Is it true that lack of iodine really causes brain damage?

Online Q&A
Updated May 2013

Q: Is it true that lack of iodine really causes brain damage?

A: Iodine deficiency is the main cause of brain damage in childhood. It results in impaired cognitive and motor development which affects a child's performance at school. In adulthood, it affects productivity and the ability to find a job. Iodine-deficient people may forfeit 15 IQ points, and nearly 50 million people suffer from some degree of iodine deficiency-related brain damage.

It is particularly important that pregnant women receive enough iodine in their diet, as iodine is a key nutrient in the fetal development process, especially with respect to the brain. Iodine deficiency during pregnancy not only results in brain damage to the fetus, but also in low birth weight, prematurity and increased perinatal and infant mortality.

Young children are also particularly at risk because the brain still needs iodine for its development during the first two years of life. In addition, iodine deficiency in children is responsible for disorders in physical and cognitive development, and hypothyroidism.

The latest global estimate is that 1.88 billion people, including 241 million school-age children have insufficient dietary iodine intake (1). Even if iodine deficiency may be more severe in developing countries, it equally affects developed and developing countries.

Iodine deficiency can easily be prevented at low cost. One of the best and least expensive methods of preventing iodine deficiency disorder is by simply iodizing table salt, which is currently done in many countries. Where salt iodization has been in place for at least a year, improvement in iodine status within the population has been overwhelming.

It is because of these adverse effects on brain development that the 58th World Health Assembly passed a resolution to urge a renewed effort from the international community, including WHO and UNICEF, to address iodine deficiency in the 54 countries most affected. Efforts include:

- developing strong commitment from public heath authorities

- education of the public
- effective collaboration with all partners involved especially the salt industry
- a good monitoring system to make sure that salt is adequately iodized
- national legislations on iodized salt that are enforced.

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1. Andersson M, Karumbunathan V, Zimmermann M. Global iodine status in 2011 and trends over the past decade. *Journal of Nutrition*, 2012, 142:744-750.

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Iodine deficiency disorders

Iodine status worldwide

World Health Assembly resolution WHA58.24. Sustaining the elimination of iodine deficiency disorders [pdf 14.7kb]

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