

NUTRILITE GLOBAL PHYTONUTRIENT REPORT FACT SHEET

New research shows worldwide shortfall in fruit and vegetable consumption and implications on phytonutrients and their health benefits

The Nutrilite Health Institute commissioned new research which was published in the *British Journal of Nutrition*, as well as was utilized for the development of *The Global Phytonutrient Report. The Global Phytonutrient Report: A Global Snapshot of Fruit and Vegetable Intake and Availability, and Implications for Phytonutrient Intakes**, documents new information on the availability and consumption of fruits and vegetables worldwide, and the implications for intake of phytonutrients – powerful organic compounds found in fruits and vegetables that may provide a range of health benefits, such as strengthening the body's antioxidant protection^{1,2} and promoting healthy immune response.³

Insights within the report underscore the need to better understand the relationship between fruit and vegetable consumption, phytonutrients and their role in promoting optimal health. While specific recommendations for phytonutrient intake amounts have not yet been established, it is clear that consumption of the appropriate quantity and variety of fruits and vegetables is the best way to ensure intake levels of phytonutrients that support optimal health.

KEY INSIGHTS

A majority of adults worldwide fail to consume the minimum quantity of fruits and vegetables recommended by the World Health Organization. Most would have to at least double their current consumption to meet the minimum global recommendation. Obstacles to eating fruits and vegetables may include: busy lives, cost, seasonal and geographic availability.

A select few fruit and vegetable categories are likely consumed widely across the globe based on availability.

Variety and quantity of phytonutrients consumed are likely to vary widely from region to region based on differences in the local availability of fruits and vegetables.

KEY FINDINGS

- 60-87% of people worldwide fall short of meeting the recommended minimum of five servings (or 400 grams) of fruits and vegetables per day.
- Among those consuming fewer than five servings per day ("low consumers"), the average consumption is approximately one-third to one-half of the minimum recommended level.

- The fruits and vegetables most commonly available across the regions examined and examples of their associated phytonutrients are:
 - **Fruiting vegetables**, including tomatoes (alpha-carotene, beta-carotene and lycopene), corn (lutein/zeaxanthin) and eggplants (anthocyanidin).
 - **Tropical and subtropical fruits**, including plantains (alpha-carotene and beta-carotene), mangos (beta-carotene), papayas (beta-cryptoxanthin) and guavas (lycopene).

Fruits

- Citrus fruits are frequently available in the Americas, Australia and South/Central America, Eastern Europe and Northern Africa/Middle East, but less so in other regions.
- Melons are more available in Eastern Europe, Northern Africa/Middle East and Asia than in other regions.
- Pome fruits are available primarily in European regions.

Vegetables

- Brassica vegetables are more available in Asia, Southern Africa and in Western, Northern and Eastern Europe than in other regions.
- Root vegetables are available primarily in European regions.

More information about The Global Phytonutrient Report can be found [here](#). For additional information about phytonutrient research from the Nutrilite Health Institute, contact Lindsay Pott at lindsay.pott@amway.com or Clare Wade at clare.wade@amway.com.

* *The Global Phytonutrient Report: A Global Snapshot of Fruit and Vegetable Intake and Availability, and Implications for Phytonutrient Intakes* was developed by Nutrilite using results from an analysis of fruit and vegetable intakes conducted for Nutrilite by Exponent, Inc. The analysis of fruit and vegetable intakes was conducted using data from several sources: World Health Organization's (WHO) World Health Survey (WHS), the Global Environment Monitoring System - Food Contamination Monitoring and Assessment Programme (GEMS/Food) and the Food and Agriculture Organization's (FAO) Supply Utilization Accounts (SUA) and Food Balance Sheets. All implications and inferences presented in this report were prepared by Nutrilite and represent the opinions of Nutrilite.

The thirteen regions in the analysis conducted for Nutrilite by Exponent, Inc. correspond to the 2006 diet clusters identified by the WHO GEMS/Food Program and include: Americas and Australia (e.g. United States); South/Central America (e.g. Mexico); South America (e.g. Brazil); Southern Europe/Mediterranean (e.g. Italy); Western Europe (e.g. Germany); Northern Europe (e.g. Sweden); Eastern Europe (e.g. Russia); Asia (A) (e.g. China and India); Asia (B) (e.g. Japan and Korea); Northern Africa/Middle East (e.g. Morocco); Central Africa (A) (e.g. Cameroon); Central Africa (B) (e.g. Nigeria); Southern Africa (e.g. South Africa). Both Asia and Central Africa were separated by GEMS into two clusters.

¹ Ribeiro FA, Gomes de Moura CF, Aguiar O Jr, de Oliveira F, Spadari RC, Oliveira NR, Oshima CT, Ribeiro DA. The chemopreventive activity of apple against carcinogenesis: antioxidant activity and cell cycle control. *Eur J Cancer Prev.* 2013.

² Singh BN, Singh BR, Singh RL, et al. Polyphenolics from various extracts/fractions of red onion (*Allium cepa*) peel with potential antioxidant and antimutagenic activities. *Food Chem Toxicol* 2009;7:1161-7.

³ Santos MS, Gaziano JM, Leka LS, Beharka AA, Hennekens CH, Meydani SN. Beta-carotene induced enhancement of natural killer cell activity in elderly men: an investigation of the role of cytokines. *Am J Clin Nutr* 1998;68:164-170.