

Estimation of iodine intake in pregnant women living in Northern Ireland using an iodine specific food frequency questionnaire

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Introduction

Adequate iodine intake during pregnancy is essential for the production of thyroid hormones and brain development in the foetus. Recent evidence has suggested the re-emergence of mild iodine deficiency in the U.K¹ but there are few studies that have looked at iodine intake in pregnant women. Mild deficiency during pregnancy has been associated with lower IQ and reading ability in offspring in a dose dependent manner².

The World Health Organisation currently recommend an iodine intake of 250mcg/day during pregnancy. The following table illustrates good sources of dietary iodine³.

Food	Portion	Average iodine/portion (mcg) (actual iodine content will vary)
Cow's milk	200ml	50-80**
Organic cow's milk	200ml	30-65**
Yoghurt	150g	50-100**
Eggs	1 egg (50g)	20
Cheese	40g	15
White fish	100g	115
Oily fish	100g	50
Shellfish	100g	90
Meat	100g	10
Poultry	100g	10

Table 1 – Summary of dietary sources of iodine (BDA iodine fact sheet)

Objectives

To determine iodine intake amongst pregnant women living in Northern Ireland using a food frequency questionnaire.

Methods

A cross-sectional survey was carried out to assess iodine intake amongst pregnant women (n=145) 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=67) and third trimester (n=36).

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.

Participant Demographics

Characteristic	Values: mean (SD)
Age (years)	30 (5.7)
Anthropometry	
- Weight kg	69.5 (13.8)
- BMI kg/m ²	26.1 (4.9)
Ethnicity	
- White Caucasian	n= 143 (98.6%)
- Other	n= 2 (1.4%)
Pregnancy	
- First pregnancy	n = 69 (47.6%)

Table 2 – Summary participant characteristics at booking visit

Results

Seventy per cent of women consumed <1/2 pint (280mls) milk per day in the first trimester (figure 1) although milk consumption increased with each trimester (p=0.005). Egg consumption did not change significantly through pregnancy with 18% of women consuming no eggs whilst 23% had on average 1 egg per week. White fish intake was low with 77/145 (53%) eating fish never or ≤1 portion per month. Only 2/145 (1.4%) consumed more than one portion of fish per week.

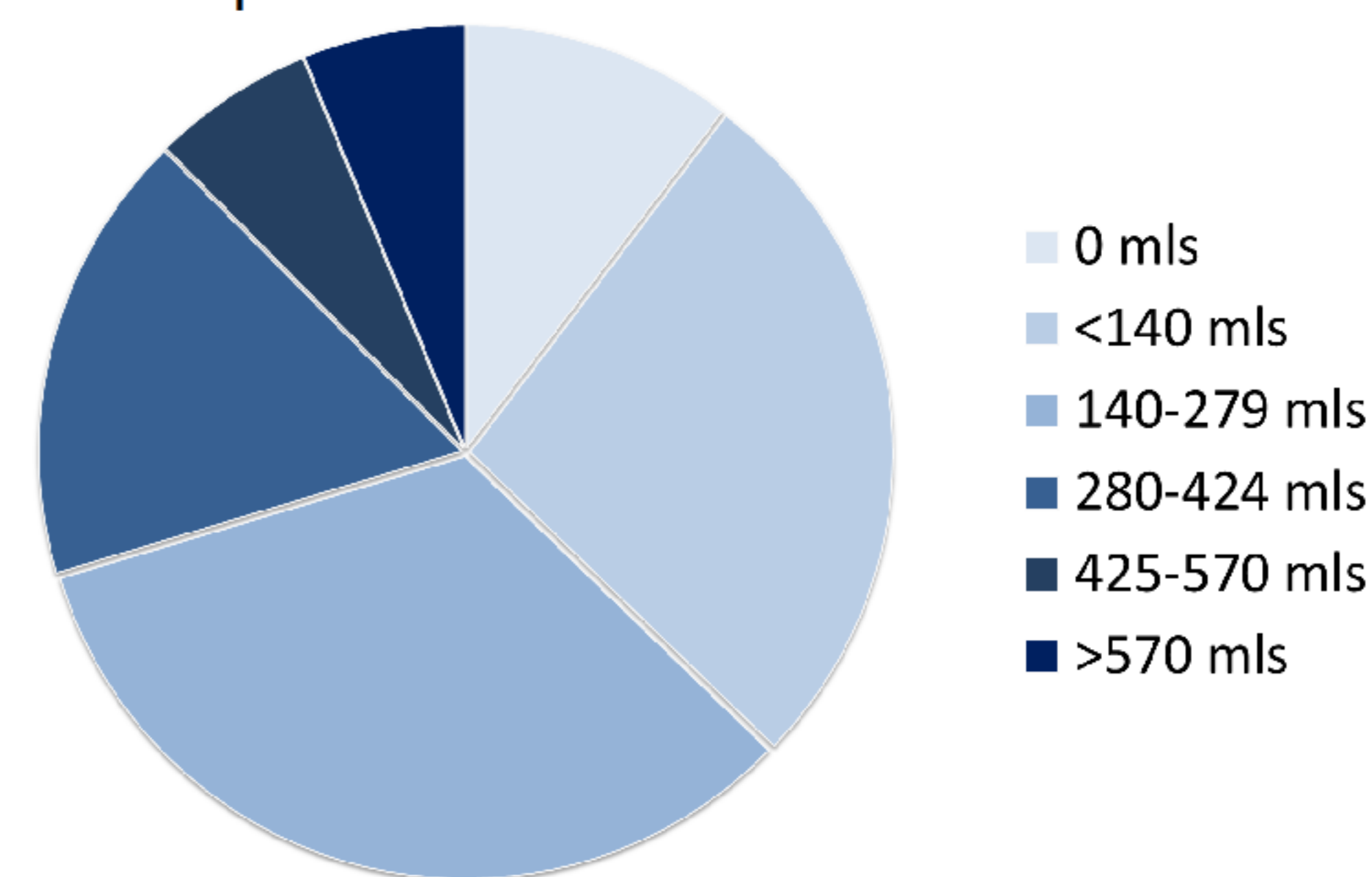


Figure 1 – Estimated milk consumption mls/day

In the first trimester 76/143 (53%) women were taking an iodine containing supplement and this decreased through pregnancy (p =0.017).

Conclusion

The results suggest that pregnant women living in NI have low intake of foods known to be rich sources of iodine. Only 53% of women took an iodine containing supplement during the early stages of pregnancy. The UK has no salt or food iodination programme and so public health messaging along with early ante-natal education is key to improving dietary intake at this important stage in foetal development.

References

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