NATURAL SOLUTIONS
Clinical Kinesiology, Acupuncture, & (w)Holistic Healthcare
Susan L. Levy, D.C., DABCO, FIACA
Author of Your Body Can Talk & Your AGING Body Can Talk
facebook/YourBodyCanTalk · YourBodyCanTalk2@Gmail.com · www.YourBodyCanTalk.com

Osteoporosis:
Preventing Bone Loss

Assessing Your Bone Loss Risk

Before we start, please take a few minutes and check True or False to the pre-evaluation questions below. This is not a test, simply a method to determine how much you understand about bone loss.

– Pre-Evaluation –
Understanding Bone Loss

	True	False
1. Your skeleton is predominately made up of calcium.		
2. Bone Loss in women is primarily an estrogen problem.	☐	☐
3. Protein in your diet has a significant effect on your skeleton.	☐	☐
4. Antacids may have an adverse effect on older people's skeletons.	☐	☐
5. Dairy products are not a good source of dietary calcium.	☐	☐
6. Hip fractures in the elderly can be a "killer disease".	☐	☐
7. Exercise can both help or hurt your skeleton.	☐	☐
8. Two cups of cooked Kale have more calcium than one cup of milk.	☐	☐
9. Control of your reducible risk factors is important in maintaining your skeleton.	☐	☐
10. Prevention of bone loss is dependent upon dietary intake of trace minerals such as iron, and iodine.	☐	☐
11. Bone loss is accelerated by fluoride additives in water and processed foods.	☐	☐

Preventing Bone Loss
– Your Fifteen Point Plan –

1. EXERCISE

Exercise is the most important feature of this 15 POINT PLAN. Bones need stimulation to activate formation. Inactivity causes bone thinning. Daily walking and hiking are the most beneficial for maintaining bone integrity. Gentle weight bearing activities can also increase bone density (low-impact aerobics, rope skipping, free weights, etc.) You should exercise 4-5 times per week to receive the most skeletal benefit. Remember to follow recommendations for safe exercise.

2. GOOD DIGESTION

Be sure that your digestive system is functioning properly. Malabsorption or maldigestion will decrease calcium excretion in the urine.

The following are some of the causes of poor digestion:

- Allergies to certain foods
- Poor combinations of foods
- Use of refined (junk) foods
- Stress and any chronic illnesses

Treatment can consist of identification of any allergies or chronic illnesses and their treatment, dietary changes, clearing the GI tract of any toxic waste products (enema/colonics), chiropractic care to decrease any nerve interference to the organs, therapeutic massage, acupuncture, and use of digestive enzymes or vitamins and supplements to aid digestion.

3. HEALTHY ENDOCRINE SYSTEM

The endocrine system is responsible for maintenance of the skeletal system. A problem in the function of any of the glands of this system can lead to bone loss.

PARATHYROID GLANDS: These glands are located behind the thyroid gland. They secrete parathormone which causes bone resorption (bone loss) in order to increase the amount of calcium in the blood.

The parathyroid hormones regulate osteolysis:

- Increase absorption of calcium from the GI tract
- Decrease secretion of calcium in breast milk
- Increase calcium taken from bone (osteoclasts)
- Decrease resorption of phosphates

THYROID: This gland secretes thyroxine, triiodothyronine, and several other closely related hormones that effect the metabolic rate of the body. The thyroid also releases the hormone calcitonin. Thyroid hormones increase growth of bone. Calcitonin decreases the loss of bone (decreases osteoclast activity), and increases bone building (osteoblastic activity), i.e., calcitonin regulates osteogenesis.

PANCREAS: This gland releases insulin and glucagon. Insulin is primarily responsible for blood sugar balance and can also affect calcium by decreasing its absorption in the kidney. Blood sugar problems can greatly alter bone density.

ADRENAL GLANDS: These glands are located on top of the kidneys. They are part of the body's stress-handling mechanism, blood-sugar maintenance, estrogen conversion, and allergy response. With weakened adrenals your hormonal balance can be altered, increasing your risk of bone loss. The adrenals can be harmed by excess sugar, salt, caffeine, refined fats, and drug use, as well as stress and fatigue.

OVARIES: The ovaries produce estrogen. Estrogen is a skeletal building hormone (increases osteoblastic activity).

TESTICLES: The testicles produce testosterone. This is a hormone that increases calcium retention and increases the quantity of bone.

