ON THE

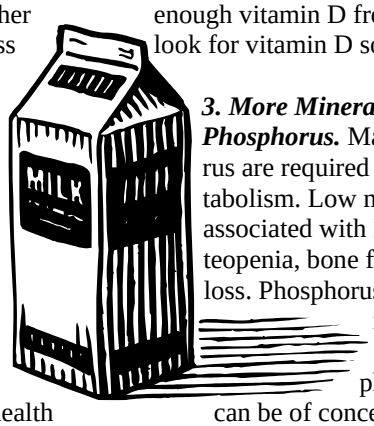
Light Side

Issue No. 174 *A free monthly publication from Skiff Medical Center, Newton, IA*

Bone Up: Your Top 10 List for Maximizing Skeletal Health

1. Continue Being Calcium Conscious. Calcium is the most recognized nutrient for bone health for a reason. Calcium is the chief bone-forming mineral. Adults need 1,000 mg of calcium daily, while adolescents need 1,300 mg. About three to four servings daily of low-fat dairy like skim or 1% milk, yogurt, and cheese can be consumed to meet this target. Those with lactose intolerance can consume lactose-free milk products and calcium fortified beverages, such as orange juice.

2. Complement Calcium with Vitamin D. Vitamin D and calcium work together to promote bone growth, reduce loss with age and decrease the risk for fractures. Vitamin D helps us get the most out of the calcium that we consume by improving the efficiency of calcium absorption. Low levels of vitamin D are associated with an increased risk of hip fracture, especially in elderly individuals.



Experts cite low vitamin D intake as an emerging worldwide public health issue for people of all ages. "There's growing support that the current recommended intake for vitamin D is too low," warns Purdue University professor of foods and nutrition, Dorothy Teegarden, PhD. The adequate intake (AI) required to maintain adequate levels of vitamin D in blood is 200 IU/day for people under 50 years of age, 400 IU/day for those 51 to 70 years of age, and 600 international units (IU)/day for individuals over age 70 years. Vitamin D can be found in fortified milk, fatty fish (like cod liver oil, mackerel, sardines, salmon, and tuna), some vegetable oil spreads, fortified cereals, fortified orange juice, egg yolk and some cheeses. Supplements and multivitamins may also contain vitamin D, however the consumption of amounts greater than 2,000 IU/day could become a potential health risk; check the label on your multivitamins to make sure that you do not exceed this amount.

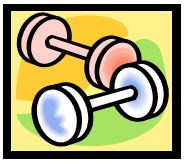
The major source for vitamin D, the sun, cannot be found in your local grocery store. The UV rays from the sun trigger the skin to produce vitamin D. Overexposure to the sun is a known health risk; however, exposure of the hands, arms, and face to sunlight for 10 to 15 minutes twice weekly for adults who have medium skin tone and who do not burn easily in the sun should be adequate to allow the synthesis of the necessary amounts of vitamin D. People with darker-pigmented skin and those living in areas with reduced exposure to sunlight may not synthesize enough vitamin D from the sun, therefore look for vitamin D sources in the diet.

3. More Minerals: Magnesium and Phosphorus. Magnesium and phosphorus are required for bone mineral metabolism. Low magnesium levels are associated with low bone growth, osteopenia, bone fragility, and calcium loss. Phosphorus, on the other hand, is necessary for bone health; but too much phosphorus in the diet can be of concern, especially if excess phosphorus is coupled with a low calcium intake. Consuming adequate magnesium from halibut, tuna, artichokes, grains, nuts, and dairy products can help you manage or balance your phosphorus intake. Eat a varied diet, and make sure that you eat enough calcium-containing foods.

4. Vital Vitamin: Vitamin K? The evidence is still developing, but it appears that inadequate intakes of vitamin K have ill-effects on bone density and may result in the risk of bone fracture. The solution is to eat a variety of fruits and vegetables, such as spinach, tomatoes, lettuce, cauliflower, broccoli, cabbage and soybeans to maintain adequate levels of vitamin K in your body. Talk to your doctor before you increase your intake of vitamin K if you are taking certain blood-thinning medication.

5. If You Don't Use It, You Lose It.

Studies have shown that weight-bearing exercises, like walking, jogging, dancing, or even marching, help to strengthen your bones. Strength training is recommended to stabilize and secure bones and even simple activities have been shown to provide big gains in bone strength. The American College of Sports Medicine's (ACSM's) position on physical activity and bone health describes impact activities, that is, weight bearing activity for at least 10-20 minutes at least three times per week and note that such activity two times a day is even better. To help maintain bone health throughout adulthood, ACSM advises adults to engage in weight bearing activity, such as tennis, stair climbing, jogging, walking, or activities that involve jumping, like volleyball or basketball, along with strength training. To optimize bone health, adults are advised to do weight-bearing exercises three to five times per week and strength training two times per week for at least 30 to 60 minutes.



