

Calcium and Vitamin D

What are calcium and vitamin D?

- Calcium and vitamin D are nutrients you need to maintain bone strength and density.
- You need calcium for blood clotting, muscle contraction, and normal nerve function.
- You need vitamin D for calcium absorption and transport to the bones.



How much do I need?

Calcium: A measurement of calcium in the blood does not tell us if you are receiving enough of this nutrient in our diet. Therefore, we use the recommended intake levels listed in the table on the next page.

Vitamin D: Vitamin D levels are measured with a lab test called 25-hydroxy vitamin D. The SCCA normal reference range for 25-hydroxy vitamin D is 30-50 mg/ml.

You might need more calcium and vitamin D if you:

- Are taking prednisone or a similar corticosteroid drug.
- Have osteopenia or osteoporosis.
- Are a child or teen.
- Are older than 70 years.

How do I read a food label for calcium and vitamin D content?

Read nutrition facts panels for calcium and vitamin D content. Calcium is measured in milligrams (mg), and vitamin D is measured in micrograms (mcg). Vitamin D may also be measured in International Units (IU); 1000 IU is equal to 25 mcg.

Daily calcium and vitamin D requirements

| Age and sex | Calcium (mg) | Vitamin D (mcg) |
|--|--------------|-----------------|
| Male or female 1-3 years | 700 mg | 15 mcg |
| Male or female 4-8 years | 1000 mg | 15 mcg |
| Male or female 9-18 years | 1300 mg | 15 mcg |
| Female 19 –70 years | 1200 mg | 15 mcg |
| Male 19-70 years | 1000 mg | 15 mcg |
| Male or female <u>> 70 years</u> | 1200 mg | 20 mcg |
| Receiving steroid therapy: | | |
| 1-5 years | 1000 mg | 15mcg |
| 6-8 years | 1200 mg | 15mcg |
| 9-18 years | 1500 mg | 20mcg |
| ≥18 years | 1500 mg | 25mcg |
| Adults with osteopenia or osteoporosis | 1500 mg | 25mcg |

Choosing a calcium and vitamin D supplement

If you are unable to get enough calcium or vitamin D from food, consider a supplement. Vitamin D can either come in a calcium supplement or be taken separately. Discuss which is best for you with a dietitian.

Tips to remember when taking a supplement

- Take supplements 2-3 times a day for better absorption. We only absorb up to 500 mg at one time.
- Do not take a calcium supplement within 2 hours of MMF or Myfortic®.
- Calcium citrate products such as Citracal® can be taken with or without food.
- Calcium carbonate, gluconate and phosphate products such as Caltrate®, calcium chews, gummies, and Tums® must be taken with food for best absorption and to prevent stomach and/or intestinal upset.

Calcium content of selected supplements

| Calcium supplement | Serving size | Calcium (mg) | Vitamin D (mcg) |
|---------------------------|--------------|--------------|-----------------|
| Caltrate 600 + D® | 1 | 600 | 10 |
| Citracal + D® | 1 | 315 | 5 |
| Calcium + vitamin D chews | 1 | 500 | 5 |
| Tums® D. | 1 | | |
| ○ Regular Strength | 1 | 200 | 0 |
| ○ E-X | 1 | 300 | 0 |
| ○ Ultra | 1 | 400 | 0 |
| ○ 500 Calcium Supplement | | 500 | 0 |
| Calcium gummies | 2 | 500 | 25 |

Most multivitamins contain 200 mg calcium and 10 mcg vitamin D. You can get the rest of your calcium and vitamin D with diet and/or supplements. See tables below for high calcium and vitamin D content foods.

Foods with high calcium content (actual amount varies by brand)

| Food | Serving size | Calcium (mg) |
|---|---------------|--------------|
| Dairy | | |
| Milk (nonfat, 1%, 2%, whole, buttermilk) | 1 cup | 300 |
| Nonfat milk powder (dry) | 1/3 cup | 300 |
| Kefir | 1 cup | 250 |
| Yogurt | ¾ - 1 cup | 200-500 |
| Ricotta cheese | ½ cup | 300 |
| Swiss cheese | 1 oz | 270 |
| Cheddar, mozzarella, Monterey jack cheese | 1 oz | 200 |
| String cheese stick | 1 oz | 150 |
| Parmesan cheese | 1 Tablespoon | 70 |
| Cottage cheese | ½ cup | 70 |
| Dairy alternatives | | |
| Soy milk | 1 cup | 300 |
| Almond milk | 1 cup | 450 |
| Coconut, oat, rice milk | 1 cup | 200-400 |
| Almond, soy, coconut yogurt | ¾ - 1 cup | 50-200 |
| Plant foods | | |
| Tofu, firm | ½ cup | 130 |
| Soybeans, cooked and shelled | ½ cup | 90 |
| Juice, calcium-fortified | 1 cup | 300 |
| Breakfast cereals, calcium-fortified | 1 cup | 200-500 |
| Protein bar | 1 bar | 200-350 |
| Greens, raw (turnip, bok choy, collards, chard, dandelion, mustard, beet) | 1 cup | 150-180 |
| Spinach, cooked | ½ cup | 120 |
| Broccoli | 1 cup | 100 |
| Beans (black, kidney, garbanzo, white, pinto, etc) | ½ cup | 40-75 |
| Almond butter | 2 Tablespoons | 85-100 |
| Nuts (almonds, hazelnuts, walnuts, Brazil nuts) | ¼ cup | 100-150 |
| Sesame seeds | 1 Tablespoon | 90 |
| Other | | |
| Sardines, with bones | 3 oz | 150-200 |

Foods with high vitamin D content (actual amount varies by brand)

| Food | Serving size | Vitamin D (mcg) |
|--|--------------|-----------------|
| Seafood | | |
| Herring | 3 ounces | 32 |
| Halibut | 3 ounces | 13 |
| Canned salmon | 3 ounces | 13 |
| Mackerel | 3 ounces | 8 |
| Canned tuna | 3 ounces | 5 |
| Shrimp | 3 ounces | 4 |
| Sardines | 2 each | 1.5 |
| Milk and soy products | | |
| Milk (nonfat, 1%, 2%, whole, buttermilk) | 1 cup | 2.5 |
| Soy milk, calcium/vitamin D fortified | 1 cup | 2.5 |
| Tofu | ½ cup | 3 |
| Other | | |
| Juice, calcium/vitamin D fortified | 1 cup | 2.5 |

*Not all foods on this list are allowed on the Immunosuppressed Patient Diet. If you have questions about foods on this list, please contact your SCCA dietitian or call 206-606-1148 to be directed to a dietitian.

Resources

National Institutes of Health, Office of Dietary Supplements: (Calcium): <http://ods.od.nih.gov/factsheets/Calcium-Consumer/> (Vitamin D): <http://ods.od.nih.gov/factsheets/VitaminD-Consumer/>

The Vegetarian Resource Group: www.vrg.org/nutrition/calcium.htm#table1

This education resource was intended to be given as a part of a nutrition consult by an SCCA dietitian.
Questions? Ask an SCCA dietitian at nutrition@seattlecca.org.