

**OSTEOPENIA AND OSTEOPOROSIS**  
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With Kate Gilday, Herbalist, Flower essence and Ayurvedic Lifestyle Counselor

***It's never too late — nor too early — to take control of your bone health!***

**Osteopenia**, mild thinning of the bone mass, is commonly seen in people over age 50 that have lower than average bone density but do not have osteoporosis. Osteopenia results when formation of new bone is not sufficient to offset normal bone loss.

**Osteoporosis**, which literally means porous bone, is a disease in which the density and quality of bone are reduced. As bones become more porous and fragile, the risk of fracture is greatly increased. The loss of bone occurs silently and progressively. Bone strength is influenced by many factors: genetics, body frame size, diet, calcium intake, vitamin D levels, hormonal balance, diet, stress, and lifestyle.

Viewed under a microscope, healthy bone looks like a honeycomb. When osteoporosis occurs, the holes and spaces in the honeycomb are much larger than in healthy bone.

But remember- bones are constantly regenerating, so every positive step you take to support their function will make a big difference.

\*\* The diagnostic difference between osteopenia and osteoporosis is the measure of bone mineral density.

**Key Risk factors** for that increase the likelihood of developing and aggravating osteopenia and osteoporosis are:

1. Being female- women are four times more likely to develop osteoporosis than men. During and in the five years after Menopause, there can be rapid bone loss due to a sharp decline in estrogen.
2. Having had a hysterectomy.
3. Vata constitution. Small-boned. Low body weight.
4. Heredity & race- Caucasians are at higher risk. Family history of osteoporosis.
5. Age- Most people lose about .5% of bone mass every year after the age of 50.
6. Lack of physical activity- especially weight bearing exercise such as walking, hiking, stair climbing, tai chi, yoga and dancing!
7. Sitting too long/ too much!
8. Poor diet/ Mineral deficiencies: especially of calcium, vitamin D3, magnesium, etc. Anorexia/ bulimia.
9. Medications- corticosteroids, ( prednisone) aluminum containing antacids, anti-seizure drugs and possibly thyroid hormones
10. Cigarette smoking and excessive alcohol or caffeine consumption.
11. Carbonated beverages.
12. Certain medical conditions: celiac disease, history of rheumatoid arthritis, personal history of bone fracture as an adult.

ALSO: Chronic stress causes the adrenals to produce excessive amounts of cortisol, which interferes with bone building. Stress also contributes to chronic inflammation throughout the body. This inflammation triggers accelerated bone breakdown by activating the cells that demineralize bone.

Ayurvedically, osteoporosis is considered a Vata disorder. Eating foods that balance Vata dosha (warming, moist, soft, sweet, sour and salty), creating a routine for working, meals and sleeping, *Abyhanga* (self-massage) with warm sesame oil daily and meditation all help with calming Vata. Warm milk with spices and the herbs Ashwagandha and Shatavari taken in the evening can be very beneficial!

Sesame seeds as source of calcium: Ayurvedic recommendation: During summer, soak one teaspoon of white sesame seeds in some water and leave them overnight on your kitchen counter. The next morning, drain the water and chew the seeds slowly. During winter, don't soak the seeds. Every morning, just chew one teaspoon slowly. You can top this with a half glass of warm milk, if you like. Add yoga to daily self care.

In Ayurvedic approach one must also look at the possibility of *Ama* blocking channels responsible for conveying nutrition to the bone tissue. It is important to clear this *Ama*.

Early signs of Osteoporosis: persistent lower back pain, frequent leg and foot cramps, gradual loss of height, dental changes such as loose teeth, gum infections and periodontal disease and sudden insomnia and restlessness. ( Thank you Susan Weed-Menopausal Years The Wise Woman Ways.)

What to Do to prevent and reverse: Daily exercise, whole foods, and nourishing herbs!

#### Importance of Exercise:

There are two types of osteoporosis exercises that are important for building and maintaining bone density: weight-bearing and muscle-strengthening exercises.

Weight bearing possibilities: dancing, hiking, stair climbing, tennis, aerobics. Low impact weight bearing- elliptical, treadmill or fast walking outdoors, low- impact aerobics. Tai chi.

Muscle Strengthening Exercises: Lifting weights, using elastic exercise bands, using weight machines, lifting your own weight, functional movements such as standing from chair position and rising up on toes.

Yoga and Pilates can also improve strength, balance and flexibility. However, certain positions may not be safe for people with osteoporosis or those at increased risk of broken bones. For example, exercises that have you bend forward may increase the chance of breaking a bone in the spine. A physical therapist should be able to help you learn which exercises are safe and appropriate for you.

**Maintain a healthy diet:** adequate amounts of nutrients. Consume plenty of protein and fat, mineral-rich vegetables, grains and beans. Bring herbs such as Nettles, Milky oats, and sea vegetables into your daily life.

