

Thyroid Cancer, Radioactive Iodine Therapy, and the Low Iodine Diet

Although rare at only 2.6% of all cancers, thyroid cancer incidence is the most rapidly increasing cancer in Canada. Thyroid cancer includes four different types of cancers and predominantly affects young women. It is the most prevalent cancer in Canadian women age 15 - 29 and in adults age 20–39, and is the second most prevalent cancer in adults age 40-49. Thyroid cancer patients have the highest survival rate of all cancers, yet have a high recurrence rate (up to 30%).

In December 2007, I underwent a total thyroidectomy for thyroid cancer. The Canadian Thyroid Cancer Support Group (Thry'vors) Inc. provided critical information and much-needed support to me during this difficult time. The main impetus for writing this article is to raise awareness and invite discussion between Thry'vors and Registered

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Dietitians (RDs) on the merits of the Thry'vors Low Iodine Diet (LID) as preparation for radioactive iodine therapy, also known as I-131 remnant ablation (RAI).

Thyroid cancer is typically treated with either a partial

or complete thyroidectomy (surgical removal of part or all of the thyroid gland respectively) and often followed by RAI. RAI has been used since 1946, and since the mid-1960s studies have been conducted to investigate the efficacy of the LID in preparation for RAI. These studies have generally concluded that using the LID before, during and just after RAI improves the effectiveness of the treatment.

Patients looking on the Internet for advice are faced with many versions of the LID and a variety of conclusions regarding the ideal duration of the diet, which may be different from what their own doctor is telling them. The Thry'vors LID is a key component of care for thyroid cancer patients when being treated with RAI. It was prepared with the help of more than 50 experts from nutrition and medicine, food manufacturing and labelling, and others.

The LID is a safe, short-term diet (roughly one to two weeks prior to, and a couple of days following RAI) used only in preparation for nuclear medicine thyroid treatment or scan. The main foods to be avoided are iodized salt and any foods prepared with iodized salt, fish and seafood, dairy products, egg yolk, cured meats, soybean products, all restaurant food and all foods or products containing red dye #3. Iodine-free calcium supplementation is an option as the LID is deficient in calcium.

LID

The LID works by emptying the body of its natural iodine stores. When RAI is administered, it puts radioactive iodine into the body. Because thyroid cells require iodine to produce hormones, they pick up the radioactive iodine. This has two outcomes: the radioactive iodine makes any residual thyroid cells visible on the scan, and destroys any remaining thyroid tissue, benign or malignant. The RAI therapy or scan can be compromised if even a relatively minute amount of natural iodine is present in the body. Any natural iodine that may be present will compete with radioactive iodine for entry into the thyroid cells, and may block uptake and limit the effectiveness of the RAI.

In spite of its short-term use, maintaining a LID can be difficult. As patients prepare to undergo RAI, they may experience the following challenges: Patients may:

1. be simultaneously discontinuing their thyroid replacement medication, therefore they experience the negative effects of being in an induced hypothyroid state ("going hypo").
2. feel frightened about the upcoming treatment and anxious about the required isolation for several days post-therapy. Patients must take certain precautions to minimize the risk of radiation exposure to others, depending on the amount of RAI administered.
3. lack confidence to follow the diet as it requires label reading and meal preparation 'from scratch' and they may feel they do not have the necessary food skills.
4. still be coping with the shock of their cancer diagnosis and recovery from surgery.

Thry'vors is reaching out to health professionals across the country to help advocate for the use of the evidence-informed and patient-friendly Thry'vors LID to be used in preparation for the administration of RAI to thyroid cancer patients. RDs are well-positioned to describe to physicians the evidence supporting the use of the LID, and the key role of the dietitian in explaining the diet to patients. RDs can help people maintain the diet by counselling on preparing food ahead of time, reading labels, and using appropriate foods from their respective cultural food practices. Iodine-free recipes are available on the Thry'vors website (www.thryvors.org/) and from low-iodine cookbooks.

Thry'vors can provide copies of the 2009 Thry'vors Low Iodine Diet, Menu Planner, and Shopping List. To request copies of the LID material, to obtain a list of references used to write this article and for further information, questions or comment, please contact Thry'vors through the website or by emailing me.

REFERENCES - Available upon request.

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