

Americans missing out on phytonutrients associated with bone health

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Americans who fall short in meeting their daily fruit and vegetable intakes based on government guidelines are also likely to fall short in common bone-building nutrients like calcium and vitamin D, according to a newly released report by the Nutrilite Health Institute called America's Phytonutrient Report: Bone Health by Color. "It's like a double impact - if you fail to eat enough fruits and vegetables, you are also likely not getting enough bone-building nutrients like calcium and vitamin D from all food sources in your total diet either," said Keith Randolph, Ph.D., Technology Strategist for Nutrilite.

The new report also highlights the limited variety of fruits and vegetables people eat. "Even if they're consuming the recommended five to 13 servings a day, they're probably just eating a greater volume of a narrow assortment of fruits and vegetables," Dr. Randolph said. "This research highlights the importance of not only the quantity, but the variety of the fruits and vegetables. Everyone can benefit by eating fruits and vegetables that span a broad color spectrum," he added.

Phytonutrients, Foods & Bone Health

Along with vitamins, minerals and fiber, fruits and vegetables contain plant-based compounds known as phytonutrients that research suggests provide a range of potential health benefits, including [bone health](#). America's Phytonutrient Report: Bone Health by Color focused on four color categories of phytonutrients. The research highlighted the key food

sources that provide phytonutrients in these color categories.

- Green Phytonutrients: EGCG, lutein/zeaxanthin, isoflavones
 - Key Food Sources: tea, spinach, soybeans
- Red Phytonutrient: lycopene
 - Key Food Sources: tomatoes and tomato products
- White Phytonutrient: quercetin
 - Key Food Sources: onions
- Yellow/Orange Phytonutrients: beta-carotene, hesperitin, beta-cryptoxanthin
 - Key Food Sources: carrots, oranges and orange juice

Additional Key Findings

Using NHANES and USDA data that show what Americans eat, America's Phytonutrient Report: Bone Health by Color also concluded the following:

- Approximately 50 percent of Americans who meet their recommended intakes of fruits and vegetables on a daily basis also get over 1000 mg of calcium and more than 200 IU of [vitamin D](#) in their daily diet, compared to the 25 percent of Americans for each nutrient who fail to meet their recommended intakes of fruits and vegetables.

- The mean calcium intake among people meeting their fruit and vegetable recommendations was 1110 mg/day compared to only 880 mg/day among those failing to meet fruit and vegetable recommendations.
- For vitamin D, those meeting their fruit and vegetable recommendations consumed 244 IU/day compared to only 184 IU/day among those failing to meet their fruit and vegetable recommendations.

Depending upon age, for adults, calcium intakes should be between 1000-1200 mg/day and vitamin D should be between 200-600 IU/day, with some scientists looking at the benefits of even higher vitamin D intakes. Therefore, these new research findings, though not designed to test phytonutrient intake and bone health outcomes, suggest that Americans who fall short in fruit and vegetable consumption and have a "phytonutrient gap," also are more likely to fall short in calcium and vitamin D.

An estimated 10 million Americans over age 50 have osteoporosis or "thinning of the bones," while another 34 million Americans are at risk. Subsequently, it's important to make bone health a life-long commitment to defend against thinning bones and avoid premature bone loss. While nutrients such as calcium and vitamin D are critical to bone health, emerging research suggests that phytonutrients - the nutrients found in fruits and vegetables - may offer specific benefits to bone health and are an important part of the daily diet as well.

Closing the "Phytonutrient Gap"

An earlier study, America's Phytonutrient Report: Quantifying the Gap, showed that, on average, eight out of 10 Americans have a

"phytonutrient gap" - that is, they fall short in consuming key phytonutrients from foods that could benefit their health, including bone health.

"The original report demonstrated that we have a 'phytonutrient gap' among Americans, and this new report shows how the 'phytonutrient gap' tracks with shortfalls of calcium and vitamin D," said Dr. Randolph. "In light of emerging research showing phytonutrients like lycopene and beta-carotene can benefit bone, this new finding that low fruit and vegetable consumers also have low intakes of calcium and vitamin D is concerning."

To see whether they have a "phytonutrient gap," consumers can check out the Phytonutrient Spectrum and their Daily Phytonutrient Snapshot at www.nutriline.com/color. The Phytonutrient Spectrum brings to life the colors, health benefits and fruits and vegetables associated with select phytonutrients, and the Daily Phytonutrient Snapshot helps consumers determine which fruits and vegetables they need to eat more of to help close their individual "phytonutrient gap."

"Bone is an active tissue in the body, and fortunately just like other muscles and tissues, there are ways adults of all ages can protect and keep their bones healthy," says Amy Hendel, Nutrilite's Phytonutrient Coach. "In addition to regular physical activity and consuming foods high in calcium and vitamin D like dairy products, it turns out eating enough fruits and vegetables to boost phytonutrient consumption may be quite important."

To help close the "phytonutrient gap" and promote better bone health, Hendel, a registered physician assistant and health/wellness expert, offers the following tips for people at any age:

- **Calcium and Vitamin D-Rich Breakfast.** Start your day with breakfast foods like lower fat dairy, soy milk, yogurt and calcium-fortified orange juice and cereals for bone-healthy [nutrients](#).
- **Add Color to Meals.** Toss some phytonutrient-rich foods into meals. If you like soup, consider adding kale, broccoli or turnip greens, which also provide bone-building [calcium](#).
- **Exercise.** Keep in mind that diet alone will not keep your bones dense and strong. A weight-bearing exercise program that includes walking, jogging or running, and use of free weights, is important for bone health.
- **Meet the Daily Phytonutrient Goal.** A good goal for most individuals is to consume 10 servings of fruits and vegetables daily. For those having trouble getting enough fruits and vegetables into their diet, natural, plant-based supplements which contain phytonutrients can help close the "phytonutrient gap."

More information: For more information about the health benefits of phytonutrients, both reports, and more practical tips visit www.nutriline.com/color

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