

cycling, riding and dancing are also good. To counteract the rapid post-menopausal bone loss, sex hormones need to be added to the above measures. This applies in particular to women after oophorectomy (removal of the ovaries) or hysterectomy. Women with any of the other risk factors should also be given hormone therapy from the menopause onwards and for at least 10 years. Cessation of therapy is followed by the same rapid bone loss as is the menopause. Oestrogens unfortunately can have side effects. If they are given by themselves they stimulate the lining of the uterus which may cause bleeding and can lead to cancer of the uterus. A gynaecological examination every 6 to 12 months will guard against this complication. Better still, progestogens, the natural counterparts of oestrogens should be added to oestrogen treatment to avoid this stimulation. Such problems, of course, do not exist in women who have had a hysterectomy. Oestrogens are contra-indicated in women who have suffered from thrombosis or with a family history of breast cancer.

## TREATMENT OPTIONS FOR OSTEOPOROSIS

There are a wide range of therapies available for the prevention and treatment of osteoporosis. These therapies aim at building new bone so as to avoid new fractures. Since the preventive measures mentioned above only slow down further loss, an agent needs to be added which builds new bone. Therapies include:

### Selective Oestrogen Receptor Modulators (SERMs)

These are a class of drugs which bind to oestrogen receptors and inhibit bone resorption. An example of these is the SERM Evista® (raloxifene hydrochloride) which increases bone mineral density in the spine, hip and total body without stimulating the cells in the breasts or uterus. It has been shown to reduce an osteoporotic woman's risk of a first fracture by 50% and a subsequent vertebral fracture by 30%.

### Hormone Replacement therapy (HRT)

In the past, Hormone replacement therapy (a combination of oestrogen and / or progesterone) was used to control vasomotor symptoms of menopause like hot flashes and mood swings. Now it is also used as a preventive therapy against osteoporosis especially in women with low bone density as it helps decrease the rate of bone loss.

### Biphosphonates

These is a non hormonal treatment for the prevention of osteoporosis. They increase bone mineral density in women who have suffered one or more osteoporotic fracture, and reduce the incidence of subsequent fractures.

### Calcitonins

This is a hormone made by the thyroid glands which reduces the risk of vertebral fractures in postmenopausal women with osteoporosis. Calcitonin is administered by injection or nasal spray

### Calcium and Vitamin D Supplements

These are an effective treatment to reduce bone loss in the elderly. Calcium alone has a limited effect as a treatment for osteoporosis but when combined with vitamin D, it is a very helpful component for the elderly and housebound patients who cannot obtain natural sunlight and may have poor diet

Bone loss is greatest in the years immediately after menopause, it is therefore critical to use all the available resources to prevent and treat osteoporosis. Osteoporotic fractures should not be viewed as a normal and natural part of aging when help is now available. Early diagnosis through the use of bone mineral density scanning and the advanced identification of risk factors for the disease enable medical practitioners to identify women who can benefit the most from medication to reduce the risk of a first or subsequent fracture.

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Nairobi Arthritis Clinic

Fortis Suites, 1<sup>st</sup> Floor, Suite no 10, Hospital Road,

P.O. BOX 19701 - 00202 KNH, Nairobi - Kenya

Tel: +254-20-2729905 / 2711134,

Clinic Cell: +254 727 935 706 / 735 513 816

Email: geomondi@hotmail.com; nairobiarthritis@gmail.com

## NAIROBI ARTHRITIS CLINIC

Prof. Omondi Oyoo & Associates

CONSULTING PHYSICIANS AND RHEUMATOLOGISTS

## What is OSTEOPOROSIS



*Bone thinning for both men  
and women from  
the age of 35 years onwards...*

## WHAT IS OSTEOPOROSIS?

Osteoporosis basically is the thinning of the bone. Osteoporosis - "*porous bones*", is a disease that causes bones to become fragile and brittle and very susceptible to fractures under the normal strains of daily living (Spontaneous fractures). These fractures, occur typically in the hip, spine, and wrist. A fracture or broken bone can have a huge effect on one's life making it very difficult to do daily activities without help, causing disability, pain, or loss of independence.



