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Thyroid Cancer Testing and Treatment Using Radioactive Iodine

Withdrawal and Thyrogen-stimulated Thyroid Cancer Study Instructions

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WITHDRAWAL AND THYROGEN-STIMULATED THYROID CANCER STUDY INSTRUCTIONS

As per our instructions, you are schedule to have a body scan performed on/around _____ . This is an overview of the instructions. ONLY follow instructions that are marked with an "X", as not all will apply to you.

_____ WITHDRAWAL THYROID CANCER STUDY (NO THYROID MEDICATION POST SURGERY)

- Discontinue your Synthroid/Levoxyl/Levothyroxine on _____
- Start Low Iodine diet on _____
- See your endocrinologist after surgery on Day1: _____ with pre-clinic blood work completed
- Start Synthroid / Levoxyl at a dose of _____ beginning 4 days after the radioactive iodine treatment
- See your endocrinologist 5-6 weeks after the radioactive iodine treatment dose with preclinic blood work completed

Your schedule will be planned as follows:

Day1: Discuss plan of care with your endocrinologist and referral to nuclear medicine if TSH is >25 and for chest x ray

Day2: Treatment dose: Meet with nuclear medicine for radioactive iodine treatment and begin thyroid medication 4 days after this treatment dose.

Day3: Post Treatment scan. Return to nuclear medicine 7-10 days after treatment dose for this whole body scan. BEGIN

Day4: Return to endocrine clinic with pre-clinic blood work completed

_____ WITHDRAWAL THYROID CANCER STUDY (THYROID MEDICATION BEGUN POST SURGERY)

- Start Cytomel at a dose of _____ beginning after thyroid surgery
- Discontinue Cytomel on _____
- Start Low Iodine diet on _____

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- your endocrinologist after surgery on Day1: _____ with pre-clinic blood work completed
- Start Synthroid / Levoxyl at a dose of _____ beginning 4 days after the radioactive iodine treatment
- See your endocrinologist 5-6 weeks after the radioactive iodine treatment dose with preclinic blood work completed

Your schedule will be planned as follows:

Day1: Discuss plan of care with your endocrinologist and referral to nuclear medicine if TSH is >25 and for chest x ray

Day2: Treatment dose: Meet with nuclear medicine for radioactive iodine treatment and begin thyroid medication 4 days after this treatment dose.

Day3: Post Treatment scan. Return to nuclear medicine 7-10 days after treatment dose for this whole body scan. BEGIN

Day4: Return to endocrine clinic with pre-clinic blood work completed

_____ THYROGEN-STIMULATED THYROID CANCER STUDY

- Do **NOT** discontinue your thyroid medication
- Start Low Iodine diet on _____ (2 wks before scan)

Your schedule will be planned as follows:

Day 1: Blood work and Thyrogen injection #1

Day 2: Thyrogen injection #2

Day 3: Small dose radioactive iodine

Day 4: Blood work and whole body scan, plus visit with the doctor



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About Your Treatment

Welcome

Throughout your treatment, you will follow a specific plan of care, which will depend on your individual diagnosis. The following pages provide a general overview of your care path. You and your care partner (family member or friend who helps you during your treatment) will learn what you must do and what will happen as we work together to evaluate and treat your thyroid cancer. This material gives an overview of standard procedures and is not meant to be all inclusive or apply to all patients, since your individual plan of care may be different.

Health Care Team

Many different health care specialists will take care of you during your treatment. Your team may include several doctors, mid-level providers, nurses, your care partner and others. Sometimes you may feel overwhelmed. Please talk with your team members about your treatment. They are here to help with any needs or concerns that you and your care partner may have.

Radioactive Iodine (RAI or ¹³¹I) Treatment

The thyroid gland normally collects and traps iodine from foods that we eat and then uses the iodine to make thyroid hormones (T4 and T3). Thyroid cancer cells also retain some ability to trap iodine, which is why RAI can be used to treat most cases of thyroid cancer. After surgery for thyroid cancer, normal and abnormal thyroid tissue left in the body can concentrate RAI that then kills thyroid cells, which is the desired medical effect.

