

Osteoporosis 3: Related Drugs and Diseases

Readers Summary

1. What medical conditions predispose to bad bone?
2. What drugs are associated with bad bone?
3. What commonly used drugs may need to be discussed if bone loss is present?

What are some of the medical conditions that are associated with osteopenia or osteoporosis?

1. **Excessive alcohol intake** – greater than two drinks a day consistently will do it.
2. **Tobacco use** – This causes a 100 fold increase in bone loss. Oral tobacco is worse than inhaled smoke
3. **Stress** – any cause be it emotional, physical, mental, psychic all raise cortisol chronically and kill bone
4. **Lack of physical activity** increases obesity risk, which increases cortisol from leptin resistance
5. **Low calcium intake** or absorption from gastrectomy or low acid production from any reason
6. **Reduced strength and activity** due to a chronic illness or a sedentary life (checked with a grip test)
7. **Small build or leanness naturally** – correlates with BMI below 19 for women and men.
8. **Asian women** have a particular propensity to osteopenia genetically and from their diet.
9. **Drug therapy**, for example, long-term use of corticosteroids such as prednisone-used to treat rheumatoid arthritis, asthma, celiac disease, autoimmune

diseases, Crohn's disease, IBD, and ulcerative colitis.

10. **Low:** Magnesium, strontium, boron, Vitamin D3, Vitamin K2, elevated PTH levels, low sex steroid levels, high insulin levels, low progesterone levels, any cause of a leaky gut.
11. **Menopause**
12. **Andropause**
13. **Any cause of chronic inflammation** (perimenopause can cause severe acute bone loss)
14. **Disuse atrophy from any cause** (space travel)
15. **Paralysis**
16. **High carbohydrate diets**
17. **Veganism or a plant based diet**
18. **A diet high in whole grain** (carbohydrates) is especially risky due to mineral malabsorption in gut
19. **A diet lacking in animal protein** and animal fat and cholesterol.
20. **Excessive use of statins and thyroid hormone** can cause osteoporosis
21. **Age and sex** – the older one is predisposes to osteopenia. Women lose 1-3% of their bone density ever year after their last period.
22. **Chronic endurance athletics** of any type cause severe bone loss due to chronic cortisol elevations
23. **Gastric bypass patients** carry enormous osteopenic risks.
24. **Severe liver or kidney disease;** Renal insufficiency can lead to osteodystrophy.
25. **Diabetes**
26. **People with scoliosis of unknown cause** (idiopathic scoliosis) also have a higher risk of osteoporosis. I believe this is because most of these children have severe underlying Vitamin D deficiency and a leaky gut, but this has never been studied in the spine literature. Any time I see a scoliosis patient, I always screen for low sex steroid hormones, low Vitamin D levels, and low

Carboxylated osteocalcin levels. Bone loss can be a feature of complex regional pain syndromes, as they develop over time. It is also more frequent in people with Parkinson's disease and chronic obstructive pulmonary disease as well.

What are some of the common drugs that can cause osteoporosis:

- 1. Drugs used to treat seizures**, called anticonvulsants, cause osteoporosis when used chronically
- 2. Certain medications used to treat cancer**, called cytotoxic medications, also cause osteoporosis
- 3. Drugs called corticosteroids**, which are used to treat many illnesses, including rheumatoid arthritis, asthma, and autoimmune conditions. Studies show that within the first year after starting corticosteroid therapy, patients lose an average 14 percent of their bone mineral content. Also, some medications given to men or women to help get pregnant. Taking even low doses of oral prednisone (cortisone, prednisone, hydrocortisone, dexamethasone, and methylprednisolone), even less than 2.5 mg per day, are associated with a 20% increase in risk of vertebral fractures. For each 10 mg increase in dosage between patients, there is a 62% increase in risk for bone fracture. Drugs that "calm" your immune system, used after organ transplantation and to treat conditions like rheumatoid arthritis. METHOTREXATE and cyclosporin cause osteopenia/osteoporosis.
- 4. A drug called Lithium**, which you may take for a

condition known as manic depression. Lithium is used to treat patients with a bipolar disorder- a condition marked by periods of euphoria and high energy alternating with depression. One of its side effects is the increased production of parathyroid hormone, which in turn increases the breakdown of bone.

