

Iodine status after iodized salt supplementation in schoolchildren of eastern Nepal.

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Abstract

This study was designed to assess the urinary iodine concentrations of schoolchildren at baseline and after iodized salt supplementation in eastern region of Nepal. A cross sectional study was conducted from August 2009 to July 2011 among schoolchildren of three eastern districts of Nepal: Sunsari, Dhankuta, and Tehrathum. A sample of 828 school age children from the three districts was chosen for the study after obtaining written consent from their guardians. The schoolchildren treatment group (n=300) was provided with a supplement of iodized salt for six months. Urinary iodine concentration was estimated by ammonium persulfate digestion microplate method at baseline and after supplementation. Urinary iodine controls L1, L2 (Seronom, Norway) were analyzed to obtain intra-assay CVs (L1 = 7.4%, L2 = 3.3%) and inter assay CVs (L1=23.5%, L2=11.26%). Median interquartile range urinary iodine concentration in the three districts: Sunsari, Dhankuta and Tehrathum at baseline versus intervention were 272.0 (131.5-473.0) microg/l versus 294.0 (265.0-304.0) microg/l (p=0.379), 247.0 (144.5-332.32) versus 361.0 (225.66-456.52) microg/l (p<0.001), and 349.5 (203.75-458.09) microg/l versus 268.76 (165.30-331.67) microg/l (p<0.001), respectively. This study indicated improved iodine status and increased median urinary iodine concentration after iodized salt supplementation. Regular monitoring of population urinary iodine concentration at national and regional levels should be performed to ensure that all individuals have optimal delivery of iodine nutrition.

PMID: 24450245 [PubMed - indexed for MEDLINE]