Iodine- Topic of the Month

NOVEMBER 2, 2022

Role of Iodine

Iodine is an essential trace mineral that is critical in the synthesis of thyroid hormones, T3 (triiodothyronine) and T4 (thyroxine). Inadequate iodine intake impacts production of these hormones, which are essential for protein synthesis, enzymatic activity, and controlling the metabolism throughout the body. Additionally, the hormones work to support the fetal and infant development of the skeletal and central nervous system.[1]

The absence of adequate iodine in the body may cause a disruption in hormone regulations and lead to incidence of goiters. Iodine deficiency during pregnancy can increase the risk of maternal, fetal, or neonatal loss, as well as certain birth defects in the developing fetus. For infants and children, severe iodine deficiency can cause cretinism, permanent neurodevelopmental and cognitive deficits, hearing problems, motor skill impairment, and ADHD.

Recommended Intake

The Dietary Guidelines for Americans encourage the intake of nutrient needs to primarily come through a variety of foods. When those needs cannot be met through food alone, a dietary supplement may be indicated.

Review the chart below provided by the National Institute of Health Office of Dietary Supplements for recommended iodine intake.

Table 1: Recommended Dietary Allowances (RDAs) for Iodine [2]

Age	Male	Female	Pregnancy	Lactation
Birth to 6 months	110 mcg*	110 mcg*		
7–12 months	130 mcg*	130 mcg*		
1–3 years	90 mcg	90 mcg		
4–8 years	90 mcg	90 mcg		
9–13 years	120 mcg	120 mcg		
14–18 years	150 mcg	150 mcg	220 mcg	290 mcg
19+ years	150 mcg	150 mcg	220 mcg	290 mcg

*Adequate Intakes

NOTE: Iodine does have a tolerable upper intake level (UL). High intake can cause some of the same conditions as a deficiency. Iodine intake from food and supplements are unlikely to exceed the UL. Participants should be discouraged from exceeding the recommended intake.

Sources of Iodine

The earth's soil and seawater contain varying amounts of iodine, and iodine content in food varies geographically. Dietary iodine in the U.S. is mainly found in the form of iodized salt. Some common sources of iodine include iodized table salt, saltwater fish and seafood, milk and milk products, and eggs. Iodine is also present in breastmilk and infant formulas.

Note that the FDA does not require iodine content to be listed on food labels.

For participants who are pregnant, encourage daily intake of a prenatal vitamin (pnv) with at least 150 mcg of iodine. For participants who are breastfeeding or planning a pregnancy, encourage daily intake of a multi-vitamin with at least 150 mcg of iodine. **Risk code 427D Inadequate vitamin/mineral supplementation recognized as essential by national public health policy** is assigned for pregnant and breastfeeding women if they consume <150 micrograms supplemental iodine daily.

NOTE: Breastmilk, formula, or food should be the only source of iodine for infants.

Nutrition Assessment

During the nutrition assessment we inquire about a participant's dietary habits and any supplemental vitamins that they may be taking. To assess for iodine, pay particular attention to the intake of food sources that provide iodine naturally. Since dietary sources alone are not typically sufficient, it is important to evaluate the participant's supplement intake for iodine as well. Ask questions such as, "What vitamin supplements are you currently taking?" or "Do you take a daily multivitamin supplement?"

Note that those who do not consume dairy or dairy products may have a higher risk of low iodine intake.

During pregnancy and lactation, the iodine requirement increases (*see Table 1*). Evaluating supplemental iodine is a **required** component of Nutrition Assessment for pregnant and breastfeeding participants. The iodine content of vitamins is not mandated in the US, so not all pnv or multivitamins contain iodine. For a pregnant, breastfeeding, or postpartum participant, you may ask, "Do you know if your vitamins contain iodine?" All pregnant and lactating participants should be advised to review the iodine content of the supplements to ensure it contains 150 mcg at a minimum.

For participants whose iodine intake is inadequate, we assign **Risk code 427D.** By identifying participants' risks and concerns, you will be able to provide targeted nutrition education and resources specific to their interests and needs. Education should include an example of where the participant may find the iodine content of the supplement. By reading the "supplement facts label" on the container, they will be able to identify if the supplement contains iodine and if so, if it is adequate (150 mcg).

If the participant has concerns about iodine intake, you may refer them to their healthcare provider.

Read through the Justification for 427D for more information on Risk code 427D.

Resources for Families

The National Dairy Council created Iodine fact sheets that may be shared with WIC participants. These fact sheets have been translated into Spanish, Hmong, and Somali languages. The following QR codes can be used to share with participants to access the various fact sheets.

English

Hmong

Spanish

Somali

Resources Used

1. Iodine Fact Sheet for Health Professionals- National Institute of Health, Office of Dietary Supplements. Updated April 28, 2022.

Reference – Complete Listing of Hyperlinks

Dietary Guidelines for Americans (https://www.dietaryguidelines.gov/)

Justification for 427D (https://www.health.state.mn.us/people/wic/localagency/riskcodes/427.html#justificationd1)

National Dairy Council (https://www.usdairy.com/about-us/national-dairy-council)

Iodine (https://ods.od.nih.gov/factsheets/Iodine-HealthProfessional/)