

Older adults doing better than younger when it comes to phytonutrient consumption in daily diet

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Although only one in 10 American adults eats enough fruits and vegetables, new research being presented at the Experimental Biology meeting this week in Washington, D.C., finds older adults are consuming higher levels of carotenoids, flavonoids and other phytonutrients found in fruits and vegetables that are thought to support healthy aging. Specifically, the new findings suggest that, calorie for calorie, intakes of carotenoids are 20 percent higher, flavonoids 40 percent higher, and ellagic acid is 80 percent higher among older compared to younger adults.

Phytonutrients, which are plant-based compounds found naturally in fruits and [vegetables](#), may be associated with protective health benefits. For example, carotenoids such as lycopene and beta-carotene may offer breast, ovarian and other health benefits for women, while flavonoids such as quercetin and anthocyanidins may support brain health. Ellagic acid, found in foods like pomegranates, strawberries and walnuts, may help ward off some cancers, including breast and prostate.

This new phase of ongoing research, funded by Nutrilite Health Institute, the world's leading brand of vitamin, mineral, and [dietary supplements](#) based on 2008 sales, compares energy-adjusted phytonutrient intakes between younger (19-44 years), middle aged (45-64 years) and older adults (65+ years) to better understand if and how intakes vary by age. In addition to the carotenoid and flavonoid shortfalls observed among

younger adults, the new data indicate that energy adjusted resveratrol intake (excluding wine) is 50 percent higher in older adults versus younger adults, while adjusted intakes of lycopene are similar between age groups, and allicin intake (found in garlic) by [older adults](#) is lower.

"We know that Americans of all ages are missing out on the protective benefits of phytonutrients, but most troubling is our new finding that shortfalls are greatest among younger adults – the very ones who could most benefit from a lifetime of consumption," said Keith Randolph, Ph.D., Technology Strategist for Nutrilite. Previous related research also supported by the Nutrilite Health Institute found that eight in 10 Americans have a "phytonutrient gap," meaning they fall short in consuming key phytonutrients from foods including fruits and vegetables that could benefit their health. Additional findings from that research showed that while most Americans do not meet recommended intakes of fruits and vegetables, women 65 years and older were doing the best with a mere 12 percent meeting intake recommendations.

Food Sources of Phytonutrients

To help uncover which foods Americans are eating that provide these important nutrients, top ranked food sources for each of the phytonutrients were identified (3). Results showed that the top food source was not necessarily among the most phytonutrient-rich options, and that there may be opportunities for Americans to increase phytonutrient intakes by selecting more nutrient-rich options, such as the ones mentioned below:

- **Carotenoids:** While carrots are the number one source of the beta-carotene in the average American's diet, baked sweet potatoes have nearly double the beta-carotene per serving.

- Flavonoids: Grapes are the number one source of anthocyanidins in the American diet, but cherries and blueberries deliver three to four times as much anthocyanidins per serving.
- Ellagic Acid: The top food source of ellagic acid is strawberries, yet per serving, raspberries have three times the ellagic acid.

"Our data hit home the point that we need to increase accessibility to, and awareness of the quality of fruits and vegetables, not just the quantity. "It's eating the most phytonutrient-rich foods every day that likely translates into healthier aging, so getting the younger generations to choose the most phytonutrient-rich options whenever possible can make a big difference to the nation's health," continues Dr. Randolph.

Closing the Gap

The overall goal should be to encourage Americans to close their "phytonutrient gap" by selecting a greater variety of nutrient dense fruits and vegetables to "power up" their produce selection, and help increase phytonutrient intakes. A reasonable target for most individuals is to consume a combined total of 10 servings of fruits and vegetables daily. For those having trouble getting enough fruits and vegetables into their daily diet, plant-based supplements containing phytonutrients are an option.

Study Details

The analyses supporting this body of research were conducted by Exponent for Nutrilite Health Institute. The dataset comes from National Health and Nutrition Examination Surveys (NHANES), surveys that capture what Americans eat daily, supplemental nutrient concentration data from the United States Department of Agriculture (USDA) and the published literature. Fourteen [phytonutrients](#) were analyzed including

carotenoids (alpha-carotene, beta-carotene, beta-cryptoxanthin lutein/zeaxanthin, lycopene); flavonoids (anthocyanidins, epigallocatechin 3-gallate [EGCG], hesperitin, isoflavones, quercetin); phenolics (ellagic acid, resveratrol); allicin and isothiocyanates. The study population includes non-pregnant, non-lactating NHANES respondents ages 19 years and older with two complete and reliable 24-hour dietary recalls based on NHANES criteria. MyPyramid guidance for [fruit](#) and vegetable intake recommendations, which is based on the 2005 Dietary Guidelines for Americans, was used to assess the percent of adults consuming recommended intakes of fruits and vegetables.

More information: Kimmons J, Gillespie C, Seymour J, Serdula M, Blanck HM. Fruit and vegetable intake among adolescents and adults in the United States: percentage meeting individualized recommendations. *Medscape J Med.* 2009;11:26.

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