



helpful for fibrocystic breast disease, although a specific mechanism of action has not been established [69] and data are limited.

In a double-blind study, researchers randomly assigned 56 women with fibrocystic breast disease to receive daily supplements of iodine (70 to 90 mcg I₂/kg body weight) or placebo for 6 months [70]. At treatment completion, 65% of the women receiving iodine reported decreased pain compared with 33% of women in the placebo group. A more recent randomized, double-blind, placebo-controlled clinical trial had similar findings. In this study, researchers randomly assigned 111 women (18–50 years of age) with fibrosis and a history of breast pain to receive tablets containing 0 mcg, 1,500 mcg, 3,000 mcg, or 6,000 mcg of iodine per day [69]. After 5 months of treatment, women receiving doses of 3,000 or 6,000 mcg iodine had a significant decrease in breast pain, tenderness, and nodularity compared with those receiving placebo or 1,500 mcg iodine. The researchers also reported a dose-dependent reduction in self-assessed pain. None of the doses was associated with major adverse events or changes in thyroid function test results.

Although the results of these studies are promising, more research is needed to clarify iodine's role in fibrocystic breast disease. Moreover, the doses used in these studies (approximately 1,500–6,000 mcg per day) are several times higher than the iodine UL of 1,100 mcg for adults. Doses of this magnitude should only be used under the guidance of a physician [2].

Radiation-induced thyroid cancer

Nuclear accidents can release radioactive iodine into the environment, increasing the risk of thyroid cancer in exposed individuals, especially children [71,72]. Thyroidal uptake of radioactive iodine is higher in people with iodine deficiency than in people with iodine sufficiency. For this reason, iodine-deficient individuals have a particularly high risk of developing radiation-induced thyroid cancer when exposed to radioactive iodine.