

UW Medicine



Fred Hutch  
Cancer Center



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## Thyroid Cancer Dosimetry Using I-131

*Information, instructions, and precautions*

*This handout gives instructions for patients who will receive radioactive iodine to help look for thyroid cancer.*

### What is radioactive iodine (I-131)?

Radioactive iodine I-131 is a substance that is used to see where thyroid tumors are in your body. Both thyroid cancer and thyroid tissue trap iodine.

### What is dosimetry?

I-131 thyroid cancer dosimetry is a study (survey) that uses a small dose of I-131 to help doctors see where there is active thyroid cancer. The study measures the amount of I-131 that your body tissues absorb.

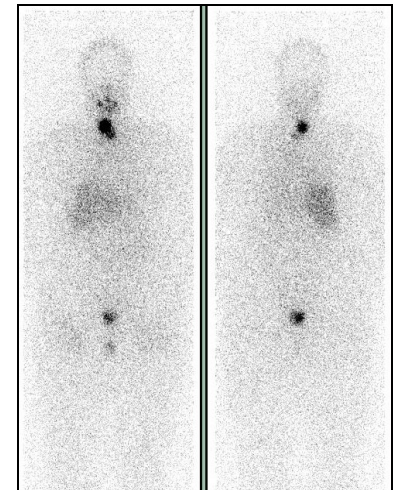
Doctors also use a larger dose of I-131 to treat thyroid cancer. This larger dose is called a *therapeutic dose*.

### How does the study work?

We will ask you to swallow a small dose of I-131. The I-131 will go to your thyroid and to any thyroid cancer sites, where it will be absorbed.

Most of the I-131 that your thyroid tissue does not absorb will leave your body in your urine, stool, and other body fluids within 24 to 48 hours. Iodine that is taken up by your thyroid tissue will remain for a longer time.

I-131 iodine gives off *gamma rays* (like X-rays), which can be seen with special Nuclear Medicine cameras. This lets us see *residual thyroid tissue* (small amounts that are left after thyroid removal surgery) and any other places where there is still thyroid cancer.



*These images taken by a special Nuclear Medicine camera show dark areas where I-131 has been absorbed by body tissues.*

This study also lets us measure the amount of I-131 in your body and blood. We will watch how much it decreases over the next week. Your doctors will use the results from this study to create a customized I-131 therapeutic dose for you.

## What can I expect on the week of the study?

- **Monday:** We will ask you to swallow a small capsule that contains a diagnostic dose (3 millicuries) of I-131.
- **Monday through Friday:** We will take many blood and body measurements each day for the next 5 days.
- **Wednesday, Thursday, and Friday:**
  - We will use Nuclear Medicine cameras to take pictures of your head, neck, and body. These images will show where there is thyroid tissue and thyroid cancer.
  - For these pictures, we will ask you to lie on your back on an exam table for about 1 to 1½ hours while the cameras scan your body.

## What are the side effects of the survey?

Side effects from the radioactive iodine are very rare. Some patients may have itchy skin, a rash, or hives.

## How to Prepare for Your Survey

### Diet

You must be on a **low-iodine diet** for 1 week before this study. For low-iodine diet instructions, visit [www.thyca.org/rai.htm#diet](http://www.thyca.org/rai.htm#diet). If you do not use the Internet, please ask for a printed copy of these instructions.

### Medicines

- **If you are a “withdrawal” patient**, you will need to stop taking:
  - Synthroid (Levothyroxine). Stop taking this for at least 6 weeks before your survey.
  - Cytomel (Liothyronine). Stop taking this for 3 weeks before your survey.
- **If you are a “Thyrogen rTSH” patient**, you do not need to stop taking any of your thyroid medicines. You will receive Thyrogen rTSH injections on 2 different days before you take the I-131 capsule.

## On the Day You Take Your Diagnostic Dose of I-131

- Do **not** eat or drink anything except water for 2 hours before your appointment.
- You will have a blood draw for lab tests right before you receive your diagnostic dose.

