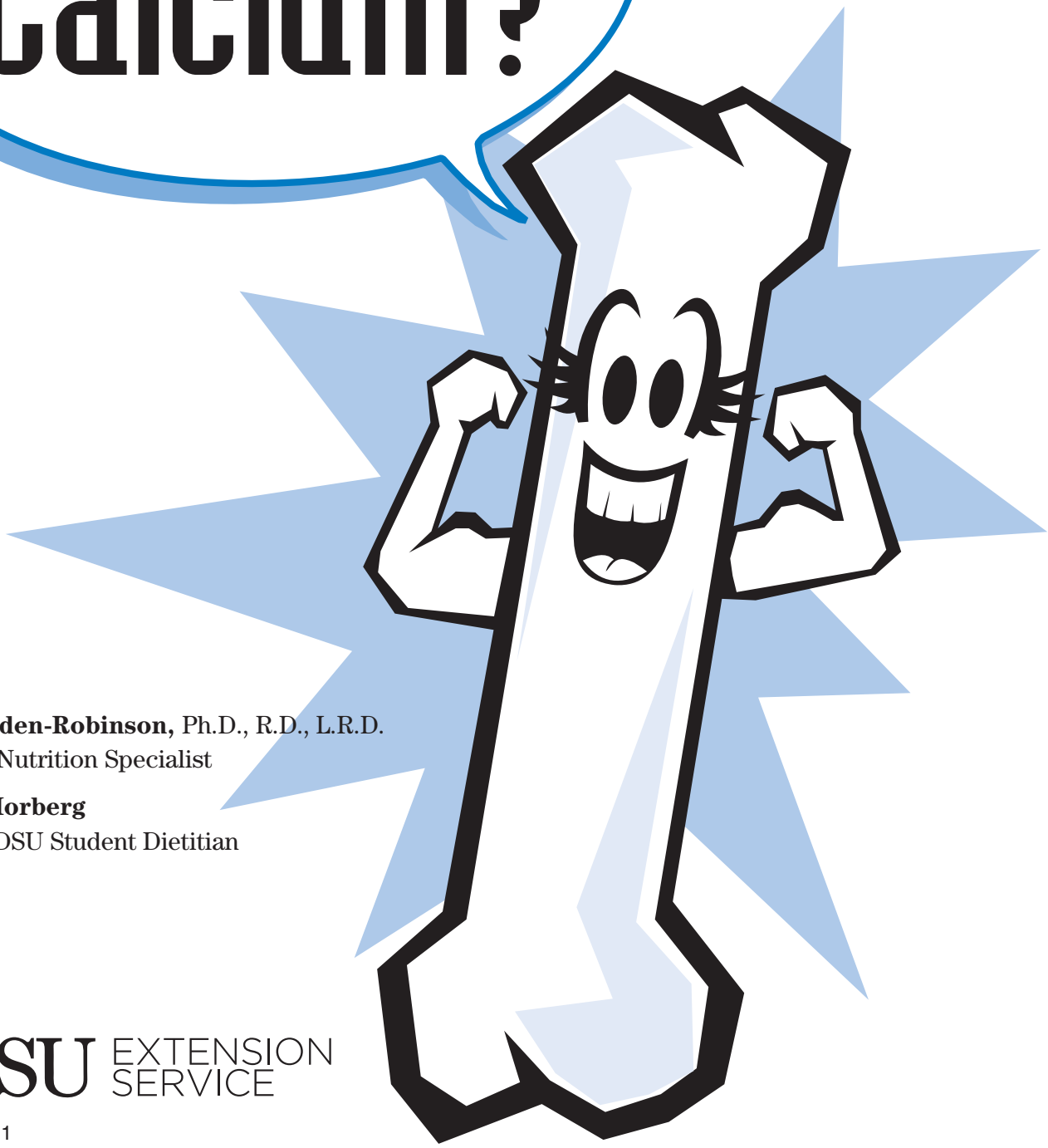
FN-587 (Revised)

Got Calcium?



