Iodine Fact Sheet and References

What is iodine?
• Essential trace mineral
• Critical in the synthesis of thyroid hormones. The thyroid gland converts iodine into T3 (triiodothyronine) and T4 (thyroid) hormones, which control metabolism throughout the body.
• Excreted through urine

Where do we find iodine?
• Table salt (iodized salt) – Beginning in the 1920s, iodine was added to table salt and to other foods to prevent iodine deficiency.
• Seafood and seaweed
• Dairy and grains (amounts vary depending on source)

Who’s impacted?
• 2.2 billion people worldwide are at risk for Iodine Deficiency Disorders (IDDs). Of these, 30-70% have goiter and 1-10% have cretinism.
• People living in the Great Lakes region (including Minnesota) may have inadequate intake due to low levels of iodine in the soil in which crops are grown.
• Iodine deficiency virtually eliminated in the U.S. and many Western nations, due to iodization of salt. However:
  o 1970s-1990s: median U.S. urinary iodine (UI) excretion fell 50%, indicating intake, and possible increased risk for moderate IDD. Experts thought this might be attributable to a decreased intake of salt; removal of iodate conditioners in store-bought breads; and an increased use of non-iodized salt in manufactured or premade convenience foods
  o 2001-2002 NHANES data indicated that levels had stabilized.
Even so, women of reproductive age consistently had the lowest UI levels.
• Women of reproductive age are an important group to monitor:
  o Pregnant women are vulnerable to iodine deficiency due to an increased renal clearance of iodine and transfer of iodine to fetus.
  o Iodine supplementation during pregnancy is often delayed, because women are unaware they are pregnant during early weeks of gestation.
  o Breastfeeding women are also at risk for iodine deficiency due to transfer of iodine into breastmilk.

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What are some risks of iodine deficiency?
Iodine deficiency is one of the most frequent causes of preventable mental retardation in children worldwide.

- **Infants and children:** severe iodine deficiency can cause cretinism and adversely affect cognitive development.
  - **IDDs in infants** includes mental retardation, speech and hearing deficits, motor skill impairments, and ADHD
  - **In children,** the severity of IDD depends on the developmental stage in which it occurred and its severity -- the earlier the deficiency occurs and the greater the severity, the more devastating the neurological damage. The first half of pregnancy is especially critical.
- **Pregnant women:** Moderate IDD during pregnancy may be associated with lower intelligence in children. (See *Iodine Deficiency*, American Thyroid Association brochure)

What are some facts about iodine supplements?
- **Prenatal multivitamins:** 49% of prenatal multivitamins marketed in the U.S. contain no iodine.
- **Potassium iodide** contains 76% iodide - this is the most consistent form of supplemental iodine.
- **Kelp** varies in iodine content. Some studies have found that amounts indicated on labels is not always accurate.

What are some risks of too much iodine supplementation?
- Iodine intakes have a wide safety margin
- **Tolerable ULs:**
  - Adults: UL=1100 µg/day (Recommended Daily Intake = 150 µg/day)
  - Young children: UL=200-300 µg/day (Recommended Daily Intake = 90 µg/day)

What are some WIC foods that contain iodine?
- Canned tuna and pink salmon
- Milk, eggs, cheese (iodine levels vary depending on source)
- Whole wheat bread (iodine levels vary depending on brand)

Suggested Recommendations to Share with Participants
- Use *iodized* salt when using salt.
- Look for a prenatal vitamin with at least 150 mcg of iodine when pregnant and breastfeeding.
- Choose a multi-vitamin with at least 150 mcg of iodine when planning a pregnancy.

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References


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