### *If you were assigned female at birth:*

- **You MUST tell us if you are pregnant.**
- If you will receive I-131 and are age 60 or younger, **you MUST have a pregnancy test before you take the radioactive iodine.** This blood test may be done again on the day of your I-131 therapy.
- **Tell us if you are breastfeeding.** If you are breastfeeding, you may **not** receive I-131 since the radioactivity would be passed to your child through breast milk. Your breast tissue would also receive extra radiation because of the I-131 in the milk. If you will have I-131 therapy after your thyroid cancer survey, you **must** stop breastfeeding for 3 months before you take the I-131 dose.

## After Taking Your Diagnostic Dose of I-131

- Do **not** eat or drink anything except water for 2 hours after you swallow the iodine capsule. An empty stomach will help your body absorb the radioactive iodine.
- Keep drinking plenty of fluids throughout the week.
- **Stay on your low-iodine diet.**
- You will be scheduled throughout the week for blood draws, whole body measurements, and imaging sessions. Here is the daily schedule for patients who have I-131 thyroid cancer dosimetry:

<b>Monday</b>	<ol style="list-style-type: none"><li>1. Blood work, including a pregnancy test if you were assigned female at birth. <b>Expect to wait at least 1 hour to get pregnancy test results.</b></li><li>2. Swallow I-131 capsule (30-minute appointment).</li><li>3. Blood draw and body measurements at 2, 4, and 6 hours after you swallow the I-131 capsule (30 minutes for each appointment).</li></ol>
<b>Tuesday</b>	<ol style="list-style-type: none"><li>4. Blood draw and body and neck measurements (30-minute appointment).</li></ol>

<b>Wednesday</b>	5. Blood draw, body measurements, and whole body imaging (60-minute appointment).
<b>Thursday</b>	6. Blood draw, body and neck measurements, whole body and neck imaging (90-minute appointment).
<b>Friday</b>	7. Blood draw, body measurements, and whole body imaging (90-minute appointment).

## Radiation Safety Precautions

**IMPORTANT: Please take extra precautions during the first 48 hours to keep your body fluids away from young children.**

Follow these precautions for 48 hours after receiving your I-131 dose:

- Do **not** kiss anyone on the mouth.
- Wash your hands well after using the bathroom.
- Do **not** share food, drinking glasses and cups, dishes, or silverware.

## Who reviews the images and when will I get the results?

A Nuclear Medicine doctor will read your thyroid cancer study images. This doctor also will review any other scan results that you bring with you.

- **If you are scheduled for I-131 therapy after your thyroid cancer survey:** The Nuclear Medicine doctor may also talk with you about some of the findings of your survey.
- **If you are not scheduled for I-131 therapy right away:** The provider who referred you for this test will give you your thyroid cancer survey results within about 3 days. You and your provider will decide the next step or treatment, as needed.
- You may also read your results on your MyChart page. If you need copies of your images on disc, call 206.598.6206.

## To Learn More

To learn more about thyroid cancer dosimetry using I-131, visit the Thyroid Cancer Association website at [www.thyca.org](http://www.thyca.org).

## Who to Call

### UWMC - Montlake Patients

Imaging Services ..... 206.598.6200

Nuclear Medicine..... 206.598.4240

After hours and on weekends and holidays, call 206.598.6190 and ask to page the Nuclear Medicine Resident on call.

### Fred Hutchinson Cancer Center Patients

Fred Hutch Endocrine Clinic ..... 206.288.1160

After hours and on weekends and holidays, call 206.598.6190 and ask to page the Nuclear Medicine Resident on call.

### Harborview Medical Center (HMC) Patients

HMC Nuclear Medicine..... 206.744.4473

After hours and on weekends and holidays, call 206.744.3000 and ask to page the Nuclear Medicine Specialist on call.

### Questions?

Your questions are important. Call your doctor or healthcare provider if you have questions or concerns.

See “Who to Call” on this page for UWMC, Fred Hutch, and HMC clinics and how to get help when your clinic is closed.