Your doctor recommends RAI as part of your treatment for thyroid cancer. Patients receive this treatment for several purposes:

- To eliminate the small amount of normal thyroid tissue that remains after surgery (called thyroid remnant ablation). The goal of remnant ablation is to destroy any remaining normal thyroid tissue to make future monitoring for thyroid cancer easier.
- To eliminate any residual microscopic thyroid cancer that may remain within the thyroid remnant
- To treat thyroid cancer metastases (in lymph nodes, lungs, bone, and other areas) that concentrate RAI.

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Diagnostic Tests

Before treatment with RAI, your doctor will order blood tests, including a pregnancy test in females. In addition to a thyroid cancer study, other diagnostic tests may be obtained, including but not limited to a chest x-ray and neck ultrasound.

Be sure to tell your nurse or doctor if you have had a CT scan or intravenous pyelogram (IVP) within 8 weeks of your planned RAI scan and treatment. These tests may interfere with thyroid treatment because of the high iodine levels present in the contrast agents used for these studies.

A radioactive scan (called a post-treatment scan) will also be performed one to seven days after the treatment. The purpose of this scan is to make sure that no new lesions are identified

Preparation for Treatment

Medications

In order to achieve an optimal thyroid cancer study and treatment with RAI, the thyroid stimulating hormone (TSH) level must be elevated. There are two ways to achieve an elevated TSH: stopping thyroid hormone (also called withdrawal) or getting injections of recombinant TSH (Thyrogen[®]-stimulated). Most patients stop their thyroid hormone in preparation for treatment, but some patients may stay on their thyroid hormone and be treated after receiving a series of Thyrogen[®] injections. In some cases, Thyrogen[®] is used for the diagnostic scan and then thyroid hormone withdrawal is undertaken if high dose therapy is planned. Thyrogen[®] is also sometimes used by itself without an associated thyroid cancer study. Again, your health care provider will discuss with you the most appropriate option for your individual case.

If you take thyroid medication, you will receive instructions on when to stop taking your thyroid medication, if applicable. Instead of your normal thyroid medication, you may take a short-acting thyroid hormone or none at all. Again, your health care provider will discuss this with you.

During thyroid hormone withdrawal, you may feel more fatigued and cold, and you may also notice puffiness, particularly around the face. Some people may also have a low heart rate, constipation, and muscle cramps. These symptoms are expected during the period of hypothyroidism and should improve within two weeks of resuming thyroid hormone after the RAI scan and treatment. Although generally very well tolerated, there are possible side

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effects with the Thyrogen[®] injections and these are detailed in the attached handout on Thyrogen[®].

Diet (see attached “Low Iodine Diet”)

When you prepare for RAI treatment, you will be asked to follow a low iodine diet for two weeks prior to the test. In addition to the attached “Low Iodine Diet”, the thyroid cancer survivors’ association, ThyCa (<http://www.thyca.org/>), also has a nice low iodine cookbook.

First appointment with nuclear medicine

- Eat a light breakfast.
- Report to your appointment as directed.
- You will be given a low-dose radioactive iodine solution or capsule.
- Do not eat for 30 minutes after receiving the dose.
- Continue to follow the low iodine diet.

Second Appointment with nuclear medicine

- Plan at least two hours for the scan.
- Eat a light breakfast and continue to follow the low iodine diet.
- Report to your appointment as directed.
- Do not wear any metal buttons or snaps.
- You will stay fully dressed and will lie on an examination table.
- The camera above you will take pictures of your body, from your head to your toes, and then it will concentrate on the neck area.
- When the scan is finished, you will go to your next scheduled appointment to see your physician to review the scan and make a determination if RAI is needed. You may or may not be admitted for your RAI treatment.

RAI Treatment

Those patients being treated as an outpatient will be given personalized instructions by nuclear medicine. The decision to be treated as an inpatient or an outpatient is one based on your age, medical condition, the dose of the RAI to be administered, as well as your personal preference and social situation.



