gone down due to declined levels of estrogen,for instance.

In a case as such, giving calcium tablets is not as accurate as the majority thought it would be; due to the fact that too much calcium may not be calcified by the bones which may lead to osteomalacia.

Primary and secondary osteoporosis:

Osteoporosis can be further characterized as either primary or secondary.

Primary osteoporosis can occur in both genders at all ages but often follows menopause in women and occurs later in life in men. It is associated with fractures that occur when the vertebrae compresses together causing a collapse of the spine, along with fractures of the hip, wrist , forearm caused by minor accidents or falls. A further type of primary osteoporosis affects both men and women and is mainly associated with leg and spinal fractures. The determining factor for the existence of osteoporosis- both types- is the amount of calcium left in the skeleton and whether it places a person at risk for fracture or not.

In contrast, secondary osteoporosis is a result of medications, other conditions, or diseases.

According to the National Osteoporosis Foundation, certain people are more likely to develop osteoporosis than others. Known risk factors are listed below.

- **Gender** - Women have less bone tissue and lose bone more rapidly than men because of the changes involved in menopause.
- **Age** - One in two women and one in four men over age 50 will have an osteoporosis-related fracture in her/his remaining lifetime.
- **Race** - Osteoporosis poses a greater threat to Caucasian and Asian women, although African American and Hispanic women are also at risk.
- **Body type** - Women who are small-boned or thin are more susceptible to osteoporosis.
- **Genetics** - If a parent or sibling had osteoporosis, your likelihood for developing the disease is increased.
- **Lifestyle** - Low calcium intake (even as a child) and a sedentary lifestyle contribute to the development of osteoporosis.

Smoking, caffeine and alcohol abuse.

Vitamin D deficiency.

Soft drinks should be avoided due to their phosphorus content. Phosphorus is very acidic; it picks up calcium and takes it out of the body which in turn lowers the blood calcium levels. For the body to compensate and balance out the calcium levels, it starts pulling calcium out of the bones which leads to osteoporosis.

- **Medication** - some drugs, especially steroids and those used for rheumatoid arthritis and gastrointestinal problems, chemotherapy and anti convulsions, have side effects which can cause bone damage.

- **Prior fracture** - Breaking a bone in adulthood, especially after minor trauma.
- **Abnormal absence of menstrual periods (amenorrhea).**

Conclusion and natural ways of possible prevention:

One of the best ways to cope with menopause and osteopania/ osteoporosis is to stimulate the estrogen within the body via natural ways, (herbs, food and exercise) and that in turn will maintain the balance between the bone destruction & bone formation. The following foods are best avoided because they cause an acid condition that leaches minerals out of the bones:
refined sugars, honey, and white flour, including pasta, white bread, muffins, and of course baked flour desserts.

Herbs which contain a good source of estrogen:

Wild yam, red clover, isoflavones, Agnus castus, black cohosh, dandelion (for liver detoxifying to help achieving a balance within the body), angelica sinensis which is good for problems occurring due to estrogen deficiency, alfalfa, evening primrose.

Foods and herbs that are good sources of calcium:

Broccoli, green leafy vegetables, nuts, red clover, raspberry, oat straw, dandelion, fortified tofu, almonds, canned salmon, shrimps.

Good sources of vitamin D:

Eggs, liver and sunlight.

Foods and herbs that promote bone health:

Avocado, cabbage, cod liver oil, garlic, onions, parsley, dandelion, low levels of proteins, peach, strawberry (as they contain baron which is essential for vitamin D metabolism to help the bone calcification process).

Further tips:

1. Engage in regular weight-bearing exercise for at least 30 min a day (recent study showed that women who exercised vigorously one hour a day for a year increased their bone calcium levels by 33 percent).

Advanced Qi gong and T'ai Chi practitioners often have bones much stronger than normal.

2. Avoid smoking and excessive alcohol
3. Have a bone density test

Bone mineral density (BMD) tests are specialized tests which can measure bone density in various sites of the body. A BMD test can:

- Detect osteoporosis before a fracture occurs.
- Predict chances of fracturing in the future.
- Determine rate of bone loss and/or monitor the effects of treatment if a DXA BMD test is conducted at intervals of one year or more.

Wishing everyone good health and good bones..