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).

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

WHO criteria for assessing iodine nutrition based on median UIC

<table>
<thead>
<tr>
<th>Iodine intake</th>
<th>Median UIC (µg/l)</th>
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</thead>
<tbody>
<tr>
<td>Insufficient</td>
<td>&lt;150</td>
</tr>
<tr>
<td>Adequate</td>
<td>150-249</td>
</tr>
<tr>
<td>Above requirements</td>
<td>250-499</td>
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<tr>
<td>Excessive</td>
<td>&gt;500</td>
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</tbody>
</table>

Results
Iodine sources

The median urinary iodine concentration (UIC): 80.8 (IQR 46.1-130.6) µg/g Cr
69.4 (IQR=33.9-92.5) µg/l

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 containing supplements
- 11.2% of participants had supplements with iodine content ≥ 150 µg

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

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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