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## Insufficient iodine status as a consequence of dietary changes

Solveig Adalsteinsdottir<sup>1</sup>, Ellen Alma Tryggvadottir<sup>1</sup>, Laufey Hrolfsdottir<sup>2</sup>, Thorhallur Ingi Halldorsson<sup>1</sup>, Bryndis Eva Birgisdottir<sup>1</sup>, Ingibjorg Th Hreidarsdottir<sup>3</sup>, Hildur Hardardottir<sup>3</sup>, Petra Arohonka<sup>4</sup>, Iris Erlund<sup>4</sup> and Ingibjorg Gunnarsdottir<sup>1,3</sup>

<sup>1</sup>University of Iceland, Reykjavik, Iceland,

<sup>2</sup>Akureyri Hospital, Akureyri, Iceland,

<sup>3</sup>Landspítali National University Hospital, Reykjavik, Iceland and

<sup>4</sup>National Institute for Health and Welfare, Helsinki, Finland

### Abstract

Historically, Iceland has been an iodine sufficient nation due to notably high fish and dairy consumption. Due to this fact the country does not have a strategy related to iodine status, such as fortification of salt. Iodine status of pregnant women has only been assessed once before in Iceland (in 2009). The median UIC was found to be 180 µg/L, which was in line with the recommended range of 150–249 µg/L defined by the World Health Organization (WHO). Intake of fish and dairy has decreased considerably in the past 10 years. The aim of the present study was to re-evaluate the iodine status of pregnant women in Iceland using data from the PREWICE study (PREgnant Women in ICEland). Subjects were women (n = 983; 73% of the eligible sample) attending their first ultrasound appointment in gestational weeks 11–14 in the period October 2017–March 2018. Spot urine samples were collected for assessment of urinary iodine concentration (UIC) and creatinine. The ratio of iodine to creatinine (I/Cr) was calculated. Diet was assessed using a semi-quantitative food frequency questionnaire (FFQ), which provided information on main dietary sources of iodine in the population studied (dairy and fish). The median UIC (95% CI) and I/Cr of the study population was 89 µg/L (42, 141) and 100 (94, 108) µg/g, respectively. UIC increased with higher frequency of dairy intake, ranging from median UIC of 55 (35, 79) µg/L for women consuming dairy products < 1 time per week to 124 (98, 151) µg/L in the group consuming dairy > 2 times per day (p for trend < 0.001). A small group of women reporting complete avoidance of fish (n = 18) had UIC of 50 (21, 123) µg/L and significantly lower I/Cr compared with those who did not report avoidance of fish (58 (34,134) µg/g vs. 100 (94, 108) µg/g, p = 0.041). Women taking supplements containing iodine (n = 34, 3.5%) had higher UIC compared with those who did not take supplements (141 (77, 263) vs. 87 (82, 94) µg/L, p = 0.037). For the first time, insufficient iodine status is being observed in an Icelandic population. There is an urgent need for a public health action aiming at improving iodine status of women of childbearing age in Iceland.

### Conflict of Interest

There is no conflict of interest