Adequate calcium, magnesium and potassium intake boosts bone mineral density. Both magnesium and potassium, which come mainly from fruits and vegetables, may keep blood from becoming too acidic and causing calcium to leach from the bones. Vitamin K helps produce osteocalcin, a key protein used in bone remodeling. It blocks substances that speed the breakdown of bone and it helps regulate calcium excretion from the body in urine. When too much calcium is excreted, the body draws what it needs from bones. A 2002 study published in *Maturitas* concluded that therapy with vitamins D3 and K 2 might help increase bone mass in postmenopausal women.

**Calcium:** Get a sufficient supply of calcium from natural food source and mineral supplements. Foods high in calcium content include sesame seeds ( handful of sesame seeds gives at least 1,200 mg natural calcium. Think tahini! ), chia seeds, almonds, kale, bok choy, broccoli, sardines, salmon, carrots, coconut meat and oil, cheese and full-fat whole milk yogurt. ( one cup yogurt = 1/3 daily need for calcium- plus it has the fats needed to store the fat-stored vitamins!)

Recommended dose as follows: 1,200 mg calcium 600 mg magnesium 60 mg zinc

**Magnesium-** contributes to increased bone density and helps prevent the onset of **osteoporosis**. It is also mildly laxative; calcium can be constipating, The best sources of magnesium are found in legumes, nuts, whole grains, and green leafy vegetables. Green leafy vegetables contain chlorophyll, which contains magnesium.

### **Vitamin C:**

Vitamin C /Ascorbic acid is necessary to produce collagen; a protein needed to make tendons, ligaments, blood vessels, and skin. It may help to heal wounds, repair cartilage, mend bones, and aid the body in absorbing iron.

**Some of the best food sources** include oranges, grapefruit, strawberries, papaya, cantaloupe, green peppers, leafy green vegetables, broccoli, and tomatoes. Eating fresh fruits and vegetables insures the highest vitamin C content.

### **Vitamin D3 with K2:**

**Vitamin D** is necessary for normal growth and development of bones and teeth. Calcium cannot be absorbed into the body without vitamin D. A deficiency in vitamin D may cause **osteoporosis** (thin bone mass), osteomalacia (soft bones), **osteopenia** (subnormal mineralized bone), rickets in children (abnormal bone formation), and hypocalcemia (low levels of calcium in the blood).

Although sunlight is a natural source for vitamin D, it can be **found in many foods** such as fish liver oils (salmon, tuna, cod), fortified dairy products, mushrooms, egg yolks, and fortified cereals. Dose- 1,000 IU to 4,000 IU/day

**Vitamin K:** Vitamin K also aids cartilage repair and activates matrix Gla protein, or MGP, a protein essential for new cartilage growth. It also controls bone mineralization, and supports the development of new bone tissue.

**Significant amounts of vitamin K** are found in the following foods: Dark green leafy vegetables, - including chard, watercress, parsley, broccoli, Brussels sprouts, cabbage, cauliflower, chicken, green tea, turnip greens, dark green leafy vegetables, egg yolks, and asparagus. Also- and kale olive and canola oils. Cooking foods does not destroy vitamin K; however, freezing does.

**Herb Support :** drink 2-4 cups daily of nourishing herb infusions such as Nettles, Milky oats, alfalfa, comfrey, red clover, horsetail.

**Strong bones vinegar:** equal parts spring gathered horsetail, dandelion leaf, comfrey leaf and nettles in a quart jar, covered with organic apple cider vinegar. Shake daily for 2-4 weeks, strain and enjoy!

**Shatavari-** (*Asparagus racemosus*) it has been shown that in a study involving post-menopausal women *Shatavari* provided encouraging results on bone metabolism by preventing bone loss and enhancing bone formation. Dose: 6gms / day in two divided doses with milk for 10 weeks.

**Amalaki** is an Ayurvedic herb used to nourish the bones, and strengthen the teeth, hair and nails. Five grams of powder in one cup of water twice a day is used as a general tonic. Triphala can be used on regular basis as a tridoshic tonic.

Homeopathic Silicea strengthens bones.

**Bio-phosphates** as a choice:

Be careful in choosing allopathic drugs used in treating Osteoporosis: Evista, Fosomax and others. They may cause heartburn, headaches, constipation, diarrhea, muscle and joint pain, cramps, stomach pain, dizziness and tiredness, ulcers and possible femoral fractures. Although these drugs slow bone resorption and increase bone density short term, they are slowing overall bone turnover rate. Old or damaged bone is not removed as quickly and over time this may lead to further weakening of the bones. We will discuss these in class.

*Head outdoors, dance in the early morning light, garden, walk in the park, lift your grandchildren or your arms to the sun in gratitude for this amazing life!*

