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The Non-Medicated Life: Focus on Osteoporosis

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This is the fifteenth in a series on optimal diet and lifestyle to help prevent disease and responsibly avoid an over reliance on medications. This complementary approach is based in the medical evidence of the most successful research trials and the best science available. Any planned change in diet, exercise or treatment should be discussed with and approved by your personal physician before implementation. Consultation with a registered dietitian is strongly advised.

Medicines are a mainstay of American life and the healthcare system not only because they are perceived to work by the individual taking them, but also because they can be shown to work by the objective assessment of scientific study. Clinical research trials have shown that some of the medicines of Western science may reduce heart attacks strokes and cardiovascular death.

Other medicines may treat such chronic conditions as osteoporosis and actually increase bone density and decrease fracture risk. It is not always appreciated, however, that informed diet and lifestyle may accomplish many, if not most of the benefits of medication. Indeed, with respect to osteoporosis, proper diet and lifestyle practiced over a lifetime may prevent the disease and even after the disease is diagnosed will have an absolutely essential role in treatment.

Osteoporosis is a bone condition occurring most commonly as one ages in which the bone mineral density is reduced placing the individual at risk for a fracture. The fracture may occur in the vertebral bodies which make up the backbone or the hip bone, but may occur in any bone with reduced density. Osteoporosis, unfortunately, is the most common cause of a bone fracture and accounts for 1.5 million fractures per year in the United States. Osteoporotic fractures may be brought on by a fall, but may even occur with a seemingly minor trauma. Even a cough may fracture a rib in an osteoporotic individual. Osteoporotic fractures are not only painful – they may be disabling and a threat to life. Vertebral body fracture may cause chronic back pain and hip

fracture after a fall may not always be reparable surgically, and even if reparable, may not return the individual to normal functional status. Indeed, fully 20 percent of all hip fractures end up in a nursing home. Moreover, hip fractures increase mortality 280 to 400 percent during the first three months after the fracture. Unfortunately, until the moment of a fracture, osteoporosis is in large measure a silent disease. Therefore, one must have a strategy to avoid or prevent osteoporosis and the fractures it causes.

The strategy for preventing osteoporosis and fractures it causes begins with the recognition that assuring strong bones is a lifetime commitment. Teenagers and young adults, as well as mature men and menopausal women need to ensure that they take in adequate calcium and vitamin D, as well as get appropriate exercise and avoid tobacco. Because bone thinning is a natural accompaniment of aging, the greater the bone density early in life the less likely that a normal amount of bone loss would result decades later in a density so low that a fracture could result. For teenagers still growing bone 1,300 milligrams (mg) of calcium per day is recommended. From 19 years to 50 years 1,000 mg per day is optimal, but this increases to 1,200 mg per day for pregnancy or those older than 50. Low or non-fat dairy products are an excellent source of dietary calcium, skim milk having about 300 mg per cup and low fat yogurt 340 mg per cup.

For those who are lactose intolerant 3 ounces of sardines will provide 300 mg of calcium – or one may consider supplements such as Tums or Viactiv.

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Avoidance of cola soft drinks containing phosphoric acid as well as avoidance of high animal protein diets are important to ensure adequate calcium is absorbed. While adequate vitamin D may be gotten from very moderate exposure to sunlight, some may prefer a vitamin supplement. The recommended vitamin D intake is 200 international units (IU) per day for adults 19 to 50 years old and 400 IU for adults over 50. Those over 70 years-old may consider increasing the intake to 600 IU per day. A registered dietitian can be helpful for those wishing to get adequate calcium and vitamin D from food alone.

Exercise is critical to ensure that the calcium consumed actually gets into the bone. With the approval of one's physician, weight bearing exercises such as walking, running or dancing are considered best for maintaining spine and leg bone density. Upper extremity bones benefit from light resistance training. Exercise, especially in older individuals with bone loss and other medical conditions, should be supervised by a physical therapist experienced in working with those having osteoporosis.

Exercise may also increase muscle strength in the legs and back, improve gait as well as balance and lessen the likelihood of falls which are the primary mechanism by which osteoporotic bones may fracture. Moreover, in addition to living an active lifestyle with appropriate exercise, individuals who want to maintain bone strength need to avoid the use of tobacco. Individuals who smoke accelerate the rate of bone loss which occurs with aging.

In addition to these general guidelines for preventing osteoporosis, individuals will benefit from an assessment of their personal osteoporosis risk because further evaluation and testing of bone density may be warranted. Risk factors for osteoporosis include:

- Having a family history of osteoporosis
- Being small-boned, thin or having a small frame
- Smoking or using tobacco
- Being sedentary or getting little regular weight bearing exercise
- Consuming a diet low in calcium and vitamin D or high in animal protein
- Consuming cola soft drinks or excessive alcohol

Additionally, the use of certain medications may

increase osteoporosis risk including:

- Steroids, such as prednisone, when used for prolonged periods
- Thyroid medications, when taken in doses exceeding actual requirements as determined by blood tests
- Aluminum containing antacids, when overused
- Depo-Provera, when used for prolonged periods

Having such risk factors, especially when multiple, should lead the individual to seek medical advice from their physician as to whether specific testing may be warranted. The US Preventive Services Task Force recommends all women 65 years of age or older be screened with a bone mineral density test and those at increased risk on the basis of risk factors begin screening at 60 years old. Bone mineral density is usually measured by DEXA (dual-energy x-ray absorptiometry) which uses two x-ray beams to estimate bone density in the spine and hip.

When bone mineral density suggests osteoporosis and an increased risk of fracture, physicians may suggest the use of specific medications proven in clinical trials to increase bone density. It must be emphasized that medications to increase bone density only work with adequate calcium and vitamin D (as described above) and are also aided by appropriate exercise and avoidance of smoking, excess alcohol and cola soft drinks. When bone mineral density is reduced but not suggestive of frank osteoporosis – a condition called osteopenia – medicine may or may not be suggested, but close follow up is essential.

In summary, the medicines of Western science may effectively treat such chronic conditions as heart disease and osteoporosis. However, with respect to osteoporosis, it is also critical to emphasize that proper diet and lifestyle practiced over a lifetime may prevent the disease and even after diagnosis will have an essential role in treatment. As such diet and lifestyle are the foundation for assuring healthy bones and avoiding the proverbial bottle of pills to address one of our most serious health problems.

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