

Diet and Lifestyle Checklist for Healthy Bones

Nutrition Recommendations

The optimal eating plan for building and maintaining strong bones includes mostly whole foods containing a variety of minerals, vitamins, and phytochemicals. This type of eating pattern supports the absorption of calcium, provides nutrients needed to build bone and limits bone breakdown.

Consume daily:

- ☐ **3–4 servings of high-calcium foods** (e.g., dairy, small fish with bones [e.g., sardines], dark leafy greens)
 - The RDA for calcium is 1,000-1,300 mg for ages 4 and above (with variations based on life stage)
 - Most of this should come from natural dietary sources (as opposed to supplements or fortified foods)
- ☐ **3–5 magnesium rich foods** (e.g., pumpkin seeds, spinach, Brazil nuts)
- ☐ **Non-starchy vegetables** - work up to 3-6 cups of a colorful variety including dark, leafy greens
- ☐ **2-3 servings of fruit**
- ☐ **Appropriate portion of whole grains or starchy vegetables instead of refined grains** (e.g., wild rice replaces white rice)
- ☐ **1–2 forkfuls of [fermented foods](#)** (e.g., kimchi, fermented sauerkraut/pickles, natto, kefir, yogurt)
- ☐ **1–2 cups of green or black tea**

Consume multiple times per week:

- ☐ **Grass-fed, pastured meats, poultry, eggs, butter, and/or ghee** in place of the conventional versions
- ☐ **Low mercury, high [omega-3 fatty acid fish](#)** (e.g., wild salmon, herring, sardines) - 3 times per week
- ☐ **Organic, whole soy foods** such as tempeh, tofu, miso, edamame or natto

Limit / Remove:

- ☐ **Ultra-processed foods** (e.g., sweetened beverages, cookies, ice cream, candy, pastries, crackers, bread, pasta, white rice) to avoid excessive:
 - added starches, sugars, and chemicals which are inflammatory and bad for the bones
 - sodium which can increase the amount of calcium you excrete in your urine
 - phosphorus which can interfere with how much calcium is absorbed through your small intestine
- ☐ **Alcohol** - more than 1-2 servings per day is associated with osteoporosis
- ☐ **Excessive caffeine intake** - more than 2-3 8 oz cups of regular coffee per day may increase calcium loss

* If you have gastrointestinal issues, work with a registered dietitian nutritionist and/or other health care provider to restore gut health so that you can absorb and use the nutrients you are taking in.

Lifestyle Recommendations

Movement, proper sleep, and other activities that support our physical and mental health activate neurochemicals and hormones that are bone-building and bone-protective.

- ☐ Move your body. Include strength training, weight-bearing and balance exercises throughout the week.
- ☐ Get 8 hours of [quality sleep](#) per night.
- ☐ Spend time outdoors daily. Get natural light exposure and avoid bright lights after sunset.
- ☐ Manage your stress. Practice deep breathing (e.g., [4-7-8 breath](#)) or [biofeedback](#) every day.
- ☐ Create balance in your life. Do uplifting activities daily. Remove toxic relationships. Balance work and play.

Supplement Safety and Optimization

Ask your registered dietitian or other health care provider before starting new supplement to find out:

- Which forms are best absorbed, least likely to be contaminated, and most suitable for you.
- If it will change the effectiveness of other medications and supplements you are taking.
- Optimal timing for taking your supplements so they don't interfere with medications.
- If you are at risk of over-supplementing, especially if you take supplements with more than one active ingredient.

Supplements to consider based on diet and health needs:

- **Vitamin D3** – if blood levels are suboptimal (below 50). A quality multivitamin may supply enough for you.
Vitamin D supplements with vitamin K2 may help direct calcium to the bones.
 - Pure Encapsulations O.N.E. (multivitamin with 2000 IUs D3 per capsule)
 - Carlson Labs Vitamin D3 & K2 (1000 IUs D3/ 45 mcg K2 per capsule)
 - Nordic Naturals Vitamin D3 & K2 (2000 IUs D3/ 90 mcg K2 per capsule)
 - Seeking Health Vitamin D3 & K2 (5000 IUs D3/ 100 mcg K2 per capsule)
- **Calcium** – if intake from natural foods does not meet your needs. Supplements with no more than 500 mg of calcium that include magnesium and vitamin D3 may help with calcium absorption and utilization.
 - Thorne Advanced Bone Support (1 capsule contains 150 mg Ca, 500 IUs D3, B vitamins, Mg, Boron)
 - SFI Health Health OsteoThera Plus Ipriflavone (1 capsule contains 125 mg Ca, 100 IUs D3, 50 mcg K2, Mg, Boron, Ipriflavone)
 - Pure Encapsulations Calcium/K/D (1 capsule contains 200 mg Ca, 500 IUs D3, 15 mcg K2)
 - Vinco Osteosheath (1 capsule contains ~200 mg Ca, 200 IUs D3, 17 mcg K2, other micronutrients)
- **Magnesium**
 - Douglas Labs Magnesium Glycinate (120 mg per capsule)
 - Allergy Research Group Magnesium Citrate (170 mg per capsule – may also help with constipation)
 - CALM Magnesium Powder (175 mg magnesium citrate & glycinate per teaspoon)
- **Omega-3 fatty acids**
 - Nordic Naturals Pro Omega 2000 (1000 mg EPA + DHA per soft gel)
 - Nordic Naturals Pro Omega Lemon Liquid (1235 mg EPA + DHA per teaspoon)
- **Collagen** – [emerging research suggests that this may be helpful](#)
 - Designs for Health Whole Body Collagen (12.5 g collagen peptides from [Fortigel](#), [Fortibone](#), and [Verisol](#) per scoop [13 g])
 - Vital Proteins Bone & Joint Support (10 g collagen from FORTIBONE® and FORTIGEL®, 250 mg Ca, 840 IUs D3, 120 mcg K2 per 2 tablespoons [12 g])
- * SAS employees and household family members/dependents can receive 35% off high-quality supplements by using their HCC Fullscript account.