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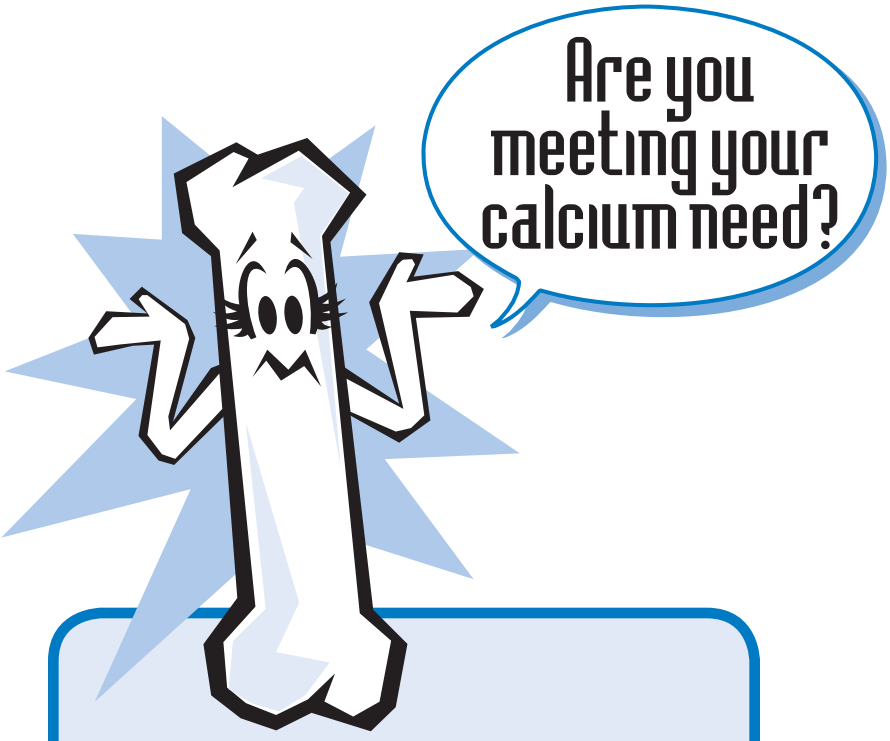
Calcium Keeps Your Body Active, Flexible and Strong!

Calcium is a mineral that is important for growth and maintenance of your bones throughout life. About 99 percent of the calcium in the body is found in the bones and teeth. Calcium is important for blood clotting, nerve transmission, maintaining muscle tone and regulating certain body processes. Recent research shows that adequate calcium also helps protect against heart disease, high blood pressure, osteoporosis, colon cancer, and other diseases.

Dairy foods are among the best calcium sources. A cup of milk, for example, contains about 300 milligrams of calcium. Calcium is found in other food groups, too. Adequate vitamin D helps the body absorb calcium.
Exposure to sunlight transforms a chemical in the skin to the active form of vitamin D. Milk and some other foods are fortified with vitamin D. Maintaining strong bones also requires boron, magnesium and phosphorus, so eating a variety of foods is important.



Calcium intake is important throughout life, but calcium needs vary depending on age and other factors. The current recommendations are listed below.

Age	Calcium recommendation (mg)
1-3 Yrs	500 mg
4-8 Yrs	800 mg
9-18 Yrs	1,300 mg
19-51 Yrs	1,000 mg
51+ Yrs	1,200 mg
Pregnant women	
18 and under	1,300 mg
19 and over	1,000 mg
Postmenopausal women	
on Estrogen Replacement Therapy (ERT)	1,000 mg
not on ERT	1,500 mg
over 65	1,500 mg

Source: Food and Nutrition Board, Institute of Medicine-National Academy of Sciences Dietary Reference Intakes, 1998.

Did You Consume Enough Calcium Yesterday?

In the table, fill in the number of servings and the total number of milligrams of calcium corresponding to the calcium-rich foods you ate yesterday. Add up your total.

Note: Products will differ in their calcium content, so check the Nutrition Facts label on your favorite brands.

Food Item	Serving	Number of servings consumed	Calcium (mg) per serving	Total calcium (mg)
Dairy				
Yogurt, plain, nonfat	1 cup		450	
Yogurt, plain, low-fat	1 cup		415	
Milk	1 cup		300	
Chocolate milk 1%, 2%	1 cup		285	
Calcium-fortified soy milk	8 oz		275	
Swiss cheese	1 oz		270	
Provolone cheese	1 oz		210	
Cheddar cheese	1 oz		200	
Colby cheese	1 oz		180	
Mozzarella, part skim	1 oz		180	
American cheese	1 oz		150	
Pudding, custard	1/2 cup		150	
Frozen yogurt	1/2 cup		100	
Ice cream	1/2 cup		90	
Cottage cheese, low-fat	1/2 cup		75	
Parmesan cheese, grated	1 Tbsp		70	
Cream cheese, light	1 oz		40	
Meat and Meat Alternatives				
Tofu, raw, firm	1/2 cup		260	
Soybeans, mature, boiled	1/2 cup		175	
Tofu, raw	1/2 cup		130	
Navy beans, boiled	1 cup		128	
Refried beans, canned	1 cup		120	
Almonds, shelled	1 oz		100	
Pinto beans, boiled	1 cup		80	
Kidney beans, boiled	1 cup		50	
Fruits and Vegetables				
Spinach, boiled	1/2 cup		122	
Kale, boiled	1/2 cup		50	
Orange	1 medium		50	
Raisins, seedless	2/3 cup		50	
Broccoli, cooked	1/2 cup		40	
Corn tortilla	1 medium		40	
Celery, cooked	1/2 cup		30	
Dates, dried	10		30	
Spinach, raw	1/2 cup		30	
Celery, raw	1 - 7.5” long stalk		20	
Breads and Cereals				
Instant oatmeal, dry	1 oz		160	
Whole wheat bread	1 slice		25	
Other				
Calcium Supplement				
Total				

