

RADIOACTIVE IODINE (RAI) THERAPY

Radioactive Iodine (RAI) Therapy

If you have been diagnosed with thyroid cancer, you may receive radioactive iodine (RAI), (radioiodine). This is because you and your doctor have agreed that it is the best treatment for your thyroid condition. Most of the radiation from the radioiodine will be absorbed by what is left of your thyroid gland after your surgery. This is the desired and beneficial medical effect of your cancer treatment.

Background

The thyroid gland produces hormones that regulate your body's ability to turn food into energy (metabolism).

In order to produce these hormones, the thyroid gland uses large amounts of iodine. It absorbs nearly all of the iodine in your blood. Iodine enters the body in foods such as seafood, table salt, bread and other foods.

Radioactive iodine is also collected by the thyroid gland. The form of RAI given for treatment is called I-131. It is taken as a liquid or pill and is absorbed by thyroid tissue and any other thyroid cells, including cancer cells. The I-131 then destroys the targeted cells that absorb iodine, particularly the cells of thyroid origin. Most of the radioactive iodine that is not collected by your thyroid gland will be eliminated during the first two days after treatment.

Side Effects

- Neck tenderness and/or swelling
- Stomach ache / urge to vomit
- Tender and/or swollen salivary glands, located around the mouth and throat
- Dry mouth
- Temporary change of taste
- Reproduction: For men, it is advised to avoid fathering a child for at least four months. For women, it is recommended to avoid becoming pregnant for at least six months to a year after treatment.

Helpful Hints

- Sucking on sour candy, lemon wedges or chewing gum may help with salivary gland problems.
- Tylenol or ibuprofen may be helpful for a tender neck or salivary glands.

Precautions

RAI should not be taken by women who are pregnant. A serum pregnancy test is required for all women capable of being pregnant prior to treatment. RAI can appear in breast milk. Breast feeding must be stopped before the administration I-131 therapy and should not continue after treatment. Breast feeding can resume for later childbirths.

Pre-Treatment

For RAI therapy to be most effective, there must be a high level of thyroid-stimulating hormone (TSH) in your blood. TSH enables the thyroid gland and thyroid cancer cells to absorb the radioactive iodine. After an operation to remove the thyroid gland, the level of TSH can be increased by stopping your thyroid hormone pills for several weeks. This leads to a lowering of your body's metabolism. This is known as hypothyroidism, and it causes your body to release more TSH. Hypothyroidism can cause temporary symptoms of fatigue, depression, weight gain, sleepiness, constipation, muscle aches and a decrease in concentration. There are options to manage these symptoms that can be explored with your doctor. Your doctor will tell you how to decrease your thyroid medication or when to change thyroid medications to get the best outcome from your I-131 treatment.

To also help with the uptake of radioactive iodine, following a low iodine diet is required for two weeks prior to treatment. Low-iodine diet guidelines from the Thyroid Cancer Survivors' Association, Inc. can be found on the following page.

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Low-Iodine Diet Guidelines — Summary

ThyCa: Thyroid Cancer Survivors' Association, Inc.SM
For details, and our **free downloadable Low-Iodine Cookbook**, visit www.thyca.org

Key Points

- This is a Low-Iodine Diet, NOT a No-Iodine Diet or an Iodine-Free Diet.
- The diet is for a short time period, usually for the 2 weeks (14 days) before a radioactive iodine scan or radioactive iodine treatment.
- Avoid foods high in iodine (over 20 mcg per serving). Eat any foods low in iodine (up to 5 mcg per serving). Limit the quantity of foods moderate in iodine (5 to 20 mcg per serving).
- Read the ingredient lists on the labels of packaged foods. Check with your physician about medications you are taking.

Not Allowed—

Avoid These Foods and Ingredients

- Iodized salt, sea salt, and any foods containing iodized salt and sea salt.
- Seafood and sea products (fish, shellfish, seaweed, seaweed tablets, carrageenan, agar-agar, alginate, nori and other sea-based foods or ingredients).
- Dairy products of any kind (milk, cheese, yogurt, butter, ice cream).
- Egg yolks or whole eggs or foods containing whole eggs.
- Bakery products containing iodine/iodate dough conditioners or high-iodine ingredients. Low-iodine homemade and commercial baked goods are fine.
- Red Dye #3.
- Most Chocolate (due to milk content). Cocoa powder and some dark chocolates are allowed.
- Some molasses (if sulfured, such as blackstrap molasses). Unsulfured molasses, which is more common, is okay. Sulfur is a term used on labels and does not relate to iodine.
- Soybeans and soybean products such as tofu, TVP, soy milk, soy sauce. The NIH diet says to avoid some other beans: red kidney beans, lima beans, navy beans, pinto beans, and cowpeas.
- On some diets, rhubarb and potato skins (inside of the potato is fine).
- Iodine-containing vitamins and food supplements.
- If you're taking a medication containing iodine, check with your physician.

