

# Bone Builders Newsletter

Summer 2009

## Vitamin D: How much is enough?

Just 10 minutes of midday sun with your arms and legs exposed can make enough natural vitamin D to avoid deficiency. If you're staying out of the sun or slathering on sunscreen, however, or live in northern latitudes where the sunlight is too weak in winter, getting

enough vitamin D can be a challenge. While vitamin D is found in some foods and in fortified dairy products (see box), you'd have to drink eight cups of milk to get the 800 International Units (IU) in a typical supplement.

While advocating sensible sun exposure, scientists who study vitamin D are increasingly recommending supplements. Most believe the official recommendations for adequate intake set by the Institute of Medicine (IOM) are too low.



## Letting the Sun Shine

Estimates of exactly how much vitamin D your skin makes when exposed to sunlight vary widely. According to the Vitamin D Council, if you go out in the summer sun in your bathing suit until your skin just begins to turn pink, you'll make about 20,000 IU. After that point, the sun begins to break down the D it's made.

Tanned or darker skin makes only about half as much vitamin D. Areas north of 42 degrees latitude (a line roughly between Boston and the California-Oregon border) don't get enough solar ultraviolet-B radiation from November through February for vitamin D synthesis. Complete



cloud cover reduces UV energy by 50%, shade by 60%.

Source: Vitamin D articles on pages 1-2 are adapted from *Tufts University Health & Nutrition Letter*: June 2009. <[www.tuftshealthletter.com](http://www.tuftshealthletter.com)>

# The D Math

The **Adequate Intakes (AI)** for Vitamin D were established by the Institute of Medicine in 1997 and are now under review; many experts recommend much higher doses. AIs are for both men and women:

**Through age 50:** 200 IU

**Ages 51-70:** 400 IU

**Ages 71 and up:** 600 IU

At extremely high doses, vitamin D can be toxic. (The body, however, self-regulates its vitamin D production, so vitamin D from sunlight can never build up to unhealthy levels.)

The **Tolerable Upper Intake**

**Level (UL)** for vitamin D intake from food and (primarily) supplements, also set by the IOM, is 2,000 IU for children over 12 months and adults. More recent clinical trials, however, support a UL as high as 10,000 IU.

## D in Your Diet

Very few foods naturally contain vitamin D, so fortified foods provide most of the vitamin D in the American diet. Almost all milk is fortified, but dairy products made from milk, such as cheese and ice cream, are generally not fortified. Ready-to-eat breakfast cereals often contain added vitamin D, as do some brands of orange juice, yogurt and margarine. Here's how some common food sources compare:

- **Salmon**, cooked, 3.5 ounces: 360 IU
- **Tuna fish**, canned in oil, 3 ounces: 200 IU
- **Sardines**, canned in oil, drained, 1.75 ounces: 250 IU
- **Milk**, all fat levels, vitamin D-fortified, 1 cup: 98 IU
- **Margarine**, fortified, 1 tablespoon: 60 IU
- **Ready-to-eat cereal**, fortified, about 1 cup: 40 IU (brands

vary)

- **Egg**, 1 whole: 20 IU
- **Liver**, beef, cooked, 3.5 ounces: 15 IU

The **Daily Value (DV)** used to calculate "Percent DV" on food labels is 400 IU. Only fortified foods are required to list vitamin D content. Foods providing more than 20% of the DV (80 IU) are considered a "high" source.

## Mark Your Calendar

Start now to get your 4 person team for the 2009 AZOC Hotshots on the evening of Tuesday, October 13 at the ASU Wells Fargo Arena. Shoot baskets, meet the ASU Women's basketball team and coach, Charli Turner Thorne and

raise funds for osteoporosis education and screening. Look for details and registration at the Arizona Osteoporosis Coalition website [www.fitbones.org](http://www.fitbones.org)

**World Osteoporosis Day  
is October 20th, 2009**

## Best Bones Forever

The Arizona Osteoporosis Coalition and UA Cooperative Extension were selected as one of three national pilot sites for the new Best Bones Forever/Bodyworks project funded by the Department of Health and Human Services, Office of Women's Health. The new campaign developed by Hagar Sharp, Inc. will replace the Powerful Girls Campaign.

Sharon Hoelscher Day (UACE), Kitty Woodward (AZOC) and Cathy Martinez (UACE) received the one-year contract to offer modified Bodyworks training to Pinal County parents and their adolescent daughters and promote the new Best Bones Forever campaign for adolescent girls. The ten-week BodyWorks classes for mother and 11-14 year old daughters will be

offered in Apache Junction and Casa Grande beginning in mid-September.

Contact Esther Turner at 520-836-5221 to register for one of the BodyWorks classes. More information will be available on Best Bones Forever after the September national kick-off.

