

A cross sectional survey of dietary iodine intake in pregnant women living in Northern Ireland

P.A. McMullan¹, L.L. Hamill², K. Doolan², J.V. Woodside², K.R. Mullan¹



¹ Regional Centre for Diabetes and Endocrinology, Royal Victoria Hospital, Belfast
² Centre for Public Health, School of Medicine and Biomedical Sciences, Queen's University Belfast



Introduction

Adequate iodine intake during pregnancy is required for the production of thyroid hormones and is essential for brain development in the foetus. Recent evidence has suggested a re-emergence of mild iodine deficiency in the UK¹ and during pregnancy this has been associated with lower IQ and reading ability in offspring in a dose dependent manner². Currently there are few studies that have specifically looked at dietary iodine intake during this crucial time.

The World Health Organisation currently recommend a daily iodine intake of 250mcg during pregnancy. In the UK there is no universal salt iodination and the main iodine food sources include dairy, fish and eggs^{1,2}.

Objectives

To determine iodine intake amongst pregnant women living in Northern Ireland.

Methods

A cross-sectional survey was carried out to assess iodine intake amongst pregnant women (n=241) living in Northern Ireland (NI). Iodine intake was estimated from a iodine specific food frequency questionnaire adapted by Bath SC et al². Women were asked to estimate intake over two months. The FFQ was repeated in second trimester (n=136) and third trimester (n=144). The following food groups were assessed: white fish, oily fish, shell fish, poultry, meat, cream, yoghurt, butter, milk, cheese, dairy desserts, eggs, use of iodised salt and vitamins/supplements.

Twelve women completed a four day food diary during the first trimester.

Participant Demographics

Characteristic	Values
Age (years)	mean 30 (SD 5.7)
Anthropometry	
- Weight kg	mean 70.1 (SD 14.0)
- BMI kg/m ²	mean 27.3 (SD 4.9)
Ethnicity	
- White Caucasian	n= 238 [98.8%]
- Other	n= 3 [1.2%]
Parity	
- Primigravida	n = 114 [47.3%]
- Para 1	n= 71 [29.5%]
- Para ≥2	n= 56 [23.2%]
Previous miscarriage	
- Yes	n= 74 [30.7%]
- No	n= 167 [69.3%]
Planned pregnancy	
- Yes	n= 189 [78.4%]
- No	n= 52 [21.6%]

Results

Fifty seven per cent of women in the first trimester consumed ≤ ½ pint (280mls) milk per day although milk consumption increased by the third trimester (p<0.05).