5. **A drug called heparin**, which thins your blood, can also cause osteopenia but it is rarely used long enough to do so.
6. **Coumadin** causes severe osteoporosis when it is used chronically by depleting Vitamin K2 stores.
7. **An injection called Depo Provera**, which helps prevent pregnancy, also causes osteopenia when used chronically.
8. **Thyroxine**, a drug you may take chronically if your thyroid gland isn't working properly. This one is very commonly missed by many.
9. **A drug called Anastrozole**, which is used to treat breast cancer is an anti-estrogen.
10. **Chronic use of antidepressants** (Prozac, Paxil, Zoloft) cause osteoporosis. SSRIs (selective serotonin reuptake inhibitors), Clozapine use in schizophrenia
11. **Insulin** (as a tx for diabetes) also increases fracture risk in people with diabetes, as shown in a 2001 study in the journal Diabetes Care. Actos and Avandia increase the risk of fractures after just one year of use by 57% in all women, and 72% in women sixty-five years or older (inhibitors of PPAR γ , have been linked with an increased risk of osteoporosis and fracture). Sulphonylurea also cause osteoporosis with chronic use.
12. **Heavy metals**, a strong association between cadmium, lead and bone disease has been established. Low level exposure to cadmium is associated with an increased loss of bone mineral density readily in both genders, leading to pain and increased risk of fractures, especially in

the elderly and in females. Higher cadmium exposure results in osteomalacia.

13. **Soft drinks** – some studies indicate that soft drinks (many of which contain phosphoric acid) may increase risk of osteoporosis. Others suggest soft drinks may displace calcium-containing drinks from the diet rather than directly causing osteoporosis.

Antacids with aluminum

These medications are used to treat heartburn, acid reflux, indigestion, excess stomach acid and ulcers. Some of these antacids are salts derived from mineral sources, including aluminum which impedes the absorption of calcium in the gut.

Popular aluminum-based antacids include:

- Aludros
- Amphojel
- Gaviscon
- Gelusil
- Kolantyl
- Maalox
- Mylanta
- Riopan

Non-aluminum-based antacids include:

- Alka-Seltzer
- Bisodol
- Mylicon
- Rolaid*
- Titralac*
- Tums*

Proton pump inhibitors (PPIs)

Proton pump inhibitors (or PPIs) are a group of drugs designed to reduce gastric acid. According to an article published in the Journal of the American Medical Association (JAMA), after just two years of taking acid blocking medications (Prilosec, Prevacid, Nexium, Protonix, Aciphex, Zantac) can increase the risk of fracture by 41%, and by nearly 60% after four years! Often people are kept on these drugs for decades without stopping their use and switching to Betaine HCL for a period of time. They are among the most widely sold drugs in the world, and are used in the treatment of conditions such as acid reflux (GERD), stress gastritis, and peptic ulcers. They are very profitable and until recently, few people knew about their major side effect of impeding calcium absorption in the gut due to low acid production. There is a growing amount of research suggesting that prolonged use of these drugs can inhibit calcium absorption and cause osteoporosis. If you have reflux, instead of blocking normal acid production you would be wiser to eliminate dietary omega 6 content which is what really causes GERD. High omega 6/3 ratios inactivate the muscular contraction of the lower esophageal sphincter by altering series two prostaglandin levels in the smooth muscle. This allows normal gastric acids into the distal esophagus due to poor muscle tone. The best way to reduce this risk is to reduce all industrial seed oils in your diet and avoid all processed foods from grocery stores and restaurants. Begin by cooking your own real primal foods at home.

Diuretics for HTN

Diuretics, or “water pills,” increase the volume of urine and

are used to treat high blood pressure and congestive heart failure. Loop diuretics are a particular problem for bone development as they cause the kidneys to excrete excess calcium. The most popular forms of this drug are Lasix, Aldactone, Dyazide, Bumex, Diamox and Edecrin.

On the other hand, the thiazide diuretics actually help you to preserve calcium because they decrease the urinary excretion of calcium. Hydrodiuril and hydrochlorothiazide are diuretics of this class commonly prescribed for mild high blood pressure, for water retention and sometimes along with other high blood pressure medications. You might ask your doc to consider a drug change if you have co morbid metabolic bone disease.

Drugs used for hair loss

All deplete the sex steroid hormones (testosterone) which protect your bone. Consider the loss of bone and libido before taking these drugs. Hypogonadal states can cause secondary osteoporosis. These include Turner syndrome, Klinefelter syndrome, Kallmann syndrome, anorexia nervosa, andropause, menopause hypothalamic amenorrhea or hyperprolactinemia from pituitary tumor, and lack of growth hormone production in women over the age of 40 and men over the age of 55.

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