

## AAP Recommendations on Iodine Nutrition During Pregnancy and Lactation

Adequate iodine is crucial for thyroid hormone production, which is required for normal neurodevelopment during pregnancy and early childhood. Women who are pregnant and lactating require increased iodine intake. Unfortunately, median iodine levels in the United States have decreased by 50% in the past 3 decades, with recent studies demonstrating that pregnant women are mildly iodine deficient. Nevertheless, data from the NHANES 1999–2006 showed that only 22% of US pregnant women take an iodine-containing dietary supplement.<sup>1</sup> Even mild iodine deficiency has been associated with adverse effects. A recent study from the United Kingdom demonstrated significantly decreased IQ scores in children whose mothers were mildly iodine deficient during pregnancy.<sup>2</sup>

We therefore applaud the American Academy of Pediatrics (AAP) for focusing on the issue of iodine sufficiency during pregnancy and breastfeeding.<sup>3</sup> Nevertheless, we believe that the AAP position would benefit from the following modifications, which would then be consistent with previous recommendations from the American Thyroid Association,<sup>4</sup> Endocrine Society, Teratology Society, American Association of Clinical Endocrinologists, and the International Council for the Control of Iodine Deficiency Disorders Global Network:

1. The AAP statement does not make a clear recommendation for iodine supplementation during pregnancy. The organizations above recommend that all pregnant US women take a prenatal vitamin that contains 150 mcg iodine daily in the form of potassium iodide.

2. The AAP statement recommends that breastfeeding women ingest a supplement with at least 150 mcg of iodine daily. The organizations mentioned recommend that breastfeeding women take a prenatal vitamin that contains 150 mcg of iodine. Taking an excess of iodine (>1100 mcg daily) can result in iodine-induced thyroid dysfunction and should be avoided.<sup>5</sup>
3. The AAP recommends that urinary iodine testing be considered in at risk individuals. Urinary iodine concentrations can be used to determine the dietary iodine status of populations, but because of substantial day-to-day and hour-to-hour variation in urinary iodine excretion, urinary iodine concentrations cannot be used to determine the iodine status of an individual patient.

In conclusion, the recent statement by the AAP helps to maintain focus on the importance of iodine sufficiency during pregnancy and lactation—an issue that directly affects the health and neurocognitive development of our children. We encourage the AAP to evaluate the issues raised in our letter and look forward to working collaboratively to make iodine deficiency in the United States an issue of the past.

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### Conflict of Interest:

None declared

### REFERENCES

1. Gahche JJ, Bailey RL, Mirel LB, Dwyer JT. The prevalence of using iodine-containing supplements is low among reproductive-age women, NHANES 1999–2006. *J Nutr*. 2013;143(6):872–877

2. Bath SC, Steer CD, Golding J, Emmett P, Rayman MP. Effect of inadequate iodine status in UK pregnant women on cognitive outcomes in their children: results from the Avon Longitudinal Study of Parents and Children (ALSPAC). *Lancet*. 2013;382(9889):331–337
3. Council on Environmental Health. Iodine deficiency, pollutant chemicals, and the thyroid: New information on an old problem. *Pediatrics*. 2014;133(6):1163–1166
4. Stagnaro-Green A, Abalovich M, Alexander E, et al; American Thyroid Association Taskforce on Thyroid Disease During Pregnancy and Postpartum. Guidelines of the American Thyroid Association for the diagnosis and management of thyroid disease during pregnancy and postpartum. *Thyroid*. 2011;21(10):1081–1125
5. Leung AM, Braverman LE. Consequences of excess iodine. *Nat Rev Endocrinol*. 2014;10(3):136–142

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## Author's Response

We appreciate Leung et al's comments and agree with their recommendations concerning pregnant women and the potential for toxicity. Measurement of an individual's urinary iodide appears in some older recommendations,<sup>1</sup> with the warning that it measures only recent intake, as Leung et al point out. It is more useful for community surveys.

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### Conflict of Interest:

None declared

### REFERENCES

1. World Health Organization, United Nations Children's Fund, International Council for the Control of Iodine Deficiency Disorders. *Assessment of Iodine Deficiency Disorders and Monitoring Their Elimination: A Guide for Programme Managers* (WHO/NHD/01.1). Geneva, Switzerland: World Health Organization, 2001

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