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Dietary recommendations and iodine awareness among mothers in the UK

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Iodine deficiency is recognised as "the most common cause of preventable mental impairment worldwide"[1]. Adequate levels of iodine during pregnancy are essential for the neurodevelopment of the fetus. Severe maternal iodine deficiency, particularly in the first trimester may result in endemic cretinism in the offspring[2] and studies in areas of mild iodine deficiency have demonstrated a range of developmental impairments including lower developmental and intelligence quotients[3]. Following new evidence that most UK schoolgirls are iodine deficient[4], this study aimed to assess the awareness and understanding of dietary recommendations for pregnancy with emphasis on iodine; we also estimated dietary iodine intake in pregnancy using a food frequency questionnaire.

In a cross-sectional study, participants ($n = 831$, aged 32 ± 5 years, educated up to school/college level (33%), graduate level (46%) and postgraduate level (21%) pregnant at the time (34%) or during the preceding 36 months (66%), completed a questionnaire either online or face-to-face. The questionnaire included sections on i) demographic data and lifestyle information, ii) awareness and understanding of current dietary recommendations for pregnancy, iii) dietary habits, iodine rich foods and dietary changes made during pregnancy, iv) iodine in pregnancy, awareness and knowledge of iodine-rich foods. The data was collected from August 2011 to February 2012 UK-wide (online questionnaire, $n = 701$) and around Glasgow (face-to-face, $n = 130$).

Most respondents (95%) were aware of dietary and lifestyle recommendations for pregnancy. A majority found guidelines easy to understand (89%) and follow (78%) and reported to have followed the dietary recommendations "closely" (7 points likert scale, mode 6, inter-quartile range 2). However, 40% were unaware of the advice to limit vitamin A intake in pregnancy, while 25% did not know about the advice to limit oily fish intake to two portions per week.

	Had received information (any)	*Had received sufficient information to modify diet to achieve adequate level*
Folic acid	100%	90%
Iron	96%	73%
Iodine	34%	11%
Vitamin A	76%	47%
Vitamin D	80%	45%
Calcium	88%	60%

Compared to other nutrients (Table above), the majority of respondents had not heard about the requirement for iodine in pregnancy (66%) and had not received sufficient information on how to achieve a sufficient intake (89%, confidence level "not confident at all", mode 1 on a 7 points likert scale, IQR 2). Only 16% were aware of the role of iodine in fetal brain development. Median dietary iodine intake in pregnancy was estimated to 174 µg/day (IQR 104) with 79% below the recommended 250 µg/day. Only few could identify milk (10%) as a major source of iodine with a large proportion mentioning dark green vegetables (54%) and table salt (22%) as a rich source of iodine.

As there is no iodine prophylaxis in the UK, it is essential that women of childbearing age are provided with effective recommendations to meet the recommended iodine intake in pregnancy.

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