

Letter to the Editor

Dietary Iodine in Pregnant Women from the Boston, Massachusetts Area

Dear Editor:

ADEQUATE MATERNAL IODINE intake is essential for fetal neurodevelopment. Worldwide, iodine deficiency is the leading cause of preventable mental retardation (1). Since the iodization of salt and other foods in the 1920s, U.S. dietary iodine has generally been adequate. However the median adult U.S. dietary iodine intake decreased by 50% from the time of the first National Health and Nutrition Examination Survey (NHANES I, 1971–1974) to the time of NHANES III (1988–1994) (2). Women of childbearing age may be at increasing risk for moderate iodine deficiency. The U.S. Institute of Medicine's recommended dietary allowance (RDA) for pregnant women is 220 μg iodine daily (3); this corresponds approximately to a urinary iodine concentration of 15 $\mu\text{g}/\text{dL}$. The median urinary iodine value in pregnant women ($n = 208$) from NHANES I was 32.7 $\mu\text{g}/\text{dL}$, with 1% of the women sampled having urinary iodine levels below 5 $\mu\text{g}/\text{dL}$. The median urinary iodine level among pregnant women from NHANES III ($n = 348$) was 14.1 $\mu\text{g}/\text{dL}$, with 6.9% having urinary iodine levels below 5 $\mu\text{g}/\text{dL}$. Dietary iodine is currently being surveyed in NHANES IV but results will not be reported until after the survey is completed.

We obtained spot urine specimens from a sample of 100 consecutive healthy pregnant women from a Boston, Massachusetts, inner-city obstetric clinic (mean age $29 \pm$ standard deviation [SD] 6.8 years; 6% Asian, 14% Hispanic, 16% white, 49% black, 15% other or undetermined). Women were in the first or second trimester of pregnancy. Total urine iodine concentrations were measured spectrophotometrically by a modification of the method of Benotti et al (4). The study was reviewed by an Institutional Review Board, and informed consent was obtained from all subjects.

The median urinary iodine in our sample was 14.9 $\mu\text{g}/\text{dL}$. Urinary iodine levels ranged from 1.3 $\mu\text{g}/\text{dL}$ to 120 $\mu\text{g}/\text{dL}$. Nine percent of women sampled had urinary iodine levels below 5 $\mu\text{g}/\text{dL}$ (iodine deficiency) and 49% had values below that recommended for pregnant women (Fig. 1).

These data suggest that dietary iodine intake in pregnant U.S. women has remained stable over the past decade, and that population dietary iodine levels remain adequate by World Health Organization standards (5). However, approximately half of the pregnant women in our sample had iodine intake below the U.S. RDA, and 9% had levels consistent with iodine deficiency. Although cretinism due to iodine deficiency is not a problem in the United States, subtle

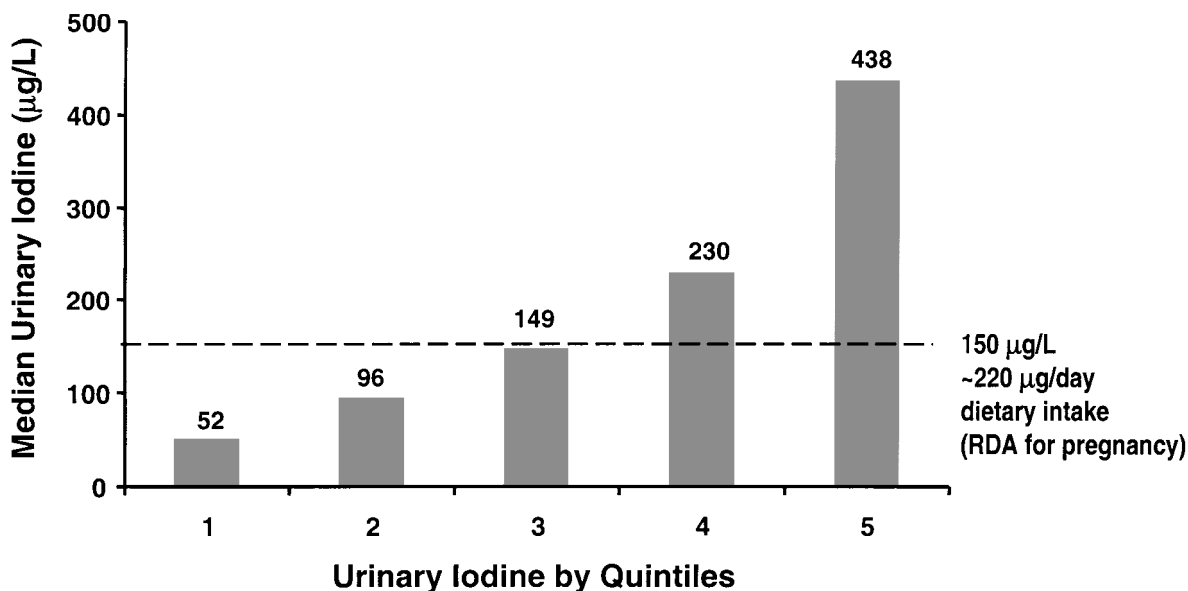


FIG. 1. Urinary iodine concentrations in 100 Boston area pregnant women.

developmental delays may result from mild maternal iodine deficiency. Currently, many prenatal vitamins do not contain iodine. There should be more public awareness of the importance of dietary iodine for pregnant women and iodine should be included in all standard prenatal multivitamin formulations.

References

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Address reprint requests to:*

*Elizabeth N. Pearce*¹

*Hamid R. Bazrafshan*²

*Xuemei He*¹

*Sam Pino*¹

Lewis E. Braverman^{1*}

¹*Section of Endocrinology, Diabetes, and Nutrition*

Boston Medical Center

Boston University School of Medicine

88 East Newton Street, Evans 201

Boston, MA 02118

²*Department of Medicine*

Golestan University Medical School

Golestan

Islamic Republic of Iran

*E-mail: lewis.braverman@bmc.org