



OSTEOPOROSIS HEALTH PLAN

The following health plan contains a list of nutrition and lifestyle habits that have been proven to help support bone strength. There are many references throughout this health plan to help you find more in-depth information on the website about different listed interventions. If you have not been able to find all the help you need on the website, please use the “CONTACT US” form on the HOME page to ask for an appointment with a Lifestyle & Nutrition Consultant.

UNDERSTANDING BONE PHYSIOLOGY

Bone is a dynamic living tissue that is constantly being remodeled. The breaking down and the rebuilding of bone are the result of the actions of two types of bone cells, osteoclasts and osteoblasts. Osteoclasts stimulate the production of acids and enzymes that dissolve minerals and protein in bone and thus promote bone breakdown. Osteoblasts create a protein matrix, primarily of collagen, that provides the structural framework upon which mineralization can occur. It is the imbalance between bone removal and bone replacement that results in the development of osteoporosis.

FACTORS THAT INCREASE RISK OF DEVELOPING OSTEOPOROSIS

There are several **unmodifiable** risk factors that increase a person’s risk for developing osteoporosis. As you read through the list below, highlight any of the factors that you think may be putting you at risk for developing osteoporosis.

1. Postmenopausal women
2. Advanced age
3. Family history of osteoporosis
4. Thinness
5. Long-term use of glucocorticoids
6. Weak gastric acid - decreases absorption of calcium and magnesium
7. Other conditions that cause secondary osteoporosis - hyperparathyroidism, rheumatoid arthritis, renal calcium leak

MODIFIABLE RISK FACTORS FOR OSTEOPOROSIS

There are many different **modifiable** risk factors that increase a person's risk for developing osteoporosis. The key word in the sentence is "**modifiable**" – that is, you can do something about these risk factors. As you read through the list below, highlight each of your "modifiable" osteoporosis risk factors.

1. Smoking
2. Sedentary lifestyle
3. Seldom getting outside in the sunlight
4. Chronic low-grade inflammation (i.e. autoimmune diseases, arthritis, gut inflammation, etc.)
5. Inadequate calcium intake
6. Low blood levels of vitamin D
7. Inadequate vitamin K intake
8. Inadequate intake of magnesium
9. Inadequate consumption of trace minerals (boron, zinc, copper, manganese)
10. Excess or inadequate protein intake
11. Acid forming diet – high content of dairy products and meat (more than 4 oz of meat per day), and low in fruits and vegetables
12. Drinking 2 or more cups of coffee a day – 3 or more cups of coffee associated with increased risk for osteoporosis
13. High salt intake – sodium intake exceeding 2400 mg/day increases calcium excretion
14. High sugar and/or corn syrup intake
15. Drinking soft drinks
16. Utilizing acid blocking medications used to treat stomach conditions (i.e. ulcers, GERD)

LIFESTYLE HABITS THAT HELP BALANCE "BONE REMOVAL AND BONE REPLACEMENT"

Here is a list of lifestyle habits that help keep the balance between bone removal and bone replacement. As you read through the list, highlight all the habits you are already doing. Then go back through the list and put a check mark by the habits that you would like to try to adopt.

- Don't smoke or begin a smoking cessation program
- Perform weight bearing exercise most every day of the week (total of 3 hours a week)
- Perform strength training 2 times a week [For more information about weigh bearing exercise and strength training go to <https://positivepatterns4life.com/thrive> and click on the *Get Moving* link which will take you to the *Get Moving* page.]
- Practice healing visualizations [For more information go to <https://positivepatterns4life.com/thrive> and click on the *Think Positive* link which will take you to the *Think Positive* page.]
- Identify and take actions to minimize chronic low-grade inflammation [To learn about the anti-inflammatory diet and anti-inflammatory supplements go to <https://positivepatterns4life.com/thrive> and click on the *Eat Healthy* link which will take you to the *Eat Healthy* page.]

- Limit use of acid blocking medications to treat gastrointestinal conditions

NUTRITION HABITS THAT HELP BALANCE “BONE REMOVAL AND BONE REPLACEMENT”

Here is a list of nutrition habits that help keep the balance between bone removal and bone replacement. As you read through the list, highlight all the habits you are already doing. Then go back through the list and put a check mark by the habits that you would like to try to adopt.

