Iodine Deficiency: Epidemiology, Consequences, Reduction Strategies

Biography

Dr. Fabian Rohner is an International Nutrition and Public Health Specialist of Groundwork, Switzerland. In his current position at GroundWork, he serves as the study sponsor of two large clinical trials investigating the impact of combined agriculture, nutrition and WASH intervention package on health and nutritional status in young children as well as in pregnant women and their offspring in Western Kenya. Also, he has recently completed a validation study of quantitative rapid methods to analyze the salt iodine content. Further, he is the principal investigator or technical lead on national micronutrient surveys in Africa and Asia, some of which include iodine status assessment.

Dr. Rohner focuses on the design and management of impact evaluations for large-scale food fortification and infant and young child nutrition programs. He is also a member of the US National Institute of Health’s ‘Biomarkers of Nutrition for Development’ iodine expert panel, the US CDC ‘Biomarkers Reflecting Inflammation and Nutritional Determinants of Anemia’ initiative and serves on the technical advisory panel of the ‘Power of Nutrition’. He has conducted clinical trials related to the prevention and treatment of malaria, helminths and micronutrient malnutrition in West Africa, as well as multiple research studies around iodine nutrition.

Abstract

Adequate iodine status is important for optimal physical and cognitive development from the unborn fetus up to adult life. Depending on the severity of iodine deficiency and the life stage in which it occurs, consequences can range from severe malformations to disadvantages that are not easily visible. Historically, most severe forms of iodine deficiency occurred in mountainous areas of the world, with goiters being highly prevalent prior to implementing salt iodization programs. But even in less prone areas, milder forms of iodine deficiency have had negative consequences on physical and cognitive development in large parts of the world.

The iodization of table salt has been a tremendous public health success in the past 2-3 decades, and the number of countries with iodine deficiency has dropped from 110 in 1993 to 21 in 2018. However, now that some of these iodization programs have matured, sustainability has become an issue: funding sustainability with decreasing contributions from external donors, as well as political sustainability, including ongoing support and commitment to monitoring and importantly, law enforcement.

Changing dietary patterns, with increasing consumption of processed foods, in particular in the SEA region, pose additional challenges to adapting legal frameworks, monitoring and law enforcement. Lastly, although at national levels, many countries have demonstrated iodine
sufficiency in certain population groups (e.g. school-age children), there are other population segments that may have inadequate iodine status (e.g. pregnant women), and within a country, there are often important geographic differences that are masked by a single national estimate.