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## Just In

### Balancing Diet/Activity Still Puzzling for Some

The International Food Information Council Foundation's 2010 Food & Health Survey found that messages about the importance of a healthful lifestyle are being heard by Americans, but there are disconnects in consumers' awareness of the relationship between diet, physical activity and calories. While they are concerned about weight, Americans aren't very successful at balancing their energy intake. Most (70 percent) say they are concerned about their weight, and the vast majority (77 percent) is trying to lose or maintain weight. Two-thirds (64 percent) report making changes to improve the healthfulness of their diet. On average, 63 percent are physically active, and 68 percent of these report being "moderately" or "vigorously" active three to five days a week. Few (12 percent) can accurately estimate the number of calories they should consume in a day, and when it comes to calories consumed versus calories burned, most (58 percent) do not make an effort to balance the two. The complete results are available at [www.foodinsight.org](http://www.foodinsight.org).

IFIC 2010 Food & Health Survey, July 2010

## Foods that Fuel the Immune System

Foods that power up your immune defense are a hot marketing tool. From food products like breakfast cereals and dietary supplements that claim to "support immunity" to magazine articles that recommend top "immune superfoods," it seems like the idea of eating to boost immune function is everywhere. Perhaps it's a good thing, as infectious diseases are the leading cause of morbidity in the world. And as cold and flu season approaches, it's tempting to buy into the hope of eating your way to a stronger immune system. But is there truth behind the hype?

**This Is Your Immune System.** You can credit your immune system for allowing you to thrive within a busy, interactive world. The immune system is your body's protective network that fends off invasion by harmful substances, such as bacteria, viruses, and chemicals, as well as guarding against the development of cancer. When your immune system is healthy, you have multiple barriers to protect against invaders, including your

skin, inflammatory responses, and specific immune responses, such as certain types of white blood cells that destroy pathogens.

Your gut plays a very important role in your immune system; it is the largest immune organ in the body, accounting for 25 percent of your immune cells. More than 400 species of bacteria reside in the gut, and they have important symbiotic (beneficial) relationships with your body. Simin Meydani, D.V.M., Ph.D. director of the Jean Mayer USDA Human Nutrition Research Center on Aging (HNRCA) and the Nutritional Immunology Laboratory at Tufts, calls the gut flora (the collection of microorganisms, mostly bacteria) "the forgotten body organ."

As you age, your immune system diminishes. Speaking at a December 4, 2009 Tufts Seminar on nutrition and immunity, Meydani reported that there is an increased incidence of infectious disease (and morbidity and mortality from infectious disease) in older adults

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## Powerful Nutrition for Strong Bones

Fruits, vegetables, milk, cheese, tomato products, flaxseed. What do these foods have in common? They are all linked to bone health. When you're young, you may take bones for granted. As you mature, you become concerned about keeping them in tip-top shape. And with good reason; low bone mass (or bone density, the amount of matter in bones) and deterioration of bone tissue structure leads to osteoporosis, which in turn, puts you at increased risk for bone fractures. According to the National Osteoporosis Foundation (NOF), an estimated 44 million Americans are at risk for the condition, including 55 percent of people 50 years old and above. About 10 million individuals already have osteoporosis, and almost 34 million already have low bone mass.

**Who is at risk?** Both women and men are at risk for osteoporosis, especially as they age, although women are particularly vulnerable—eight in 10 afflicted are female. In the first five to seven years after cessation of menses when estrogen levels drop, women can lose up to 20 percent of their bone mass, generally without symptoms. The first "symptom" may be a sudden fracture, or severe back pain, loss of height or stooped posture.

Bone loss is not only reserved for older adults; young people can also be at risk. For example, the 37 year-old actress Gwyneth Paltrow recently announced that she has osteopenia (low bone mineral density). People who experience pressure to be thin, whether they work on stage as a ballerina or an actress, or whether the pressure is self- or peer-imposed, also can suffer from

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# Eat Well and Exercise to Protect Your Bones for Life

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poor nutrition and low estrogen levels that promote bone loss.

While the majority of fractures related to osteoporosis involve the hip, spine and wrist, other bones can break as well. And it may not stop with just one broken bone; women with one hip fracture are four times as likely to suffer a second one. Even worse, fractures can lead to disability. One in five people who were able to walk easily before a hip fracture required long-term care after the event.

## Promising nutrients for bone health.

In order to be proactive about your bone health, see *EN*'s "Top Eight Lifestyle Strategies for Healthy Bones at Any Age." In addition, emerging research suggests that certain nutrients in foods may also protect bones. While the jury is still out, there's certainly no harm in

including these in your diet.