Total Calcium Intake _____ – Calcium Recommendation _____ = _____

If you have a negative number, increase your calcium intake by that amount to meet your calcium recommendation.

Easy Ways to Increase Calcium in the Diet

Meeting your calcium needs may seem challenging. These are a few tips to help you meet your calcium needs.

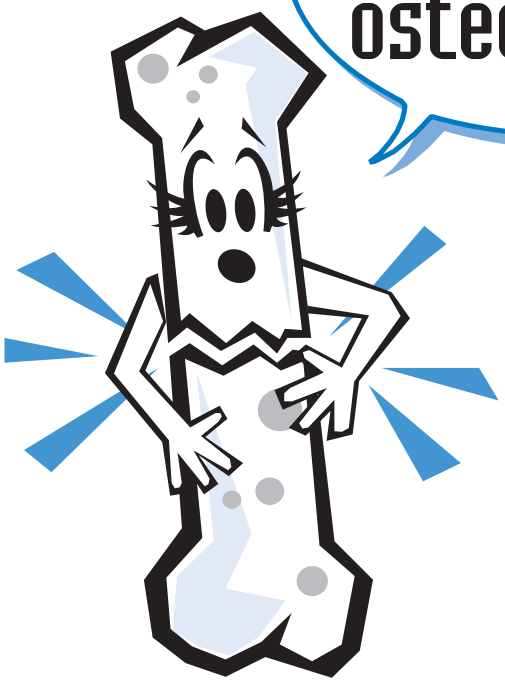
- Use milk in scrambled eggs, hot cereal, and hot cocoa.
- Add cheese to potatoes, salads, pizza, spaghetti sauce, casseroles, and hamburgers.
- Prepare smoothies by blending fruit, juice and milk for a quick snack.
- Use plain yogurt for sour cream.
- Add non-fat dry milk to bread, meatloaf, meatballs, hot cereal, pancake mix, gravy, pudding, and whipped cream.
- Serve pudding or pudding pops made with milk for dessert.
- Choose fortified foods such as calcium-fortified milk, juices, cereal or cereal bars.
- Keep string cheese, yogurt, and milk handy for a snack.

Lactose Intolerant? You May Be Able to Drink Some Milk!

Some people do not tolerate milk-containing foods very well, because they lack the enzyme (lactase) that breaks down milk sugar (lactose). Milk is not fully digested, resulting in uncomfortable side effects such as gas, bloating, diarrhea, nausea, and cramps. The symptoms usually appear about 30 minutes to two hours after eating or drinking foods containing lactose. Some researchers have found that small amounts of milk (Eg. ½ cup at a time) are tolerated. Try these tips to cope with lactose intolerance:

- Consume dairy foods in small amounts (¼ to ½ cup) and slowly increase until you reach your tolerance level.
- Drink milk with other foods to allow more time for digestion.
- Choose aged cheeses such as Cheddar, Colby, Swiss, and Parmesan, which contain lower amounts of lactose.
- Consider using lactase enzymes, available in liquid form for use with milk and as chewable tablets for solid foods.
- Try lactose-reduced milk and other products.
- Choose cultured milk such as yogurt or buttermilk, which contain bacteria that aid in the breakdown of lactose. Look for the designation “Live and Active Cultures” on food labels.
- Try calcium-fortified juices and cereals to help meet your calcium needs.

Are you at risk for osteoporosis?