Supplement Timing: The best supplement schedule is the one you can stick with consistently. To optimize absorption of nutrients further, check out the following tips:

- Take your multivitamin with meals for more effective absorption of the fat-soluble vitamins.
- If taking a calcium supplement >200 mg or a magnesium supplement >250 mg per dose, take it 1-2hrs separately from a multivitamin or supplement containing zinc, iron, folate or fiber.
- Take calcium or magnesium supplements ≥ 4hrs apart from thyroid medication.
- Take magnesium supplements 2hrs apart from H2 blockers for reflux (Pepcid, Zantac, etc.).
- Sample schedule:
 - Breakfast (before or with) – multivitamin, fish oil, vitamin D
 - Lunch – calcium supplement
 - Dinner or before bed – magnesium supplement

Recommended Foods that Contain Key Nutrients for Bone Health

Calcium		
Food	Serving Size	Approximate Calcium ¹ (mg)
Dairy and Dairy Alternatives*		
Almond milk, unsweetened, fortified *	1 cup	380-415
Oat milk, unsweetened, fortified *	1 cup	300-350
Soy milk, unsweetened, fortified *	1 cup	240-370
Cow's milk (skim, 1%, 2%, whole)	1 cup	305-325
Kefir, plain	1 cup	300-400
Yogurt, plain, whole milk	1 cup	290
Parmesan cheese	¼ cup	270
Greek yogurt, plain, whole milk	1 cup	250
Swiss cheese	1 slice	195
Mozzarella or cheddar cheese	¼ cup	150
Cottage cheese	½ cup	70-120
Fruits		
Figs, dried	3 figs	40
Kiwi, peeled	1 large (100 g)	25
Blackberries	1 cup	20-25
Vegetables		
Rhubarb, cooked	1 cup	350
Collards, cooked	1 cup	270
Spinach, cooked	1 cup	250
Turnip greens, cooked	1 cup	200
Broccoli rabe, cooked	1 cup	185
Kale, cooked	1 cup	175
Bok choy, cooked	1 cup	160
Okra, cooked	1 cup	100
Kale, raw	1 cup	50
Broccoli, raw	1 cup	35
Legumes, Seeds and Grains		
Cereals, fortified	½ -1 cup	250-1000
Tofu, made with calcium sulfate	½ cup	140-250
Soybeans, cooked	1 cup	260
Sesame seeds, toasted	2 Tbsp	180
Navy beans, cooked	1 cup	125
Pinto beans, cooked	1 cup	110
Almonds, toasted unblanched	¼ cup (or approx. 24 nuts)	93
Tortillas, corn, 6"	2	90
Chickpeas, cooked	1 cup	85
Chia seeds	1 Tbsp	80
Fish		
Sardines, canned in oil, with bones	3.75 oz can	350
Salmon, canned with bones	3.75 oz can	225
Other		
Blackstrap molasses (use sparingly in place of other added sugars)	1 tsp	60
Eggs	2 large	50

Vitamin K2

Grass-fed dairy; grass-fed, pastured meats; egg yolk; fermented foods such as kimchi, probiotic sauerkraut, etc.

*[Vitamin K2](#) content is not listed on nutrition facts labels and varies dramatically based on production methods.

