



Dr Sarah Baths

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Dr Sarah Bath's main research interest is iodine, and she has been researching the effects and predictors of iodine deficiency since 2009. She completed her PhD on iodine deficiency in UK pregnant women, under the supervision of Professor Margaret Rayman. Dr Bath is now a Senior Lecturer in Public Health Nutrition at the University of Surrey, and her research has been funded by the Medical Research Council (Population Health Scientist Fellowship (2013-2016), the European Commission (Horizon 2020: EUthyroid project 2015-2018; Horizon Europe: EUthyroid2 project, 2023-2027), and charities such as The Waterloo Foundation.

Her work showing that mild-to-moderate iodine deficiency in pregnancy was associated with lower child IQ and reading scores was published in *The Lancet* in 2013. Since then, she has collaborated on projects to explore the effects of deficiency in pregnancy using European population-based birth cohorts. Her work also involves exploring the predictors of iodine status and dietary sources of iodine, including the variability in iodine concentration of cow's milk and the iodine content of milk-alternative products; her current research focuses on the effects of plant-based diets on the risk of iodine deficiency. As a Registered Dietitian, Dr Bath is keen to translate findings into information for the public and is the author of an iodine fact sheet, published by the British Dietetic Association.

Dr Bath chaired an ILSI Europe Expert Group on iodine intake in Europe (2017-2022) and is currently the chair of the Scientific Advisory Board for the World Iodine Association (WIA).



Latest insights on iodine

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Iodine is an essential component of the thyroid hormones that are required for brain development. Severe iodine deficiency can adversely affect cognitive function and result in lower IQ but this is now relatively rare on a worldwide basis, largely as a result of iodised salt programmes. However, mild-to-moderate iodine deficiency during pregnancy is more common in many countries, including the UK. The effects of mild-to-moderate iodine deficiency on brain development and neurocognitive function are less well known, but there is evidence that it is associated with subtle impairments in offspring IQ, reading scores, and spelling scores at ages 8 and 9 years.

Increasingly it appears that pre-pregnancy iodine status is important for maternal and child outcomes. However, many young women of childbearing age may have a low intake of iodine-rich foods, such as milk and fish, and therefore may enter pregnancy with low iodine status. This is especially relevant in countries where there is not an iodine fortification programme and therefore iodine intake is dependent on dietary choice.

Plant-based diets are increasingly recommended for both sustainability and health, and these diets may reduce iodine intake through restriction of animal foods which provide the majority of iodine intake. For example, milk and dairy products provide 51% and 33% of the iodine intake of UK children and adults respectively. By contrast, we have shown that milk-alternative drinks that are not fortified with iodine have an iodine concentration that is just 2% of that of cows' milk. Current estimates suggest that most products on the market are not fortified with iodine – just 20% vs 63% that are fortified with calcium.

This talk will review the latest evidence and present some possible solutions to ensuring adequate iodine intake in vulnerable groups.