Risk Factor	Yes	No
Are you female?	❑	❑
Do you have a family history of osteoporosis?	❑	❑
Are you of Caucasian or Asian decent?	❑	❑
Are you older than 35?	❑	❑
Have you had your ovaries removed?	❑	❑
Do you smoke cigarettes?	❑	❑
Do you consume more than two drinks of alcohol per day?	❑	❑
Are you stressed?	❑	❑
Is your diet low in calcium (less than 1000 mg per day)?	❑	❑
Do you limit dairy foods?	❑	❑
Do you have a high protein intake?	❑	❑

Osteoporosis is a disease in which the amount of bone gradually decreases, weakening the bones to the point where breaks or fractures could occur. The hip, wrist, and spine are common areas of fracture. Answer the questions on this page. "Yes" answers generally indicate a higher risk for osteoporosis. Medications are available to help slow the progression of osteoporosis.

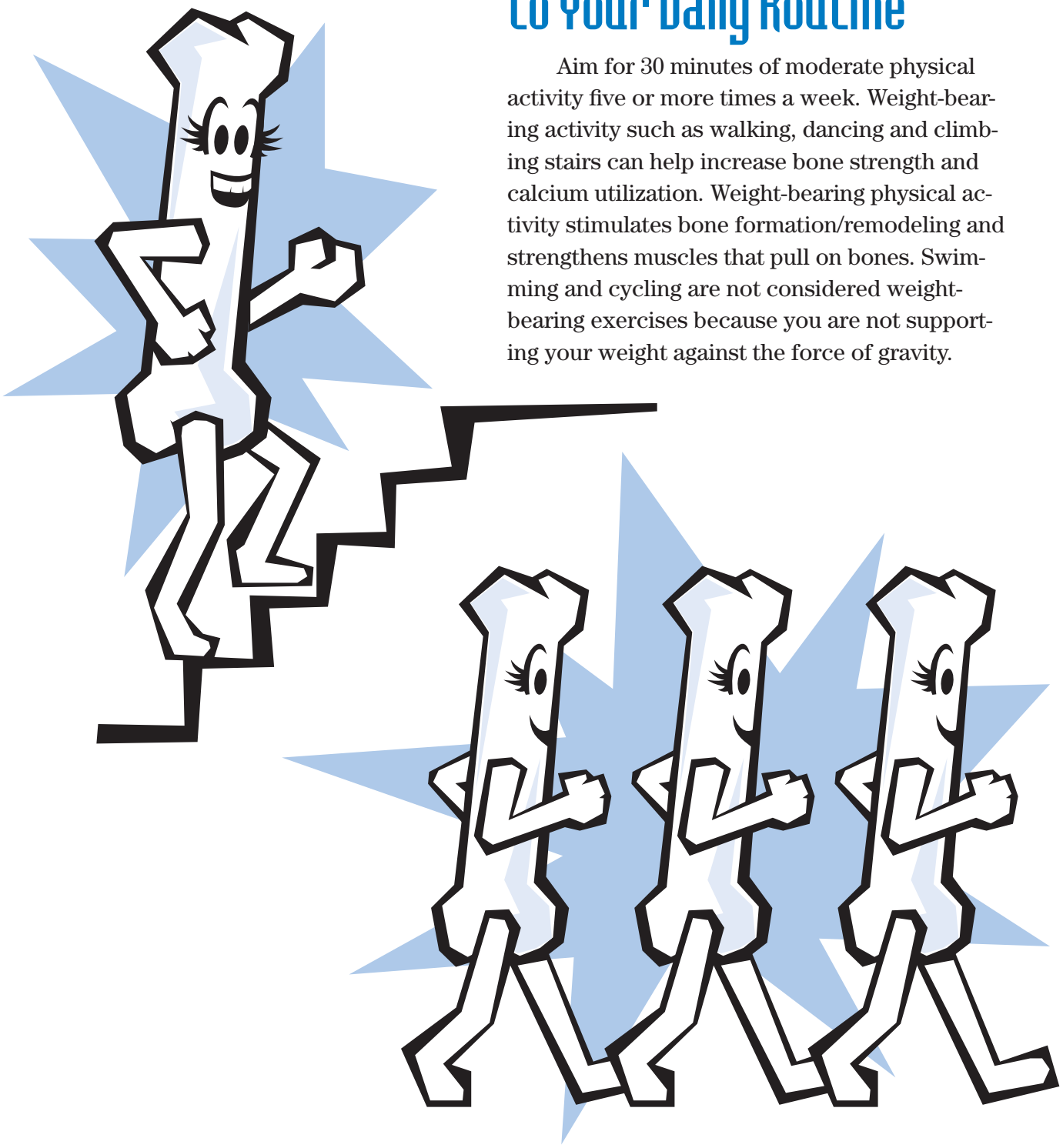
Preventing osteoporosis and treating osteoporosis are similar in many respects: maintain a calcium-rich diet with adequate vitamin D, engage in weight-bearing exercise, don't smoke and limit alcohol intake.