## WHO GETS OSTEOPOROSIS?

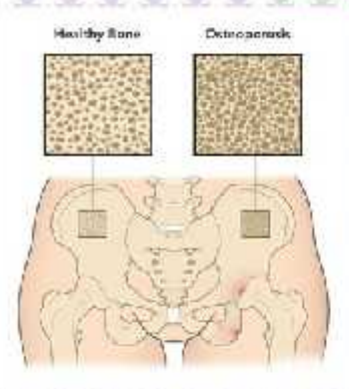
Both men and women gradually lose bone from the age of 35 years onwards. This is referred to as *age-related bone loss*. Women lose additional bone rapidly between 50 and 60 years when production of sex hormones (oestrogens) declines. This is known as *postmenopausal bone loss*. Since in men, sex hormone production begins to decline only about 15 years later bone loss is less severe. Women who have undergone early hysterectomy or who have had their ovaries removed are more likely to develop severe osteoporosis. Other *risk factors* for the development of osteoporosis include early menopause, white skin, low body weight, heavy smoking, alcohol abuse, a family history of osteoporosis and too little exercise. However, excessive exercise which can lead to a cessation of menstruation, also causes osteoporosis.

Bone loss is also accelerated by inadequate amounts of *calcium* in the diet and insufficient exposure to sunlight. Sunlight enables the body to produce *vitamin D* which in turn, promotes calcium absorption from the gut.

Not all menopausal women lose bone equally rapidly: 75% of women are "slow losers" while 25% are "fast losers". Thus 1 in every 4 women is in danger of developing spontaneous fractures of the spine, hips, wrist and other parts of the skeleton.

## DO I HAVE OSTEOPOROSIS?

Osteoporosis develops silently over many years and remains painless until bones break. Fortunately osteoporosis can be diagnosed before it becomes so severe. Bone density scanners permit accurate measurement of bone loss in the forearm and the spine. However these machines are expensive and currently available only in larger medical centres. X-rays can show up the thinning of bones but only after 30-50% of the bone has been lost.



## HOW CAN OSTEOPOROSIS BE PREVENTED?

Prevention is aimed at reducing both the bone loss of ageing and the rapid postmenopausal bone loss. *The bone loss of ageing* can be counteracted from an early age, i.e. the thirties. The daily *diet* should include foods that are rich in *calcium*. Milk and dairy products, such as cheese, yoghurt and ice-cream are the best sources of calcium. Individuals unable to tolerate lactose (milk

sugar) should take fermented milk products such as yoghurt, cheese and sour milk. Those wishing to avoid high fat intakes should eat low fat or fat free dairy products. Dark green leafy vegetables (such as spinach and broccoli) are also rich in calcium. The recommended daily amount of calcium is 1 gram (1000 milligrams), but over the age of forty, 1.5 grams are needed. One cup of milk has about one third of a gram (300 milligrams) of calcium. Those not taking the recommended amount of calcium in the diet should make up for the shortfall in tablet form. This applies especially to women over the age of 40 and those with risk factors. When taking calcium tablets it is important to remember that only the amount of elemental calcium in the tablet counts and not the amount of calcium salt (the substance which carries the calcium). One gram of elemental calcium in tablet form a day is usually needed.



It is also important to get adequate amounts of *Vitamin D* which is needed to absorb the calcium from the food. Fifteen minutes in the sun each day will meet the daily need for this vitamin. The sun must shine directly on some part of the skin since the ultraviolet

rays necessary for the formation of Vitamin D do not penetrate clothes or window glass. Individuals unable to expose themselves to sunlight should ask their doctor to prescribe vitamin D for them. The recommended daily amount is 400 international units but elderly people require 3 to 4 times as much.



Regular moderate exercise is another important preventive measure. An hour's walk a day slows down bone loss. Jogging,