## Balance and Strength Exercises Help Prevent Falls

Nearly a third of people over age 65 suffer a fall every year, with 20% of those spills requiring medical attention. Exercises that target balance and strength, such as Tai Chi, can reduce your risk of a possibly crippling fall, according to a new review of 111 trials totaling 55,303 participants.

Lesley D. Gillespie, from Dunedin Medical School in New Zealand, and colleagues found that exercise programs, studied in 43 of the trials, were effective at reducing both the rate of falls and the risks of falling. Reductions in fall risk ranged from 17% for multi-component group programs (such as drug management, home-fall prevention and eyeglasses assistance) to 35% for Tai Chi. Five studies of fracture risk also found that exercise re-

duced the likelihood of people breaking bones by a combined 64%.

Exercise regimens, Gillespie and colleagues noted, can target four separate physical attributes: strength, endurance, flexibility and balance. The exercise programs most effective against falls were those aimed at improving strength and balance.

Writing in the *Cochrane Reviews* medical database, the reviewers concluded, "The effect of exercise programs in reducing the risk and rate of falling should now be regarded as established."

Other fall-prevention efforts—including drug-dose adjustments and home-safety assessments—lacked convincing evidence of benefit, the reviewers found. One in-

tervention, however—a traction device attached to shoes in icy condition — did stand out as effective, reducing falls by 58%. And people at high risk for falls, such as those with impaired vision, may benefit from home-safety interventions.

"Taking vitamin D supplements probably does not reduce falls," Gillespie and colleagues added, "except in people who have a low level of vitamin D in the blood." (Recent research, however, suggests that as many as three-quarters of Americans may suffer such vitamin D deficiency.

Source: Tufts University Health & Nutrition Letter  
<[www.tuftshealthletter.com](http://www.tuftshealthletter.com)>:  
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The University of Arizona  
Cooperative Extension

Maricopa County  
4341 East Broadway Road  
Phoenix, AZ 85040-8807

Phone: (602) 827-8200, ext. 353

Fax: 602-827-8292

Contact E-mail: [mconner@ag.arizona.edu](mailto:mconner@ag.arizona.edu)



Sharon Hoelscher Day, Area Agent  
Family & Consumer Sciences  
Coordinator, Community Health Programs  
Phone: 602-827-8200, ext. 332  
Email: [shday@cals.arizona.edu](mailto:shday@cals.arizona.edu)

## Taking the University to the People

[www.cals.arizona.edu/maricopa/fcs](http://www.cals.arizona.edu/maricopa/fcs)

[www.bonebuilders.org](http://www.bonebuilders.org)



## Bone Appétit

- Eva Paz-Ono, Program Coordinator, Sr., 602-827-8200, ext. 316, email: [epazono@cals.arizona.edu](mailto:epazono@cals.arizona.edu)
- Elizabeth Schnoll, Health Educator, 602-827-8200, ext. 324, email: [eschnoll@cals.arizona.edu](mailto:eschnoll@cals.arizona.edu)
- Norma C. Rodriguez, Instructional Specialist, Sr., 602-827-8200, ext. 326, email: [normar@cals.arizona.edu](mailto:normar@cals.arizona.edu)
- Vanessa Parra, Student Intern, 602-827-8200, ext. 352, email: [gvarra1@cals.arizona.edu](mailto:gvarra1@cals.arizona.edu)



### Quick Spinach and Tomato Pasta

#### Ingredients

- 1 pound whole-wheat pasta
- 1 onion, sliced
- 1 tablespoon extra-virgin olive oil
- 1 14-ounce can tomatoes, drained
- 1 pound frozen spinach
- Salt and fresh ground pepper, to taste
- 1/3 cup crumbled feta cheese

#### Directions

Cook pasta in a large pot of boiling salted water until al dente, according to package directions. Meanwhile, heat oil in a large skillet over medium-high heat and sauté onion. Add tomatoes; simmer for 10 minutes. Stir in spinach; heat through. Drain the pasta, toss with sauce and season with salt and pepper. Top with feta.

#### Source:

[http://www.realage.com/nutritioncenter/recipes/quick\\_spinach\\_and\\_tomato\\_pasta.aspx](http://www.realage.com/nutritioncenter/recipes/quick_spinach_and_tomato_pasta.aspx)

#### Nutrition Information

Per serving: Calories 352; Carbohydrates 60g; Fat 7g; Saturated Fat 2g; Monounsaturated Fat 2g; Protein 17g; Cholesterol 7mg; Dietary Fiber 16g; Potassium 618mg; Sodium 265mg; Vitamin A (181% daily value); Vitamin C (39%dv); Folate (25% dv); Iron (23% dv); Potassium (18%dv); **Calcium (17% dv) or 170mg.**

If you have questions concerning access, wish to request a sign language interpreter or accommodations for a disability, please contact Mary Conner at [mconner@cals.arizona.edu](mailto:mconner@cals.arizona.edu) or 602-827-8200, ext. 353.

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