STOMACH: The stomach produces hydrochloric acid that increases the breakdown of calcium in the stomach. The acidity of the foods in the stomach stimulates the pancreas and gallbladder to release their bile and enzymes thus ensuring proper digestion.

LIVER: Not ordinarily considered a part of the endocrine system. We feel that it is of great importance to bone development because of its effect on estrogen and hormonal balance. The liver breaks down all waste products that enter the body and all hormones at the end of their lifespan. If the liver is fatigued and not functioning, waste products build up, hormones are imbalanced, proteins for many of the body's chemical reactions are not made and bone loss can result. The liver is also involved with the blood-sugar balance and digestion of fats.

Health conditions that can influence bone density are:

- Adrenal Gland Dysfunction
- Arthritis
- Cancer
- Chronic Degenerative Diseases
- Diabetes Mellitus
- Early Surgical Menopause and Menopause
- Hyper/Hypoparathyroidism
- Hyper/Hypothyroidism
- Hypertension
- Kidney or Liver Disease
- Malabsorption/Maldigestion

4. LIFESTYLE CHANGES

Avoid Alcohol: Alcohol is converted into sugar in the body and can lead to a decrease in available calcium just as sugar excess can. Long-term alcohol use leads to deficiencies in vitamin C, Zinc, and Copper, as well as vitamins D, A, and E. All of these nutrients are necessary for bone health.

Avoid Caffeine: Caffeine is implicated in decrease of calcium absorption in the kidney and can cause more magnesium to be excreted. Caffeine also places a great deal of stress on the adrenal glands and the liver.

Avoid Cigarette Use: Smoking lowers the level of estrogen in the blood and increases bone loss in the jaw. Smoking also will decrease calcium absorption in the intestines.

Avoid Use of Over-The-Counter Drugs: Many of these drugs can decrease calcium absorption. Signs and symptoms of calcium deficiency due to drug use can include: nocturnal leg cramps, muscle spasms, easy fatigue, sore muscles after light exercise and nervous irritability.

Avoid Prolonged Use of Antacids: Antacids can lead to the following:

- Decrease organic phosphorous
- Increase in calcium lost in urine
- Fluoride competes with aluminum (in the antacid) and is lost
- Aluminum can deposit itself in bone and brain tissue
- Will cause a marked decrease in the acidity of the stomach and therefore decrease the digestion of calcium

5. INCREASE YOUR USE OF CALCIUM-RICH FOODS

Milk Products as A Source of Calcium: There is much discussion about the advisability of relying on dairy products for calcium. There are many disadvantages to heavy dairy product use, including:

- Allergy and lactose intolerance
- Incomplete digestion
- The addition of synthetic vitamin D to processed milk instead of natural forms of vitamin D
- Mucous production
- The true availability and absorption of calcium from dairy products is questionable

If using milk products, use skim or low-fat and hard cheeses (not soft or processed cheeses). These products have more available calcium with less fat and sodium. The fat content can decrease calcium absorption as well. The protein in milk products needs to be considered when calculating daily total protein intake. Please use other high calcium foods as well.

6. DECREASE YOUR USE OF PHOSPHOROUS FOODS

Foods with high phosphorous content cause decreased calcium absorption. The best ratio of calcium to phosphorous is 1:1 or 2:1, i.e., more calcium than phosphorous. Decrease or avoid the foods with a calcium-phosphorous ratio of higher than 1:8.

7. MAGNESIUM

Magnesium is a mineral needed for calcium absorption – it should be included and balanced in the diet and with any calcium supplementation. The best ratio of magnesium to calcium is 1:2, thus if taking 1000 mg of calcium/day, you should be sure you are getting 500 mg/day of magnesium. Dr. Guy Abraham feels that magnesium may be of more importance to bone health than calcium. Magnesium suppresses parahormone production and stimulates calcitonin production, i.e., with adequate magnesium there is more calcium going into the bone and less coming out of the bone. Magnesium is also involved with keeping calcium from depositing in the soft tissues.

8. OTHER MINERALS NECESSARY FOR BONE INTEGRITY

VITAMIN C: Bone minerals are deposited on a protein-rich matrix called collagen. The structure of collagen is dependent upon vitamin C. Supplement ranges = 2000 mg/day minimum. If you are a smoker or are under extreme stress, you will need additional vitamin C.

