

Low levels of iodine reported in iodized table salt in the U.S.

According to the first survey of iodized salt from U.S. homes, more than half of iodized salt samples contained less than the recommended amount of iodine.

Rebecca Renner Science News, American Chemical Society, January 9, 2008

The results, by chemist Sandy Dasgupta at the University of Texas Arlington and colleagues, have implications for pregnant and nursing women as well as for children. The samples came from newly opened salt containers purchased by volunteers in 40 states. Forty-seven of the 88 samples had less than the FDA-recommended quantity of iodine (45ppm) and 6 contained more. The researchers also found that salt lost iodine when the humidity was high. "There is no guarantee that the salt even contains the amount of iodine stated on the label," says Dasgupta. "We found new containers of salt with almost no iodine at the top and four times more at the bottom. A pregnant woman or a woman nursing a baby could use that salt at the top for months and get next to no iodine," he adds. Richard Hanneman, president of the U.S. Salt Institute, a manufacturers group, contends that iodized salt should be homogenous and questioned the results because the sample collection relied on volunteers.

Public-health studies from the past 30 years suggest that iodine levels in the U.S. population, particularly for women of childbearing age, are getting too low, says epidemiologist Kevin Sullivan at Emory University. Urinary iodine has plummeted by almost 50% in adults, and the frequency of moderate iodine deficiency in pregnant women has jumped from 1% to 7%. Thyroidologist Robert Utiger of Harvard Medical School believes that everyone should increase their iodine

intake and expressed these views in a recent editorial (*N Engl J Med* 2006, 354, 2819–2821).

Decreasing iodine levels reflect changes in American food and dietary habits. Several sources of iodine in the diet have been phased out. Iodine in milk has decreased because of changes in cattle feed and a phaseout of iodine dairy sanitizers. Commercial bakeries also have decreased the use of dough conditioners that contain iodine. The most significant change may be the



increasing trend of eating out and a growing reliance on processed foods. With very few exceptions, restaurants and fast-food outlets use noniodized salt, according to Hanneman.

Companies that process food also eschew iodized salt, according to a spokesman for the Grocery Manufacturers Association, judging that it can change the taste and flavor of food products. This is an oft-repeated myth,

with no evidence behind it, says nutritionist Michael Zimmermann of the Swiss Federal Institute of Technology Zurich. A delegation of Moldovan food producers who recently visited Switzerland found that addition of iodine to Swiss bread, baked goods, and cheese causes no change in the taste of these foods. About 60% of Swiss processed foods are made with iodized salt.

Many countries with long-standing iodization programs, including the U.S., The Netherlands, New Zealand, France, and Switzerland, have reported declining iodine levels. To combat this decline, Swiss officials monitor iodine levels once every 5 years and adjust salt iodine levels accordingly. When the iodine level in salt was increased in Switzerland in 1998–9, urinary iodine rose and newborn infants had a more normal level of thyroid function, according to Zimmermann.

At a March 2007 meeting organized by WHO Europe, participants agreed that promoting iodized salt does not conflict with recommending reduced salt intake. "Everyone agrees salt intakes should be 5 grams a day or less, but all salt consumed should be iodized," says Zimmermann.

"The best way to address this issue is to at least assure that iodized salt contains the amount of iodine it should, ideally to raise the iodine content of salt, and get the food processors to use iodized salt," says Utiger.