



National Center for Health Statistics

Iodine Level, United States, 2000

Iodine deficiency is one of the four major deficiency diseases in the world, yet it is the easiest to control (1). In the United States, iodine deficiency disorders (IDD) such as goiter, cretinism, stillbirth, spontaneous abortion, and retarded physical and intellectual development have been virtually eliminated through the iodization of salt. Recent surveys, however, have indicated that the proportion of the U.S. population with low urinary iodine levels is increasing. Although median values of urinary iodine in the U.S. population indicated adequate intake in the United States, the median decreased more than 50 percent between the first National Health and Nutrition Examination Survey (NHANES I, 1971-74) and NHANES III (1988-94). This reduction may be due, in part, to changes in food production (2).

Initial results from NHANES 2000 indicate that the median urinary iodine level of the population 6-74 years of age has not decreased since NHANES III. As shown in Table 1, the median was 16.1 mg/dL (95% CI 14.7-17.6) in 2000 compared with the 14.5 mg/dL estimate obtained from NHANES III.

Urinary iodine concentration measurement is the most widely used method for assessing the current iodine status of a population. Because most ingested iodine is excreted in the urine, urinary iodine concentration is a good indicator of iodine intake. According to The World Health Organization (WHO), median iodine levels should be greater than 10 mg/dL in "iodine sufficient" populations (2).

The NHANES 2000 and earlier surveys used a stratified, multistage, probability sample of the civilian noninstitutionalized U.S. population. The NHANES protocol includes a home interview followed by a standardized physical examination in a mobile examination center. As part of the NHANES 2000 examination protocol, urine specimens are collected for persons 6 years of age and older. Urinary iodine levels were measured for a randomly selected subsample consisting of one third of participants 6 years of age and older. The sample size for NHANES 2000 urinary iodine was 1,433.

Because the sample size for NHANES 2000 is smaller than that of the multiyear NHANES III and because the urinary iodine measures are only available for a subsample, additional analyses on data from subsequent annual NHANES surveys will be necessary to confirm these findings and to allow more detailed analyses of iodine status in population subgroups.

Table 1. Urinary iodine levels (mg/dL) in the United States, 6-74 years of age

	NHANES I, 1971-74 ²	NHANES III, 1988-91 ²	NHANES 2000
Median	32.00	14.5	16.1
SE	0.6	0.3	0.7

¹ Latham, MC. Human Nutrition in the Developing World. Rome: Food and Agriculture Organization of the United Nations. 1997.

² Hollowell, JE et al. Iodine nutrition in the United States. Trends and public health implications: Iodine excretion data from National Health and Nutrition Examination Surveys I and III (1971-74 and 1988-94). J Clin Endocrinol Metab 83:3401-3408. 1998.