

## Dietary iodine intake in young Irish women – cause for concern

B. Maher<sup>1</sup>, C. O’Leary<sup>2</sup>, C Sweeney<sup>1</sup> and S. O’Flynn<sup>1</sup>

<sup>1</sup>School of Medicine, University College Cork, Ireland and <sup>2</sup>Medical School (Final Year Medical Student), University College Cork, Ireland

Ireland has traditionally been considered a country at risk of iodine-deficiency. Iodine deficiency in pregnancy has been linked to neuro-cognitive deficits in children born to these mothers<sup>(1)</sup>. Recent UK research suggests that adolescent girls have sub-optimal dietary iodine intake and mild iodine deficiency<sup>(2)</sup>. Current population iodine status in Ireland is unknown but concern has been expressed regarding the iodine status of pregnant women<sup>(3)</sup>. Food sources of iodine are limited and there is no salt iodisation programme in this country. Availability of iodised salt is low.

Study objectives were to assess the intake of iodine rich foods in a population of young females and to assess participants’ knowledge of iodine including dietary sources.

A questionnaire assessing knowledge about iodine and food frequency intake of iodine-rich foods was administered to 100 female medical students at University College Cork. The questionnaire was developed from validated food frequency questionnaires and adapted for iodine food sources. Majority of students were Final Year and Irish.

Whilst overall knowledge about iodine physiology was good, over one third of students thought that sea salt contained more iodine than regular salt, that organic milk had a higher iodine content than inorganic milk, and that iodine deficiency had largely been eradicated. Three-quarters of students thought that table salt contained iodine and 46% thought that iodine was abundant in many foods. Over half of students drank one or less glasses of milk per day and 75% never, or at most once a week, drank milk on its own. One third of students ate fish only once a month or never, and only 1 in 5 ate fish twice a week. Half of students never ate shellfish while 41% only ate shellfish once a month. Twenty-five per cent only ate cheese once a week or less and over one third ate meat twice a week or less.

Whilst this study is limited by the lack of an accurate food composition database for iodine, and the fact that the food frequency questionnaire was unvalidated, results suggest that dietary intake of iodine in Irish females is sub-optimal. Consumption of milk, fish and shellfish, the richest food sources of iodine, is particularly low. Consumption of iodine-rich foods in the general populace may even be lower. There is an urgent need to measure population iodine status, and to assess iodine status in women of child-bearing age. Low milk and dairy intake also has implications for bone health in this population. Consideration should be given to a salt iodisation programme and to mandatory iodisation of salt used in bread-making. Peri-conceptual supplemental iodine is another consideration.

1. Henrichs J, Bongers-Schokking JJ, Schenk JJ, *et al.* (2010) Maternal thyroid function during pregnancy and cognitive functioning in early childhood; the generation R study. *J Clin Endocrinol Metab* **95**, 4227–34.
2. Vanderpump Mark, Lazarus J, Smyth P, Laurberg P, Holder R, Boelart K, Franklyn J. (2011) Iodine status of UK school-girls: a cross-sectional study. *Lancet* **377**, 2007–2012.
3. Smyth P, O’Herlihy C. (2012) Dietary Iodine Intake in Pregnancy: An Update. *Irish Medical Journal* **105**(1).