



## NEWS

# National Nutrition Survey - U.S.: NHANES

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The National Health and Nutrition Examination Survey (NHANES) is a program of studies designed to assess the health and nutritional status of adults and children in the United States, and to track changes over time. Findings from the survey are used to determine the prevalence of major diseases and risk factors for diseases. Information is used to assess nutritional status and its association with health promotion and disease prevention.

The first NHANES was conducted in 1971. The survey conducted between 2001 and 2002 generated data based on 8,940 individuals. The data, published in 2005, include nutrient intakes from food only and do not cover intakes from dietary supplements or over-the-counter medicines (1).

## Results

- 93% of Americans had inadequate dietary intakes of [vitamin E](#).
- The number of individuals with inadequate intakes was also high for [vitamin A](#) (44%) and [vitamin C](#) (31%).
- The prevalence of inadequacy was also high for [magnesium](#) (56%).
- For some nutrients, intakes were inadequate only for certain segments of the population: [vitamin B6](#) for females over 50 years of age, and zinc for males and females over 70 years of age and females 14–18 years of age.
- [Vitamin K](#), [calcium](#), and [potassium](#) may also be of concern.
- Most Americans had adequate intakes from food for carbohydrate, selenium, vitamin B3 (niacin), and vitamin B2 (riboflavin).

In 2009, the latest data on the status of vitamin C deficiency in the US population were published.

Blood [serum](#) concentrations of total vitamin C were measured in 7,277 civilians during NHANES 2003–2004 (2).

### Results

- About 21 million Americans have serious vitamin C deficiency, 66 million may develop vitamin C deficiency depending upon their health habits and disease status, and less than 30 million Americans achieve optimal vitamin C levels (100 micromole per liter).
- Smokers and low-income groups who typically exhibit low blood serum concentrations of vitamin C also have the highest rates of disease and mortality.
- The current [Recommended Daily Allowance](#) (RDA) for vitamin C is too low as it was established for healthy Americans and does not apply to 35% of the population, including smokers (50 million), estrogen or birth control pill users (13 million and 18 million), diabetics (16 million), pregnant women (4 million) and people taking aspirin (inestimable millions) or other drugs, and those with chronic infection (viral hepatitis, herpes, HIV), who have increased need for vitamin C.

In 2009, the NHANES, 2005–2006, provided an update on nutrient intake distributions from food and water for vitamin D, calcium, phosphorus, and magnesium (3).

### Results

- For both [vitamin D](#) and [calcium](#), only about one-third of individuals aged one year and over showed an adequate intake. Females aged 14–50 years were even less likely than their male counterparts to exceed their recommended intake.
- For vitamin D, most individuals aged over 50 years regardless of gender did not meet their adequate intake.
- Nearly one-half of all individuals aged one year and over had inadequate intakes of [magnesium](#).

In 2010, an analysis of NHANES 2003-2006 showed nutrition disparities in U.S. sub-populations with differing household income (4, 5).

## Results

- Inadequate nutrient intakes from foods are prevalent in children and adults, especially for [vitamin E](#).
- Groups with lower household income have a higher prevalence of inadequate intake for [vitamin A](#), [vitamin C](#), [vitamin B6](#), and [vitamin B9](#) (folate).

## REFERENCES

1. <http://www.ars.usda.gov/Services/docs.htm?docid=7674>
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  3. [http://www.ars.usda.gov/....vitD\\_ca\\_phos\\_mg\\_2005-06.pdf](http://www.ars.usda.gov/....vitD_ca_phos_mg_2005-06.pdf)
  4. Fulgoni V.L. et al. Nutrition disparities occur in U.S. sub-populations with differing household income: An analysis of NHANES 2003-2006. Presentation at the Experimental Biology Meeting in Anaheim, CA, USA. April 2010.
  5. Krebs-Smith S. N. et al. Americans Do Not Meet Federal Dietary Recommendations. J. Nutr. 2010; 140:1832-1838.
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