National survey in Israel reports one of the lowest iodine intakes in the world

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The first national iodine survey conducted in Israel has revealed a high burden of iodine deficiency among Israeli schoolchildren and pregnant women. Government funding and legislation, and a government-regulated programme of salt iodization, are essential to reducing this burden, which poses a high risk of impaired neurological development.

Iodine deficiency is a key global risk factor for impaired child development, and the World Health Organization recommends routine monitoring of population-based data on urinary iodine every five years as a means of sustainable elimination of IDD. Yet Israel is among the few countries that have never performed a national iodine survey and does not provide iodine prophylaxis. Researchers from the Hebrew University of Jerusalem, their colleagues at Maccabi Healthcare Services and Barzilai University Medical Center in Ashkelon in Israel, and ETH Zurich in Switzerland, with support of the Iodine Global Network, have obtained the first nationally representative data about iodine status in the Israeli population. To do this, they collected pre-discard spot-urine samples from 1,023 school-age children and 1,074 from pregnant women, representing all regions and major sectors in Israel (Arab, Jewish secular and orthodox), during 2016 at the Maccabi Healthcare Services (MHS) central laboratory.

The median urinary iodine concentration (mUIC) among Israel's pregnant women was only 61 µg/L and for school-age children it was 83 µg/L, which suggest that the iodine status in Israel is amongst the lowest in the world. Virtually no differences were seen between different ethnicities and regions of the country suggesting that low iodine status is widespread and universal.

"The immediate implication of our findings is that we need to improve the public's intake of iodine," said Prof. Aron Troen, Principal Investigator at the Nutrition and Brain Health Laboratory, School of Nutrition Science, Hebrew University's Robert H. Smith Faculty of Agriculture, Food and Environment. "It seems that as in most other countries, Israel's food supply and our collective dietary habits do not ensure iodine sufficiency. Thus eliminating iodine deficiency and achieving optimal iodine status in Israel's population will require a sustainable, government-regulated program of salt or food iodization. The costs are small and the benefits substantial and have been proven in over 160 countries around the world where this is done."

Until now, isolated but persistent calls to address this issue have not translated into action, perhaps due to a lack of awareness, or the unfounded but widespread belief that Israel's proximity to the sea likely prevents iodine deficiency, leading to a lack of political will. However, in the absence of a universal salt iodization program, and in light of the heavy national reliance on iodine-depleted desalinated seawater as drinking and irrigating water, the study's results point to a major national public health problem.

The research findings were presented at The 46th Annual Meeting of the Israel Endocrine Society, which took place on March 20–21 in Ramat Gan, Israel. Dr. Jonathan Arbelle, lead co-investigator from Maccabi Healthcare Services, called on the Israel Endocrine Society to develop guidelines for clinical practitioners who care for pregnant and lactating women. "Caregivers should recommend adequate iodine intake during pregnancy and lactation, and a randomized clinical trial of risk and benefit for correction of mild-moderate iodine deficiency during pregnancy must be considered," said Dr. Arbelle.

"A healthful diet is a foundation of a prosperous nation. The public has a right, and government has both a moral obligation and clear-cut social and economic incentive to ensure that the nation's food supply supports the public's health, well-being and productivity," said Prof. Troen.

Currently, only a small fraction of the salt sold in Israel is iodized, and it is sold at a much higher price than regular salt, although it does not need to be. The World Health Organization and the Iodine Global Network encourage mandatory, universal salt iodization, including the all discretionary household salt. However, some countries have effectively been able to increase their iodine intakes through the use of iodized salt in processed foods, including bread and condiments, and this may be considered in Israel. "I'm pleased that the Ministry of Health has been supportive of this particular research effort, but to act on the findings and make a sustainable change will require government funding and legislation," added Prof. Troen.

These findings also highlight the critical need for routine public health surveillance, not only of iodine, but also of other nutritional and environmental exposures that determine the Israeli population's collective health.