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Low Iodine Diet

Key points

- This is a low-iodine diet, **not** a no-iodine diet or an iodine-free diet.
- Remain on this diet for two weeks (14 days) before you have a radioactive iodine scan or a radioactive iodine treatment.
- It is important to continue all of your current medications as directed by your doctor, even if the medication contains small amounts of iodine.
- You may eat foods that are low in iodine (up to 5 mcg per serving); limit your intake of foods that have a moderate level of iodine (5 to 20 mcg per serving); and avoid foods high in iodine (over 20 mcg per serving).
- Read the ingredients listed on packaged food labels.

Avoid the following foods beginning **two weeks** prior to your radioactive iodine treatment and until after your scan and treatment are complete

- | | |
|---|---|
| • Iodized salt, sea salt | • Chocolate |
| • Eggs | • Molasses |
| • Dairy products including milk, ice cream, cheese and yogurt | • Breads made with iodate dough conditioners |
| • All seafood, including shellfish, kelp and seaweed | • Foods and medications containing red food dye #3 |
| • Foods that contain the following additives: carrageen, agar-agar, algin and alginates | • Cured and/or corned foods, such as ham, lox, corned beef and sauerkraut |
| • Rhubarb | • Soy products |
| • Potato skins. The inside of the potato is fine. | • Iodine-containing multivitamins and food supplements |
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Additional Guidelines

Because some restaurants use iodized salt and there is no way to determine which do, avoid all restaurant food. You may eat foods that contain small amounts of milk or egg. You may use non-iodized salt. Consult your doctor before discontinuing any red-colored medication. For additional information and a free copy of a low-iodine cookbook, visit the Thyroid Cancer Survivors Association website at www.thyca.org.

Sample Meals Breakfast	Lunch	Dinner
Orange juice Hot cereal Whole wheat toast with margarine Coffee	Turkey sandwich Lettuce and tomato Italian salad dressing Graham crackers Fresh apple Iced tea	Piece of beef Mushroom sauce Green beans with margarine Small dinner roll Lemon sherbet Ice tea

Allowed Foods and Ingredients:

- Fruits and fruit juice (except rhubarb and maraschino cherries with red dye #3)
- Vegetables - raw or frozen without salt, except beans
- Fresh meats up to 6 ounces a day
- Egg whites
- Grain and cereal products up to four servings per day, provided they have no high-iodine ingredients
- Pasta, provided it has no high-iodine ingredients
- Sugar, jelly, jam, honey, maple syrup
- Unsalted nuts
- Unsalted popcorn
- Unsalted matzo crackers and other unsalted crackers
- Homemade low-iodine bread or muffins
- Unsalted peanut butter or other nut butters (great with apple slices, carrot sticks, unsalted crackers, and unsalted rice cakes)
- Applesauce
- Black pepper, fresh or dried herbs and spices
- All vegetable oils, including soy oil
- Regular and diet sodas (except with red dye #3), non-instant coffee, non-instant tea, alcoholic beverages, lemonade

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Other Resources for Patients and Their Families

Thyroid Cancer Survivors Association

(877) 588-7904

<http://www.thyca.org/>

American Cancer Society

The American Cancer Society (ACS) is a voluntary national health organization with local offices around the country. The ACS supports research, provides information about cancer, and offers many programs and services to patients and their families.

(800) ACS-2345 (1-800-227-2345)

www.cancer.org

Cancer Information Service

The Cancer Information Service (CIS) is a program of the National Cancer Institute (NCI). People who call the CIS speak with highly trained and caring information specialists who can answer questions about cancer screening tests, risks, symptoms, how cancer is diagnosed, the latest treatments and support organizations.

(800) 4-CANCER (1-800-422-6237)

National Coalition for Cancer Survivorship

This group offers information on legal issues and discrimination and directs callers to local groups and/or individuals.

(888) 650-9127

American Thyroid Association

(800) - THYROID

<http://www.thyroid.org/>

Johns Hopkins Thyroid Tumor Center

<http://www.thyroid-cancer.net/>