Low iodine intakes in Israeli pregnant women

Iodine is an essential nutrient for human health throughout the life cycle, especially during early stages of intrauterine life and infancy, to ensure adequate neurocognitive development. The case of Israel may be instructive for exploring the link between iodine status and habitual iodine intake in the setting of extensive national reliance on desalinated water. The growing global reliance on desalinated iodine-diluted water raises the specter of increased iodine deficiency in several regions. The aim of this study was to explore the relationship between iodine intake, including iodized salt and iodine-containing supplements intake, and iodine status among pregnant women residing in a sub-district of Israel that is highly reliant on desalinated iodine-diluted water.

A total of 134 consecutive pregnant women were recruited on a voluntary basis from the obstetrics department of the Barzilai University Medical Center during 2018. An iodine food frequency questionnaire (sFFQ) was used to assess iodine intake. A questionnaire was used to collect data on demographic and health characteristics, and a blood sample was obtained. Elevated serum thyroglobulin values ($\geq 13 \mu g/L$), were found among 67% of participants, indicating insufficient iodine status.

The estimated iodine intake (mean ± SD, 187 ± 106 μg/d) was lower than the levels recommended by the World Health Organization of 250 μg/day (Figure 1). The prevalence of iodized salt intake and iodine containing supplement intake were 4 and 52%, respectively. While the Israeli Ministry of Health has recommended the intake of iodized salt and iodine containing supplements, this is apparently insufficient for achieving optimal iodine status among Israeli pregnant women. The evidence of probable iodine deficiency in a sample of pregnant women suggests an urgent need for a national policy of iodized salt regulation, as well as guidelines to promote iodine containing supplements and adherence to them by caregivers. In addition, studies similar to this one should be undertaken in additional countries reliant on desalinated iodine-diluted water to further assess the impact of desalinization on maternal iodine status.

Commenting on the findings, Prof. John Lazarus, IGN Regional Coordinator for Western Europe, wrote: “The data in this group of pregnant women should serve as a wakeup call to the public health community (in Israel) to correct this deficiency which is known to significantly affect child neurodevelopment. There are several issues to be addressed. The knowledge base relating to iodine nutrition especially during pregnancy is low. An educational plan is required. The strategy for achieving adequate iodine nutrition in the population and particularly before and during pregnancy requires urgent review. While iodine supplementation before and during gestation can correct iodine deficiency, the provision of iodized salt in the community is recommended, similar to more than 80% of countries in the world. It is indeed a time for action to ensure the adequate intellectual performance of Israel’s children.”

Many Israeli pregnant women have low iodine intakes, putting their babies at risk for impaired cognitive development

![Figure 1](https://example.com/figure1.png)

**Figure 1** Distribution of estimated daily iodine intake (μg/d) in Israeli pregnant women assessed by a semi-quantitative iodine food frequency questionnaire. The reference line represents the recommended daily iodine intake (220 μg/d).