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IODINE DEFICIENCY

Iodine content is low or absent in some US multivitamin and prenatal vitamin brands

BACKGROUND

Iodine is essential for the production of thyroid hormone and for normal development of the baby during pregnancy. During pregnancy and breastfeeding there is an increased requirement for iodine both because of a need for higher thyroid hormone production and for secretion of iodine into breast milk. Many studies have shown that iodine deficiency has been associated with adverse effects in babies and infants that range from severe mental retardation to mild brain deficits. Therefore, organizations such as the American Thyroid Association and the American Academy of Pediatrics have recommended that women who are planning a pregnancy, are pregnant or are breastfeeding should ingest a daily supplement that contains 150 mcgs of iodine.

In the US, it has been challenging to identify the sources of dietary iodine, because most food packaging does not detail their contents for this element. Dairy products and seafood are two important sources, but the consumption of these two types of foods is highly variable across the US population. Although in many regions of the world, universal salt iodization has been successful in preventing iodine deficiency, iodization of salt has never been mandated in the US. Currently, only 53% of salt sold for use in homes contains iodine and salt used in processed foods typically is not iodized.

Due to the variable intake of iodine content in food sources and different types of diets followed by the US population, there is concern that some groups of people are at risk for iodine deficiency. Specifically, mild iodine deficiency has been recently documented to be present among pregnant US women. The importance of multivitamin supplements as a source of iodine for pregnant and non-pregnant US adults is not well understood. A study reviewing the use of multivitamin supplements in the US and Canada reported that supplement use ranged from 7% to 85%, showing how difficult it is to accurately determine the extent of multivitamin use. In addition, it has been reported that only 60% of the different types of prenatal multivitamin supplements marketed in the US list iodine among the ingredients. It also has been shown that iodine content is the most variable and least accurately labeled nutrient contained in US adult multivitamins.

This study aimed to assess whether multivitamins are a significant source of iodine in nonpregnant and pregnant adults by looking at the iodine content reported in the most frequently purchased US adult and prenatal multivitamin preparations, knowing how many purchases for these supplements were made over the course of one year.

THE FULL ARTICLE TITLE

Patel A et al 2018 Iodine content of the best-selling United States adult and prenatal multivitamin preparations. Thyroid. Epub 2018 Oct 30. PMID: 30266075.

SUMMARY OF THE STUDY

Data for this study was obtained from Information Resources, Inc. (Chicago, IL), a market research firm. It provided information about the 99 US adult and 60 prenatal multivitamins with the largest market share from July 2016 to July 2017. Supplements sold at food, drug, value chains, mass merchandise and military stores were included. However, not included were sales made over the Internet, direct selling and specialty stores. The iodine content and its source was determined using the product labels. Ten products from the adult multivitamin group and one from the prenatal group were excluded because their label was either unavailable or the iodine content could not be determined.

Nearly 74% of the adult multivitamin brands contained iodine, and approximately 75% of these contained 150 mcg per daily dose. The source of the iodine was potassium iodide in all these products. Although some products contained as little as 38 mcgs, none exceeded 150 mcgs per daily dose. Of the prenatal multivitamins, almost 58% of products contained iodine, and 91% contained 150 mcgs per daily dose. The iodine source

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was potassium iodide in about 75% of the brands, and the sources for the rest was kelp and one brand used inactivated yeast. These last two sources have previously been shown to be variable in their iodine content. Overall, the price of prenatal vitamins is higher than the general adult multivitamin.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

Although the majority of the best-selling US brands of adult multivitamins contain iodine, a relatively high proportion (25%) do not. Among the prenatal multivitamins, 40% do not contain iodine. Even though most products contain the recommended amount, there is a wide range in iodine content going from as little as 25 mcgs to 93% higher than the recommended daily dose.

The limitations of this study include the fact that it relied on the manufacturers' listed iodine content, which may not match the actual content. Also, although using consumer data it was possible to determine how many doses were purchased, it was unclear how many doses were actually consumed, and data from products purchased for example, on the internet was not included.

In summary, multivitamin products appear to be a significant source of iodine nutrition for many US adults. However, in spite of recommendations regarding iodine content in prenatal vitamins, about 40% of the evaluated products do not contain iodine. Therefore, it is extremely important that women, especially when pregnant, breast-feeding or planning a pregnancy, read the labels of their multivitamin supplements to ensure that they are receiving an adequate amount of iodine.

ATA THYROID BROCHURE LINKS

Iodine Deficiency: https://www.thyroid.org/iodine-deficiency/

ABBREVIATIONS & DEFINITIONS

Iodine: an element found naturally in various foods that is important for making thyroid hormones and for normal thyroid function. Common foods high in iodine include iodized salt, dairy products, seafood and some breads.