- **Lycopene.** Foods high in a group of plant compounds called carotenoids seem to protect bone health. A January 2009 study in the *American Journal of Clinical Nutrition* suggests that carotenoids, particularly lycopene, help protect older women's lumbar spine and older men's hips against fracture. Carotenoids are found in dark green leafy vegetables, and yellow, orange and red produce. Rich sources of lycopene include watermelon, tomatoes (tomato products, such as tomato sauce and canned tomatoes, contain even higher sources of lycopene,) pink grapefruit, bell peppers and guava.
- **Flaxseed oil.** Adding omega-3 rich flaxseed oil to the diet could reduce the risk of osteoporosis, especially for those with diabetes, according to a 2009 study of rats published in

the *International Journal of Food Safety, Nutrition and Public Health*. Although more study is needed, it appears that omega-3 fatty acids help protect the processes of bone matrix formation and bone mineralization.

- **High-protein diet benefits still unclear.** While studies suggest a high protein diet can promote wasting of calcium by spilling it into the urine, the amount of protein suggested by the USDA Dietary Guidelines (18 percent of calories, about 90 grams a day for the average person) poses no problem and appears to be beneficial, especially for older adults. In a study of 560 pre-menopausal women published in the May 2010 *American Journal of Clinical Nutrition*, the women who ate higher levels of protein did not suffer adverse effects on bone density.

—Christine Palumbo, R.D

## EN's Top Eight Lifestyle Strategies for Healthy Bones at Any Age

- 1. Fill up on fruits and vegetables.** Research suggests they have a protective role, but exactly which key nutrients in fruits and vegetables protect the skeleton have not yet been identified. "Fruits and vegetables may be protective because of a certain nutrient that you could also get from a supplement. But the protection may be due to the fact that they create an alkaline environment and reduce the acidity of the body. It could also be that they have bioactive components including phenols and flavonoids that act as antioxidants, or simply that higher intakes of fruits and vegetables are a marker for a healthy lifestyle," says Jeri Nieves, Ph.D., associate professor of clinical epidemiology at the Mailman School of Public Health at Columbia University and a National Osteoporosis Foundation-affiliated healthcare professional.
- 2. Take enough calcium.** Nieves recommends targeting the recommended daily intake for calcium—between 1,000 and 1,200 milligrams (mg) for most adults. If you cannot meet your needs through diet, she suggests adding a calcium supplement. "For example, if you have a glass of milk and a yogurt each day you have 600 mg from those foods, and the trace amount of calcium in other foods provides 250 mg. Therefore, if you need
- to consume 1,200 mg every day you only need a supplement of 350 mg," Nieves explains.
- 3. Get enough vitamin D.** This fat-soluble vitamin helps your body absorb calcium, as well as maintain muscle strength. Nieves reports that vitamin D deficiency is also associated with bone loss and increased risk of fractures. Since many Americans are vitamin D-deficient, she urges adults to take supplements to achieve the recommended levels of 800 – 1,000 International Units per day.
- 4. For those who already imbibe, one to two alcoholic drinks per day may help.** A February 2009 study published in the *American Journal of Clinical Nutrition* found that postmenopausal women who enjoyed two daily drinks—either wine or beer—had five to 8.3 percent greater hip and spine bone density than non-imbibers. In men, however, more than two drinks was associated with lower bone mineral density. And in the February 2010 issue of the *Journal of the Science of Food and Agriculture*, silicon, a mineral found in beer, banana and barley, was found to improve bone density. Beware of heavy drinking (more than two drinks per day), which tends to weaken bones and increases the risk of falls.
- 5. Participate in weight-bearing activity.** Keep moving, emphasizes Michele Kettles, M.D., Executive Vice President of the Cooper Clinic and co-author of *Women's Health and Fitness Guide*. She recommends weight-bearing activities like yoga, walking on a treadmill, chasing children or grandchildren, and gardening—anything to keep you from sitting. "What you don't want to be is a couch potato," says Kettles, whose favorite comment from her patients is "I never sit down."
- 6. Avoid smoking.** According to NOF, smoking is a risk factor for osteoporosis because it inhibits bones' ability to absorb calcium.
- 7. Maintain a healthy weight.** Women and men who weigh less and have small bones are more likely than larger people to have osteoporosis, according to NOF. But that doesn't mean larger people can't develop it.
- 8. Prevent falls.** "If you don't fall, you don't fracture," says Kettles, who feels that prevention of falls is often under-emphasized. One way to improve balance is to perform balance exercises, which can be as simple as standing on one foot on a stable surface. And watch out for floppy slippers and obstructions in your pathway, such as small pets or carpets.