Magnesium		
Food	Serving Size	Approximate Magnesium ¹ (mg)
Pumpkin seeds, roasted	¼ cup	160
Spinach, cooked from fresh	1 cup	155
Swiss chard, cooked from fresh	1 cup	150
Hemp seeds, hulled	2 Tbsp	105
Brazil nuts	1 oz (or 6 nuts)	105
Okra, cooked from frozen	1 cup	95
Almonds, roasted	1 oz (or 24 nuts)	80
Cashews, roasted	1 oz (or 16 nuts)	75
Peanuts, roasted	¼ cup	65
White beans, cooked	½ cup	65
Black beans, cooked	½ cup	60
Edamame, shelled, cooked	½ cup	50
Hazelnuts, roasted	1 oz (or 21 nuts)	45

Vitamin D ²		
Food	Serving Size	Approximate Vitamin D ¹ (IU)
Cod liver oil	1 Tbsp	1,360
Salmon, sockeye, cooked	3 oz	445
Sardines, canned in oil, with bones	3.75 oz can	180
Tuna, canned in water, drained	3 oz	155
Milk, vitamin D-fortified	1 cup	115-125
Yogurt, vitamin D-fortified	6 oz	80+
Eggs (vitamin D is in the yolk)	2 large	80

EPA and DHA Omega-3 Fatty Acids		
Food	Serving Size	Approximate EPA + DHA ¹ (g)
Salmon, cooked	3 oz	1.6 -1.8
Herring, cooked	3 oz	1.7
Sardines, cooked	3 oz	1.2-1.8
Rainbow trout, cooked	3 oz	0.8
Mackerel, cooked	3 oz	0.5-1.0

How Much Do I Need a Day?						
Age (yr)	Calcium (mg)	Magnesium (mg)		Vitamin D (IU) ⁴	Vitamin K (mcg)	EPA and DHA (g)
		Female	Male			
2-3	700	80	80	600	30	0.7
4-8	1000	130	130		55	0.9
9-13	1300	240	240		60	1.1-1.2
14-18	1300	360	410		75	1.1 (Female) 1.6 (Male)
19-50	1000	320	420		90-120	
Postmenopausal women	1200	320	420		90	
70+ years men & women	1000-1200	320	420		90-120	
Pregnant or lactating women	1000	350-360		800	90	
Dietary Guidelines for Americans 2020-2025*						

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Nutrient content data from USDA Nutrient Database, International Osteoporosis Foundation, and Nutrition Facts Labels.

¹ Nutrient content varies by cultivation location/method, brand and method of production.

² Food sources of vitamin D and exposure to sunlight are not always adequate for many people to maintain optimal vitamin D levels. Have your vitamin D levels checked to determine if you need to supplement or not.

³ Meeting the dietary guidelines for Vitamin D may not be enough to prevent deficiency for all individuals. Ask a Registered Dietitian Nutritionist or other Health Care Provider if you have questions.

Meal and Snack Ideas to Support Bone Health

Choose a variety of meals to create an anti-inflammatory eating pattern that targets calcium, magnesium, omega 3 fatty acids, and protein goals.

Breakfast

- Broccoli rabe, mushroom and Swiss cheese omelet made with pastured eggs
- Greek yogurt chia pudding
- Cottage cheese with chopped dried figs and Brazil nuts
- Smoothie with silken tofu, spinach and kiwi (V)
- Amaranth bowl with berries and tahini with blackstrap molasses (if needed for sweetness) (V)
- Tofu scramble with ½ grapefruit on the side (V)
- Berry tahini smoothie (V)

Snacks (These can also be part of your breakfast or any other meal.)

- Fruit and cheese
- Ranch roasted nut and seed mix
- Tuna apple bites
- Overnight steel cut oats
- Apple slices with cinnamon dipped in cottage cheese
- Bell peppers and carrots with white bean hummus (V)
- Banana with almond butter (V)
- Avocado with everything but the bagel seasoning

Lunch* and Dinner

- Sardine fish cakes served over Swiss chard
- Grilled skinless chicken tenders served with kale chips and a cup of kefir
- Grilled shrimp salad with Greek yogurt cilantro dressing
- Instant pot mongolian grass-fed beef with black rice and bok choy garnished with sesame seeds
- Pork tenderloin with probiotic sauerkraut sweet potatoes and green beans
- Spinach and white bean burrito or quesadilla with fresh salsa and guacamole
- Mediterranean bowl with salmon
- Pumpkin seed pesto spinach, quinoa & grass-fed skirt steak salad
- Oven fried salmon and sardine cakes over dark, leafy greens and Yukon gold potato wedges
- Carolina harvest protein bowl (V)
- Vegetarian chili with farro topped with kimchi, with an arugula side salad (V)
- Soybean pasta with sautéed Swiss chard, mashed avocado, garlic and salt (V)
- Sheet pan tempeh and broccoli (V)
- Szechuan tofu and veggies (V)

*Lunch can easily be last night's dinner leftovers served over a bed of leafy greens, or make 1-2 extra entrees on the weekend and divide them up to have for your lunch throughout the week.

Underlined items link to recipes.

V = vegan option