Post-menopausal women should discuss benefits and risks associated with hormone replacement therapy (HRT) with their physician. HRT may reduce fractures and have some other health benefits. Drugs such as Evista (raloxifene), Fosamax (alendronate), Miacalcin (calcitonin) and Actonel (risedronate sodium) are available for the treatment of osteoporosis.

A new treatment being studied, percutaneous vertebroplasty (PV), involves injecting liquid cement into fractured vertebral sections of osteoporosis patients. PV may help rebuild collapsed spinal bone and relieve some pain and pressure. It's important to discuss treatment options with your healthcare provider.

Add
Some Physical Activity to Your Daily Routine

Aim for 30 minutes of moderate physical activity five or more times a week. Weight-bearing activity such as walking, dancing and climbing stairs can help increase bone strength and calcium utilization. Weight-bearing physical activity stimulates bone formation/remodeling and strengthens muscles that pull on bones. Swimming and cycling are not considered weight-bearing exercises because you are not supporting your weight against the force of gravity.



What about calcium supplements?

If you find you have difficulty meeting your calcium needs with food alone, you might consider a calcium supplement. Many types of supplements are available. They differ in concentration, ability to interfere with other nutrients, presence of contaminants, and costs. The best supplement for you to take is one that meets your needs based on tolerance, convenience and availability. Inform your physician or healthcare provider if you are taking supplements of any type. Some supplements may interfere with the action of medications.

Keep these tips in mind when taking a supplement:

- Choose generic or brand name supplements that carry the USP (United States Pharmacopoeia) or NF (National Formulary) symbol. Products carrying these designations must meet certain standards for quality and purity; however, some products that meet these standards do not necessarily carry this designation on their label.
- Avoid "natural" calcium supplements such as oyster shell, bone meal, and dolomite, which might contain toxic ingredients such as lead, aluminum, arsenic, mercury, and cadmium. Most claims such as "no starch, no sugar, no preservatives, recommended by pharmacists, high potency, premium quality, free of milk, free of yeast, and natural" can be made for any supplement.
- Test solubility by dissolving the calcium-containing tablet in ¾ cup (6 oz) of vinegar for 30 minutes. Chewable and liquid supplements generally are well absorbed.
- For better absorption, consider taking calcium supplements in "doses" of 500 mg or less over the course of the day. If taking only one dose, evening appears to be the best time. Check with your physician or other health professional for their recommendation.
- Talk with a physician or pharmacist about possible interactions with medications you are taking.
- Check to make sure the milligrams are for elemental calcium and NOT the milligrams of the compound.
- If side effects such as constipation or stomach upset occur with the type of calcium supplement you are using, try increasing fluid intake or changing supplement type. Visit with your doctor or pharmacist to learn more.

How do supplements compare?

Supplements	Elemental Calcium (by weight)*	Taken	Negative Aspects	Positive Aspects	Examples**
Calcium Carbonate	40%	With food (needs gastric acid from stomach)	May cause gas and constipation, relatively insoluble at a neutral pH	Most affordable, most common, highly concentrated	Caltrate, Your Life, Tums, Viactiv, Rolaids, many generic brands
Calcium Citrate	21%	No regard to food	Usually more expensive, lower elemental calcium	Highly soluble, good for elderly, type usually used to fortify cereal/ juice	Citracal
Calcium Phosphate	40%	No regard to food	May be difficult for the body to break down	Medium price, highly concentrated	Calcet

*Eg. 1,000 mg of Calcium Carbonate would contain 400 mg of elemental calcium (1,000 x 0.4).
**Use of brand names does not imply endorsement.

Note: Calcium Gluconate and Calcium Lactate are two other types of calcium supplements. Check the Supplement Facts label to learn more.

For Additional Information:

National Osteoporosis Foundation • www.nof.org
National Institute of Health • www.nih.gov
National Institute on Aging • www.nih.gov/nia
MedSurf • www.medsurf.com
NDSU Extension Service Website • www.ndsu.edu/eatsmart
Calcium Counter • www.osteoporosis.ca/OSTEO/E02.html

For more information on this and other topics, see www.ag.ndsu.edu

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