- Eat to meet your protein needs [0.8 grams per kg of weight] and limit protein from meat to 4 oz/day
- Eat LOTS of fruits and vegetables – good sources of minerals needed to build bone plus they have an alkalizing effect on the body [To learn about foods that have an alkalizing effect on the body go to <https://positivepatterns4life.com/thrive> and click on the *Eat Healthy* link which will take you to the *Eat Healthy* page.]
- Eat green leafy vegetables (kale, collard greens, parsley, cabbage, broccoli) to get your vitamin K1
Choose healthy fats – monounsaturated (i.e. olive oil, nut oils, avocado) omega 3 (i.e. fish, flax, chia, hemp), short chain saturated fat (coconut oil)
- Limit saturated fats (meat and dairy fats) and polyunsaturated fats (seed and vegetable oils)
- Avoid trans fats and hydrogenated oils [To learn about the healthy and unhealthy fats go to <https://positivepatterns4life.com/thrive> and click on the *Eat Healthy* link which will take you to the *Eat Healthy* page.]
- Consume whole **soy** foods – 1 to 2 servings per day
- Drink **green tea** - 3 to 5 cups of green tea per day
- Limit sodium intake to 2400 mg/day
- Limit coffee to 2 cups a day
- Avoid sugar and calorie containing sweeteners
- Avoid consuming soft drinks

SUPPLEMENTS THAT SUPPORT BONE REPLACEMENT AND REPAIR

Before you read through the list of supplements, grab all of your supplements that you take. Compare ingredients in your supplements you are taking with the list below. Highlight all the supplements you are currently taking and make note of the doses. Make sure you have taken a close look at your multivitamin, because it should contain many of these nutrients.

When you finish this task, you will be able to see nutrients that you are missing. Now it will be time to decide if you want to add any of these missing nutrients to your current supplement regimen. Put a check mark by the supplements you would like to add to your daily regimen.

- Vitamin D3 – 2000 IU up to 5000 IU (Doctor to measure blood levels and adjust accordingly)

- B vitamins:
 - Vitamin B6 – 25 to 50 mg/day
 - Folic acid – 800 mcg/day
 - Vitamin B12 – 800 mcg/day
- Vitamin C at least 200 mg/day
- Vitamin K2 (MK7) – 100 mcg/day
- Calcium 1200 mg/day – Don't overdo it on calcium ... Total up the amount of calcium you are getting from daily dairy intake (i.e. 250 mg per 8 oz of milk X 2 = 500), then subtract this amount from the 1200 mg. This will give you the amount of calcium that you need to take as a supplement (i.e. 1200 – 500 = 700 mg). Take calcium with a meal to increase absorption. Calcium citrate, lactate, or gluconate absorb better than calcium carbonate.
- Magnesium 350 to 500 mg/day
- Zinc – 8 mg/day
- Boron – 3 mg/day
- Copper 3 mg/day
- Manganese – 1.8 mg/day
- Omega 3 fatty acid with EPA and DHA -1000 mg/day (fish oil highest quality source)
- Digestive enzymes with hydrochloric acid supplementation
- Pre- and probiotics support a healthy gut microbiome – friendly bacteria facilitate and increase calcium absorption. Unfriendly bacteria cause low grade inflammation of the gut lining which interferes with function/absorption.
- BioSil 6 mg daily (a choline-orthosilicic acid which is a highly bioavailable form of silica)
- Soy isoflavones – 90 mg/day OR Ipriflavone - 200 up to 600 mg per day (a semi-synthetic isoflavonoid similar to the structure of soy isoflavones)
- Explore natural treatments and/or interventions for menopause.

HELP WITH CHANGING HEALTH HABITS

Changing health habits can be challenging. *Positive Patterns for Life* offers a variety of methods, skills and tools to help support you during your habit change journey. One of the most helpful tools found on the website is the *Positive Patterns for Life Goals Chart*. It has blank spaces for you to write in your new habits that you want to work on adopting. It has instructions to guide you on how to best use the goals chart and encouraging quotes to help you stay motivated during your health improvement journey. Make sure to check out all the resources in the *Changing Health Habits* section at the bottom of the THRIVE page at <https://positivepatterns4life.com/thrive>.

REFERENCES

1. Murry, Michael, Pizzorno, Joseph. (2012) *The Encyclopedia of Natural Medicine*. (Third Edition). New York, NY: Atria Paperback.
2. Rakel, David. (2013) *Integrative Medicine*. (Fourth Edition). Philadelphia, PA: Elsevier.
3. Murry, Michael. (1996) *The Encyclopedia of Natural Supplements*. New York, NY: Three Rivers Press.
4. Haas, Elson, Levin, Buck. (2006) *Staying Healthy with Nutrition the Complete Guide to Diet and Nutritional Medicine*. Toronto Canada: Celestial Arts.