U.S. non-prescription prenatal vitamins may contain more iodine than stated on the label

Dietary supplementation is commonly recommended during pregnancy and lactation, although few reports document the extent of this practice in North America (1). These reports suggest that well over half of pregnant and breastfeeding women take a dietary supplement, and that usage is likely greater during pregnancy than lactation. Collecting intake data in this population is critical to understand the extent to which the supplements contribute to the overall nutrient intake, and help implement future recommendations.

The Dietary Supplement Ingredient Database (DSID) evaluates levels of ingredients in dietary supplement products across the United States. It was developed by the Nutrient Data Laboratory (NDL), Beltsville Human Nutrition Research Center, together with the Office of Dietary Supplements (ODS) of the National Institutes of Health and other federal partners.

**Why is this study important to public health?**

There are currently no comprehensive studies evaluating the differences in nutrient composition of prescription and non-prescription multivitamin/mineral supplements (MVMs), and the content of these two categories of prenatal MVMs has not been studied systematically. Analytical estimates of nutrient content, including iodine, could be a valuable tool to support estimates of total iodine intake among women who use these supplements during pregnancy and breastfeeding.

**Study overview**

A study of non-prescription prenatal MVMs was conducted to estimate the relationship between label and analytical values for 21 vitamins and minerals, including iodine, in a nationally representative sample. Non-prescription prenatal MVMs were defined as products containing at least three vitamins, with or without minerals or other bioactive components, sold for prenatal use and available for purchase without a health-care provider’s prescription.

Products identified as representative of the US market were purchased from retail outlets and through direct-to-consumer sales channels. Samples of multiple lots of these products were sent to qualified laboratories for analysis of ingredients using validated methods and appropriate quality assurance measures.

For each sample analyzed, laboratory results were compared to label levels to calculate a percent difference from the label. As shown in Table 1, for iodine, the predicted percent difference from label levels was substantially higher than the label value, and it was within a +20 to +26% range.

**TABLE 1 Study data on iodine content in non-prescription prenatal supplements**

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Iodine</th>
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<tbody>
<tr>
<td>Analytical Method(s)</td>
<td>Thiosulfate titration and later ICP-mass spectrometry (MS)</td>
</tr>
<tr>
<td>Most common label level per serving</td>
<td>150 µg</td>
</tr>
<tr>
<td>Mean predicted difference from label</td>
<td>+25.9%</td>
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</tbody>
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Practical implications of these results

These results can be used to replace information from labels to more accurately assess ingredient intakes from dietary supplements.

**Future research**

Additional DSID studies are underway to evaluate ingredient quantities in prescription prenatal MVMs. Future data releases will be used to monitor ingredient levels in adult MVMs over time.

**References**