



Heavy Metals **Arsenic, Cadmium and Lead**

Scientists define heavy metals as those that are naturally occurring elements with a specific gravity that is at least five times that of water.ⁱ Examples of heavy metals include arsenic, cadmium, iron, lead, chromium, copper, zinc, nickel, and mercury. Not all heavy metals are toxic to humans. In small quantities, metals such as iron, copper, manganese, and zinc are essential for good health. However, in larger amounts, some heavy metals, such as arsenic, cadmium and lead, can become significant health hazards.ⁱⁱ The U.S. Food and Drug Administration (FDA) monitors these elements in a variety of domestic and imported foods.

A 2017 research study by the U.S. Department of Agriculture (USDA) and Columbia State University found that heavy metal concentrations in U.S. peanuts were far below the established health standards.ⁱⁱⁱ For example, an adult woman would have to consume more than two pounds of peanuts per day to reach the cadmium limit, more than ten pounds daily to reach the arsenic limit, and more than sixteen pounds to reach the daily limit for lead.^{iv} The study, concluded that “heavy metal concentrations found in the U.S. peanut crop are low relative to health standards and consistent across crop years. These results taken in tandem with the results regarding the lack of pesticide residues signal the safety of U.S. peanuts as a food choice for consumers around the world.”

According to the FDA, arsenic is found in water, air, food, and soil in organic and inorganic forms. Cadmium is commonly found in industrial workplaces. While all heavy metals can be found in the soil, causes of higher-than-average exposure to arsenic and cadmium are most typically hazardous waste sites, industrial areas where ore is being processed or smelted, and in occupations such as construction work, most smelter operations, radiator repair shops, and firing ranges.^v

Lead is present in our environment in small amounts and everyone is exposed to some lead from daily actions such as inhaling dust, eating food, or drinking water. Lead in soil can be deposited on or absorbed by plants. As a result, many foods contain trace amounts of the element -- in the range of parts per billion (ppb).^{vi}

Approved 3/15/18. For further information, please contact the American Peanut Council office in Alexandria, Va. at: Tel: 703-838-9500; email: info@peanutsusa.com.

ⁱ Angima, Sam. Toxic Heavy Metals in Farm Soil. 2010. Updated July 18, 2013. Oregon State University Vol. V No. 3. Accessed online March 21, 2013. <http://smallfarms.oregonstate.edu/sfn/su10toxicmetals>

ⁱⁱ Occupational Safety and Health Administration. <https://www.osha.gov/SLTC/metalsheavy/index.html>. Accessed online March 21, 2018.

ⁱⁱⁱ Benjamin F. Blair and Marshall C. Lamb (2017) Evaluating Concentrations of Pesticides and Heavy Metals in the U.S. Peanut Crop in the Presence of Detection Limits. *Peanut Science*: July 2017, Vol. 44, No. 2, pp. 124-133.



^{iv} Angima, Sam. Ibid.

^v Occupational Safety and Health Administration. Ibid.

^{vi} U.S. Food and Drug Administration.

<https://www.fda.gov/Food/FoodborneIllnessContaminants/Metals/default.htm>. Accessed online March 21, 2018.