Voluntary supplementation does not fully correct iodine deficiency among Latvian pregnant women: a national cross-sectional survey

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Introduction

Low iodine intake during pregnancy may cause thyroid dysfunction, which might result in an inadequate foetal brain development. Although Latvia has been considered iodine replete, newborn TSH screening data suggest some iodine deficiency. In the absence of universal salt iodization programme we conducted a nation-wide study of pregnant women from all regions of Latvia.

Methods

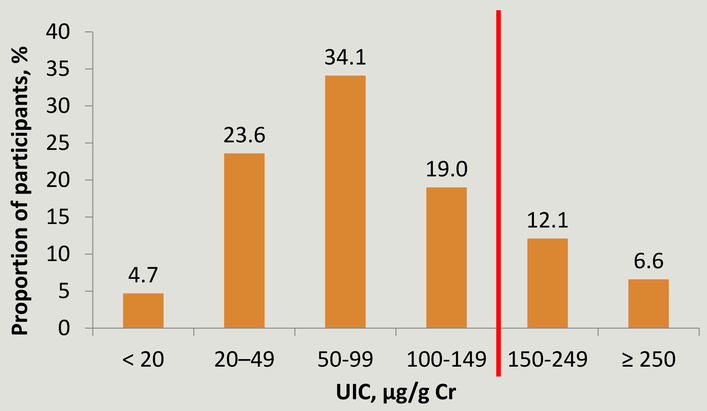
The study enrolled 829 pregnant women. They were asked to fill a questionnaire on dietary habits concerning iodine intake (n=745). Thyroid function (TSH, FT4) and antibodies (antiTPO-Ab) were measured (n=630). Urinary iodine was measured with ammonium persulfate method (n=743).

WHO criteria for assessing iodine nutrition based on median UIC

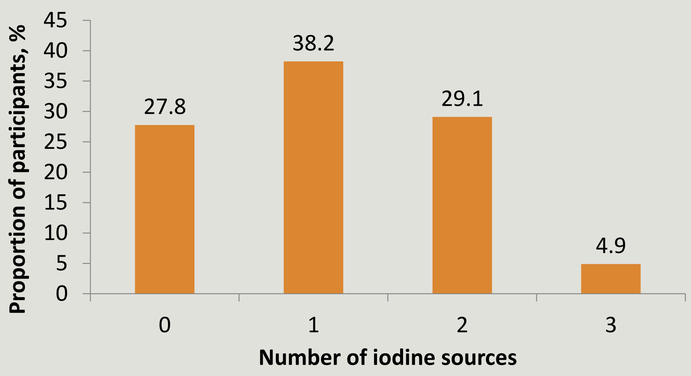
Iodine intake	Median UIC(µg/l)
Insufficient	<150
Adequate	150-249
Above requirements	250-499
Excessive	>500

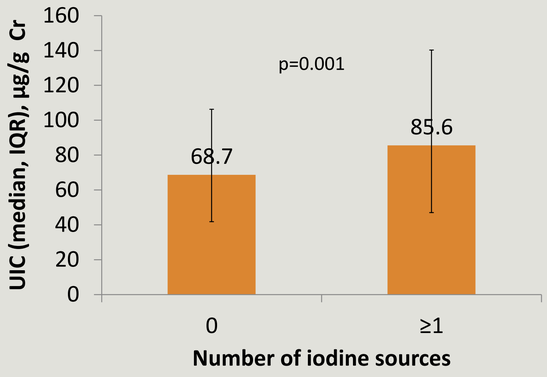
Results

The median urinary iodine concentration (UIC):
80.8 (IQR 46.1-130.6) **µg/g Cr**
69.4 (IQR=53.9-92.5) **µg/l**

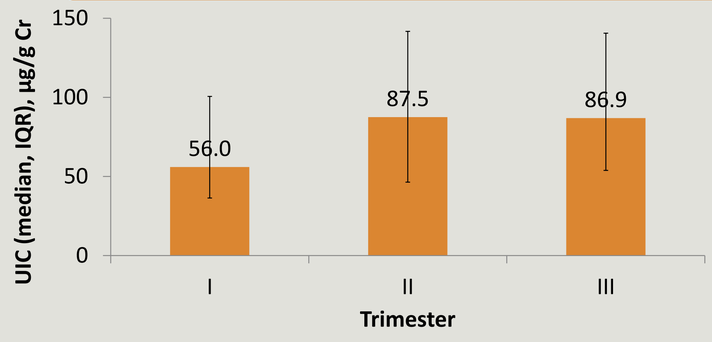


Iodine sources
- Iodine containing supplements
- Iodized salt
- Sea fish





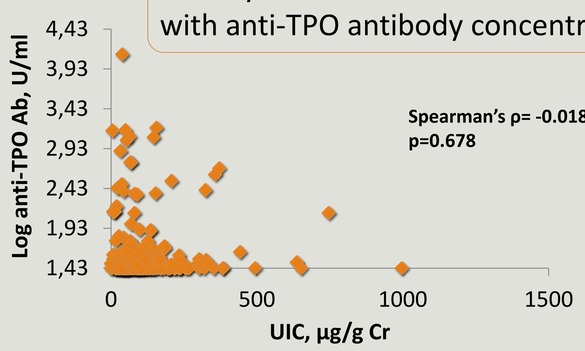
UIC was the lowest during the first trimester (p<0.001)

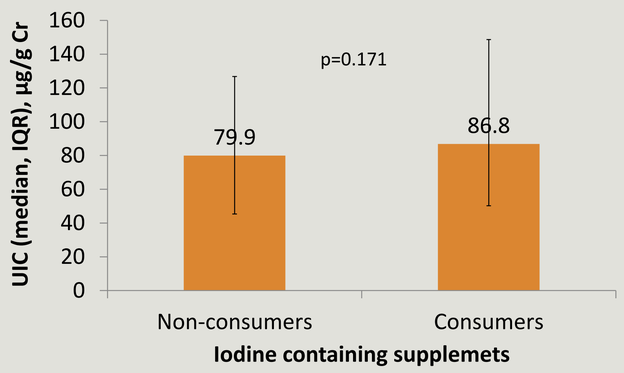


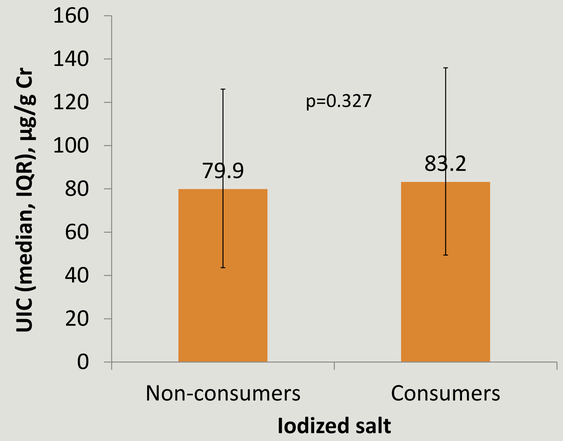
Regular dietary supplement consumption during the current pregnancy was reported by 61.8% of participants
- Of those 30.4% had iodine containig supplements
- 11.2% of participants had supplements with iodine content ≥ 150 µg

The self-reported prevalence of iodized salt consumption was 45% .

Urinary iodine concentration did not correlate with anti-TPO antibody concentration







Conclusion

The median UIC indicates iodine deficiency in pregnant women in Latvia. Correction of iodine deficiency with 150 µg iodine daily should be considered for recommendation.

Acknowledgments

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