VITAMIN D: When in the active form, vitamin D is responsible for increasing the absorption of calcium. Vitamin D can be synthesized on the skin with sunlight exposure, it is found in some foods and can be taken as a supplement. Dosages of vitamin D supplementation should be monitored carefully as it can be toxic. The RDA is 400 – 4000 IU (10-100 micrograms) per day. People with diabetes mellitus, kidney or liver dysfunction, or decreased sunlight exposure may need vitamin D supplements. To enhance vitamin D levels:

- Treat any blood-sugar problems
- Maintain a positive calcium balance by increasing calcium
- Increase sunlight exposure
- Support liver and kidney function
- Use a health supportive diet that will supply all of the trace minerals and B vitamins for optimum health while decreasing foods that stress the system

VITAMINS A, E, AND THE B COMPLEX: These vitamins are all necessary for the maintenance of good health. They are involved with digestion, absorption, the health of the immune system, and endocrine glands. Your diet can increase their availability.

MINERALS: Zinc, Copper, Manganese, and Silicon are important for bone health as they facilitate bone formation. An imbalance of any of these minerals can lead to osteoporosis. Some people do not absorb minerals well and therefore will need the higher range doses for supplementation.

Silicon is a mineral that aids osteoblastic uptake of calcium. Sources of silica are springtime horsetail herbs, and there is a trace in all green vegetables and is especially high in alfalfa.

Mineral	General Dosage Range	Safe Dosage Range
Zinc	10-20 mg/day	Up to 50 mg/day
Manganese	2-10 mg/day	Up to 15-20 mg/day
Copper	5-10 mg/day	Up to 5-10 mg/day
Silicon	100-200 mcg/day	

Vegetarians need to be sure they are eating high-calcium foods.

9. USE A HEALTH SUPPORTIVE DIET TO AVOID SUGAR AND REFINED FATS

Sugar in the diet will cause an insulin release. As we noted with protein, this can lead to loss of calcium through the kidney. As insulin increases, calcium loss can increase 4-fold due to the sugar intake. Sugar can also lead to a loss of the minerals chromium and zinc and will increase internal stress levels.

Refined processed fats have many adverse effects in the body. They can complex with calcium and cause its excretion. They also congest the liver and decrease its function.

10. DECREASE YOUR USE OF SALT

Sodium and calcium compete for sites in the kidney to be re-absorbed. Increased sodium can lead to the following:

- Increase in bone resorption
- Intestinal calcium malabsorption
- Loss of calcium through the kidneys
- Increase in blood pressure
- Kidney disease

11. AVOID EXCESS PROTEIN

Protein is a recognized potentiator of insulin release. Insulin directly affects the kidney function at the level of calcium transport. As the insulin increases (due to increased protein and/or sugar), kidney loss of calcium increases. Also, protein break-down increases the amount of sulfur in the body. Calcium attaches to it to buffer and neutralize its effects, and is swept from the body.

Foods generally recognized as high-protein are also known to be “classic” allergy foods, i.e., milk, meats, eggs, wheat, and corn. An individual’s protein needs will vary with activity level and (lean) body mass. A generally accepted average range is 60-80 grams of protein per day, though many people do well with less if following a carefully balanced nutritional program.

12. ALKALINE/ASH RESIDUE DIETS

When eating excessive amounts of foods that leave an acid-ash residue in the body, the calcium absorption can be decreased. Eating more of the alkaline foods will assist the body to be able to use available calcium more efficiently.

13. WEIGHT MAINTANANCE

If you have a weight problem, the use of the above dietary, exercise, and health-related suggestions will help you to stabilize. Constant dieting can alter your mineral and vitamin balances and change your metabolic rate. The usual diet restricts the foods that will support your body’s needs.

14. USE SPROUTED GRAINS AND NATRUAL FIBER

With excessive use of unsprouted grains and seeds, you may get increased phytates and oxalic acids which can bind calcium. Use sprouted grains and seeds whenever possible as well as leavened bread if not allergic to yeasts.

Excess packaged fiber can complex with many of the minerals of the body can cause their excretion. The best sources of fiber are raw vegetables and fruits. Using these sources is far better for the body, easier to digest and assimilate than large quantities of packaged fiber and bran.

15. CALCIUM SUPPLEMENTATION

Suggested supplementary ranges = 800-1500 mg/day from your diet and supplements. The average diet supplies about 350-700 mg/day. Many doctors once advised patients to use Tums® for calcium and indigestion. However, the calcium available in antacids is calcium *carbonate*, which is not readily absorbed by most people.

When you review this entire 15-point plan and make adjustments to your lifestyle and diet, you will set the stage for healthy bones and be well on the way to preventing osteoporosis. My best wishes for your continued health.