Allowed Foods and Ingredients

- Fruits except rhubarb and maraschino cherries (with Red Dye #3).
- Vegetables: preferably raw or frozen without salt, except soybeans and (according to NIH diet) a few other beans.
- Unsalted nuts and unsalted nut butters.
- Whites of eggs.
- Fresh meats up to 6 ounces a day.
- Grain and cereal products up to 4 servings per day, provided they have no high-iodine ingredients.
- Pasta, provided it has no high-iodine ingredients.
- Sugar, jelly, jam, honey, maple syrup.
- Black pepper, fresh or dried herbs and spices.
- Oils. All vegetable oils, including soy oil.
- Sodas (except with Red Dye #3), cola, diet cola, non-instant coffee, non-instant tea, beer, wine, other alcoholic beverages, lemonade, fruit juices.
- **Read the ingredient list on all packaged foods.**

Easy Snacks for Home, Work, or Travel

- Fresh fruit or juice
- Dried fruits such as raisins
- Fresh raw vegetables
- Applesauce
- Popcorn
- Unsalted nuts
- Sodas other than those with Red Dye #3
- Fruit juice
- Unsalted peanut butter or other nut butters (great with apple slices, carrot sticks, crackers, and rice cakes)
- Unsalted Matzo crackers and other unsalted crackers
- Homemade low-iodine bread or muffins

- Easy Quick Meals**
- Oatmeal toppings-cinnamon, honey, applesauce, maple syrup and walnuts, fruit
 - Grilled fresh meat, vegetables, fresh fruit or baked apple
 - Salad topped with grilled chicken or beef, oil and vinegar dressing
 - "Sandwich" with Matzo crackers, plain peanut butter, jelly

Disclaimer: This information is intended for educational purposes only. It is not intended, nor should it be interpreted, as medical advice or directions of any kind. Any person viewing this information is strongly advised to consult their own medical doctor(s) for all matters involving their health and medical care.

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Pre-Treatment Continued

There are also several medications that need to be discontinued for a period of time prior to taking I-131. The following table outlines those medications and the length of time that they need to be stopped before treatment.

Medication	Discontinue before taking I-131
Cytomel (Liothyronine)	5 days
PTU (Propylthiouracil)	7 days
Tapazole	7 days
Multi-vitamins	2 weeks
Topical Iodine	4 weeks
Synthroid	6 weeks
Levoxine	6 weeks
Lithium	6 weeks
IV contrast	8 weeks
Amiodarone	9 months

Post-Treatment, At-Home Instructions

Any RAI not absorbed by thyroid tissue/cells will be eliminated primarily through urinating, but also through other body fluids including feces, saliva and sweat. It is extremely important to follow these guidelines to prevent radiation from your body from entering the environment or harming others around you. There is no evidence that such exposure has ever caused any harm. Nevertheless, efforts should always be made to avoid unnecessary exposure to radiation.

- Maintain a cautious distance of at least 6 feet from others whenever possible, especially pregnant women and children. If necessary, arrange for another person to provide childcare for seven days after treatment.

- Sleep alone for one week.
- Avoid intimate contact: prolonged physical contact, kissing and sexual intercourse during the period of restriction.
- Do not take a long trip (4 hours or more) sitting near others (e.g., car, train, airplane, bus).
- When taking shorter trips during the period of limited travel, sit as far as possible from others.
- Have the sole use of a bathroom if possible. Drink plenty of fluids (about twice as much as you normally do) and go to the bathroom frequently.
- Shower daily. Do not share towels or washcloths for one week.
- Rinse bathroom sink and tub thoroughly after each use.
- Flush the toilet two to three times with the lid down. For men, sit while urinating to avoid splashing the surrounding area.
- Frequently wash hands with soap and plenty of water, including after each toilet use.
- Do not share cups, dishes, eating utensils for one week. And wash all these items separately for one week as well.
- Try to avoid preparing food for others for one week.
- Any disposable goods such as water bottles, paper plates, cups, etc., MUST be stored for one month before putting out to trash. All Kleenex/tissues should be flushed down the toilet.
- Wash your bed linen, underclothing, towels and washcloths separately from other family members' clothing for one week.
- Show these instructions to any physician or other healthcare provider you visit for two weeks.

Hospitalization after Treatment

In some cases, hospitalization may be required after receiving I-131. Depending on the amount of RAI given and your living environment, staying in the hospital for two to three days could be necessary. You are required to stay in your room until you are released by the nuclear medicine physician. It is

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Hospitalization after Treatment Continued

advised that there be no visitors for the first 24 hours following your I-131 therapy.

To limit the amount of radiation exposure to your personal belongings, please limit what you bring with you. The only clothing necessary is what you wear to the hospital. Hospital gowns will be provided for you. Disposable items such as magazines, newspapers, crosswords, etc., that can be left behind are better than hardcover books, laptop computers or craft items. All items that are brought in will be monitored when you are discharged.

Once at home, you should continue to follow the "At Home Instructions" for the recommended period of time.

Follow Up

You will be scheduled for a post treatment scan one week following your RAI treatment.

Go back to your regular diet and thyroid medications 72 hours after the dose of I-131. Your endocrinologist will continue to monitor your thyroid hormone levels. Other follow-up tests may be required to monitor for the potential return of thyroid cancer. These include tests for serum thyroglobulin and/or antithyroglobulin antibody levels, a thyroid uptake scan or ultrasound.

For Further Information

For further information on this treatment, please contact the St. Joseph Hospital Nuclear Medicine Department at (714) 771-8000, extension 13070. During after hours, 5:30 p.m. or weekends, please call (714) 771-8000 extension 12774.

For information on our Head and Neck Program, please call Heather Stern, RN, BSN, CNOR, our Nurse Navigator, at (714) 734-6238.


www.sjo.org/headandneck



THE CANCER REVOLUTION IS



Head and Neck Program

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