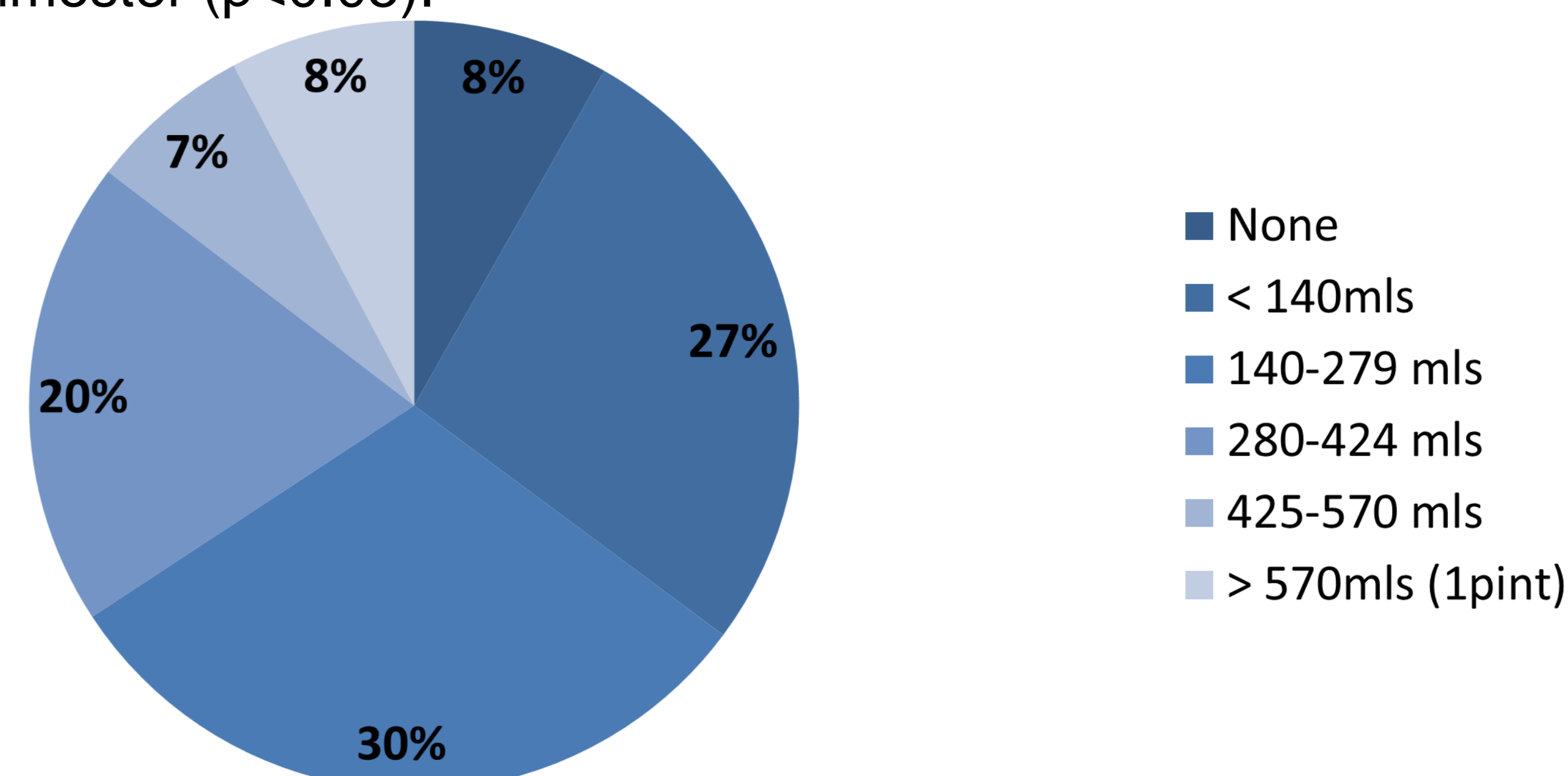


Figure 1 – Estimated milk consumption mls/day

Total fish intake was low (figure 2). Only 13/241(5.4%) women consumed fish more than once per week.

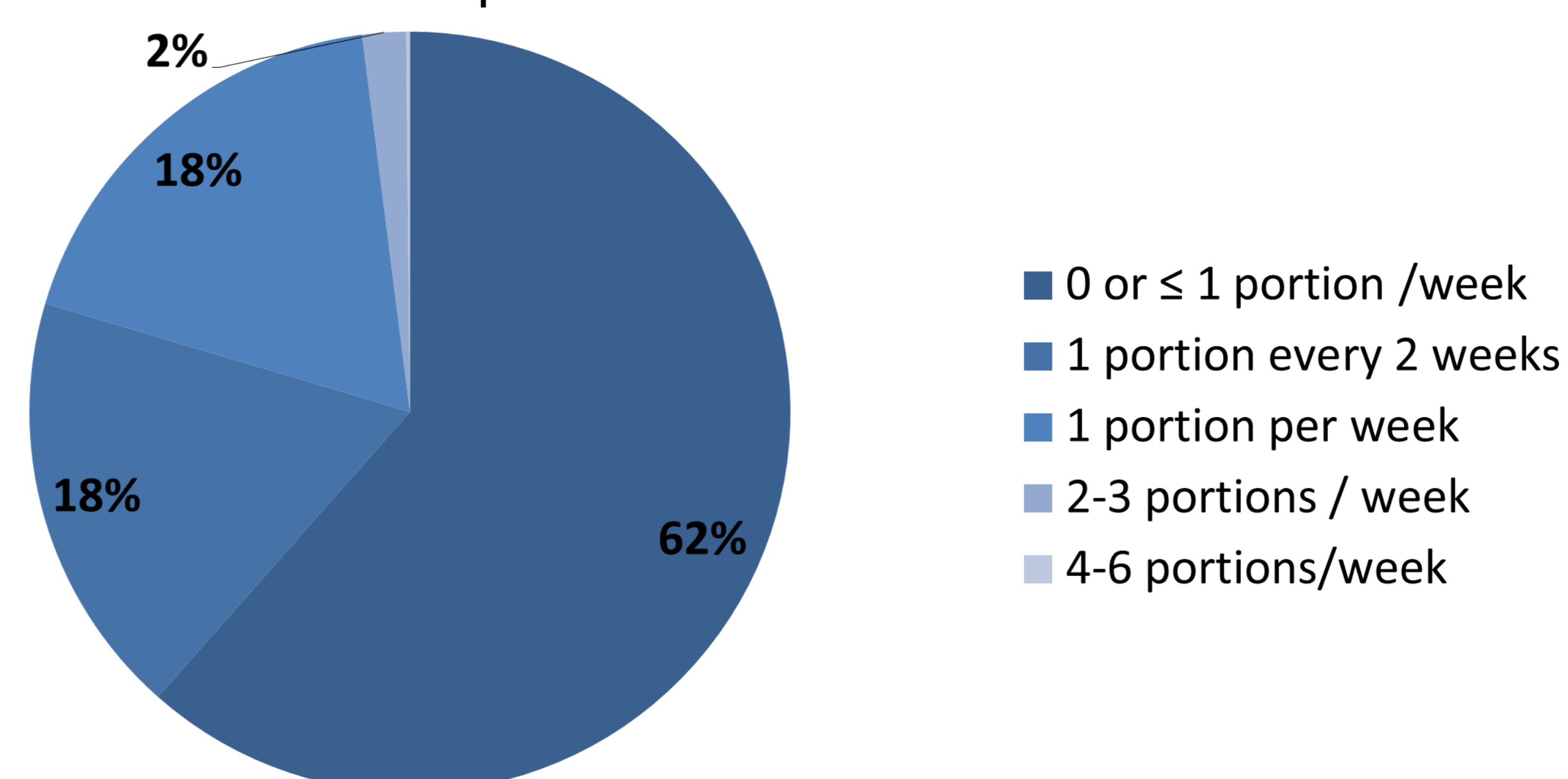


Figure 2 – Fish consumption (white fish, oily fish, shellfish)

In the first trimester 146/215 (68%) women were taking an iodine containing supplement.

Mean daily iodine intake from the 4 day food diaries was 108µg (SD 42 µg).

Conclusion

The results suggest that pregnant women living in Northern Ireland have low intake of foods known to be rich sources of iodine. Diet alone does not appear to be adequate to reach the recommended daily intake. Only 68% of women took an iodine containing supplement during the early stages of pregnancy. The UK has no food iodination programme and so public health messaging along with early ante-natal education is key to improving dietary iodine intake.

References

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- Bath SC, Steer CD, Golding J et al. 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: 331-37