

IODINE DEFICIENCY: STILL A WORLDWIDE PROBLEM

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'The UK lies between Angola and Mozambique in the top 10 iodine-deficient countries in the world.'

Iodine deficiency (ID) still affects up to 2 billion people worldwide, including 285 million school-age children. The condition has effects on growth and development and is the commonest cause of preventable mental deficiency worldwide. While significant improvements in the consumption of iodised salt have been made in many countries in the past 25 years, up to 50% of children in Europe live in an iodine-deficient environment.

The International Council for Control of Iodine Deficiency Disorders (ICCIDD, www.iccidd.org) was founded in 1985. It recognised a spectrum of ID disorders ranging from cretinism in severe deficiency (IQ <40; urinary iodine <20µg/l) to a 5 point loss of IQ in areas of mild to moderate deficiency, despite normal maternal thyroid function during gestation.

During the past century, the prevalence of goitre due to ID has reduced significantly in many European countries so that this condition is now rare. In the UK, this was not due to any legislation concerning the supply of iodine to the population, but occurred in a *laissez faire* episode, during which milk was consumed in increasing quantities and cattle cake containing iodine was administered to cows, particularly in wintertime. Milk consumption has declined over the past two decades, and a national survey measuring urinary iodine in 13-year-old schoolgirls from nine UK centres identified mild to moderate ID in two-thirds of the sample population. This is important in schoolgirls because they will become pregnant in years to come, and adequate maternal thyroid hormone is critical for normal fetal brain and nervous system maturation.

Randomised controlled trials of iodine supplementation in pregnant women in Spain with mild ID have shown that children whose mothers received iodine perform better in IQ tests than those whose mothers did not. Randomised trials of iodine administration to 9-year-old schoolchildren in several countries document improvements in cognitive ability in children receiving iodine compared with carefully matched control children.

In a UK study by Bath *et al.* (*Lancet* 2013 in press), 8-9-year-old children of mothers followed in the ALSPAC (Avon Longitudinal Study of Parents and Children) cohort showed impaired cognitive performance related to maternal urinary iodine in pregnancy.

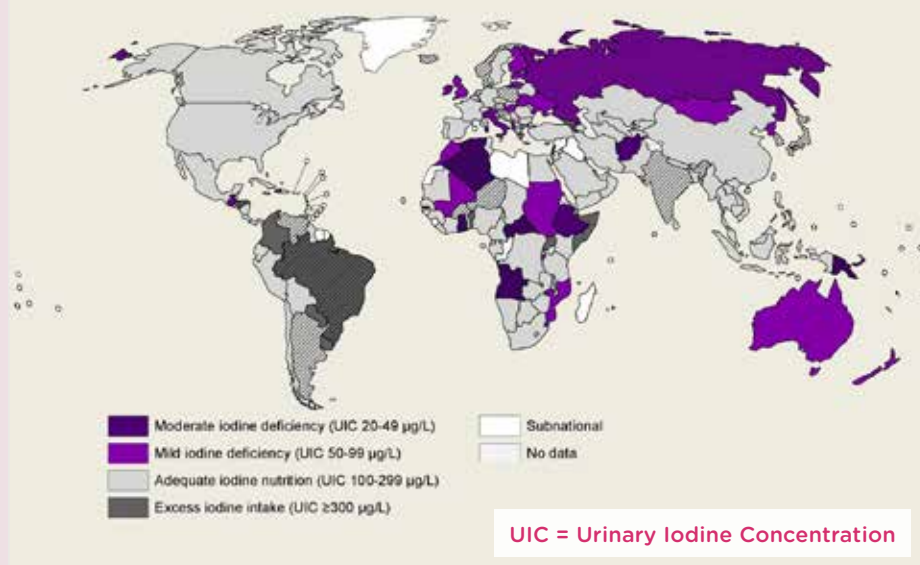
In fact, the UK lies between Angola and Mozambique in the top 10 iodine-deficient countries in the world relating to the number of schoolchildren at risk. There has been no UK legislation regarding the use of iodised salt either for household consumption or for use in processed food manufacturing. A survey of salt samples purchased from five supermarkets in the UK showed only 5% with adequate iodine content. In the opinion of the UK Iodine Status Strategy Group (UKISS), there is a requirement to pursue appropriate advocacy relating to the UK iodine situation, so that the Government and public health authorities can institute preventive action. The UK should not be an underdeveloped country in this context. The ICCIDD must strive to correct ID in all European countries.

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More information can be found at: www.iccidd.org.

2012 National iodine status based on median (UIC) in school-age children.



FURTHER READING

Lazarus JH *et al.* 2012 *BMJ Rapid Response* <http://bit.ly/YNjkAC>.

Vanderpump MPJ *et al.* 2011 *Lancet* 377 2007–2012.

Zimmermann MB & Andersson M 2012 *Current Opinion in Endocrinology, Diabetes & Obesity* 19 382–387.