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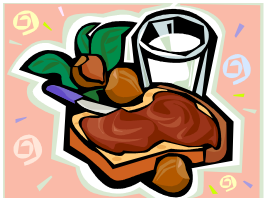


6. Protein. Protein has developed a reputation for having a negative influence on bone because high-protein diets were associated with an increase in urinary calcium loss. Not all studies have confirmed that finding, and some have shown that high-protein, calcium-rich diets may be beneficial to bone growth. In addition, protein is necessary for healthy bone structure and for the production of bone growth-promoting hormones. Evidence points to the need for the inclusion of adequate amounts of protein in the diet (the Recommended Dietary Allowance is 0.8 grams per kilogram (or .36 grams per pound) of body weight per day for most adults).

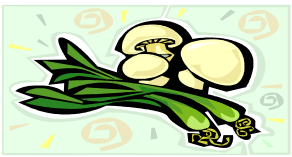
7. Go Low with Saturated Fat. We know that too much saturated fat is bad for your heart, and now evidence suggests that it could also be bad for your bones. According to the findings form the third National Health and Nutrition Examination Survey, a large nationwide survey of Americans, people who consumed a diet high in saturated fat had significantly lower bone mineral densities. Interestingly, other researchers have found that the essential fatty acid omega-3, whose reputation precedes it as a heart-healthy option, may positively influence bone health. Researchers found that plant sources of omega-3 fatty acids protect bone and decrease bone tissue turnover. Therefore, continue your heart-healthy diet consisting of low levels of saturated fat (i.e. choose lean meats and low-fat or nonfat dairy products), choose walnuts, flaxseed, and salmon; and use vegetable oil blends rather than butter to get omega-3 fatty acids in your diet.

8. What about Caffeine and Carbonation? "Neither caffeine nor carbonation, by themselves, has a significant effect on bone health," remarks noted bone health researcher, Robert P. Heaney, M.D. They become an issue when they displace milk or calcium sources, so do not feel guilty about adding milk to your morning coffee.

9. Smoking: Quitting is Key. The National Institutes of Health (NIH) has stated that smoking has been linked to compromised bone health. Smoking cessation success is significantly improved when you seek help...don't go it alone.

Quitline Iowa
1-866-U-CAN-TRY

10. Last, but Not Least: Eat a Balanced Diet for Overall Health and Wellness. "*The 2005 Dietary Guidelines for Americans* are the best health plan to follow for both bone health and for overall health," advises Connie M. Weaver, PhD, distinguished professor and head of the Foods and Nutrition Department at Purdue University. The *Guidelines* recommend three servings of low-fat dairy products per day, ample amounts of fruits and vegetables, and exercise. As it turns out, Dr. Weaver says that these recommendations support health in other ways, namely, by possibly reducing the risk of cancer and heart disease. The bottom line is that diet and lifestyle choices affect bone health. By choosing a diet rich in calcium, vitamins D and K, and magnesium, combined with an active, smoke-free lifestyle, you can protect your bone mass through a lifetime. To assess your risk for osteoporosis, see the National Osteoporosis Foundation's *Osteoporosis: Can It Happen To You?* risk factor questionnaire at: http://www.nof.org/prevention/Risk_Factor_Questionnaire.pdf. *Reprinted from the International Food Information Council Foundation, 2007.*



Slow-Cooker Creamy Vegetable Barley Soup

Makes 4 servings

1 (15-oz) can kidney beans, rinsed and drained
1/2 c. frozen whole kernel corn
1/2 c. medium pearl barley
1 (14.5-oz) can diced tomatoes, undrained
1 c. sliced fresh mushrooms
1 c. chopped onion
1 carrot, peeled and sliced
1 stalk celery, thinly sliced
3 cloves garlic, minced
2 tsp. dried oregano or Italian seasoning
1/2 tsp. salt (optional)
1/4 tsp. pepper
1 (14-oz.) can low-sodium chicken broth
1/4 c. cornstarch
3 c. cold fat-free milk
1/4 c. chopped parsley
4 tsp. reduced-fat shredded Parmesan cheese

In a 3 1/2 to 5 quart slow cooker, place beans, corn, barley, tomatoes, mushrooms, onion, carrot, celery, garlic, oregano, salt (if desired) and pepper. Pour in broth, stir and cover and cook on low heat for 8-9 hours (or on high heat for 4-5 hours).

Near end of cooking time, stir cornstarch into milk. Stir milk mixture into slow cooker until well blended. Continue cooking 20-30 minutes or until soup has thickened. Sprinkle with chopped fresh parsley and cheese at serving time.

Nutritional Facts per serving: Calories: 390, Fat: 2.5 g, Saturated fat: 0, Carbohydrates: 75 g, Fiber: 13 g, Sodium: 610 mg, Calcium:350 mg

Recipe from 3-A-Day of Dairy (www.3aday.org)

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This issue of *On the Light Side* was written by Registered Dietitian Cindy Harms.

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