Patient Guide to Radioactive Iodine Treatment

What is the Thyroid Gland?

The thyroid is a small butterfly-shaped gland in the neck. Your thyroid gland makes and stores thyroid hormones to help control your heart rate, blood pressure, body temperature and metabolism (how food is changed into energy).

Iodine is a mineral in your body that helps the thyroid gland work properly. The thyroid gland collects and saves iodine from the foods you eat. The thyroid gland uses iodine to make thyroid hormones.

What is Nuclear Medicine?

Nuclear Medicine is a radiology specialty that uses very small amounts of radioactive materials to see areas inside your body. The radioactive material may be given as a pill, liquid or through an IV (intravenous). Special cameras are used to track the radioactive material in your body to help diagnose or treat a disease or condition. The Nuclear Medicine Department is located on the 2nd floor of Doan Hall at The Ohio State University Wexner Medical Center (410 W. 10th Avenue, Columbus, OH 43210).
What is radioactive iodine and how is it used?

Radioactive iodine is used to diagnose and treat thyroid diseases, such as, hyperthyroidism, goiter or to destroy thyroid cancer cells. When you drink a liquid or swallow a capsule that contains radioactive iodine, it collects in the thyroid tissue and destroys thyroid cells. This treatment also helps get rid of any remaining thyroid tissue.

Two Types of Radioactive Iodine Treatment

**Iodine-123 (I-123)**

Iodine-123 test is used to check your thyroid function. This test is often done when blood tests show that you have an overactive thyroid.

- A few days before your test, you will be given a small amount of I-123 by a nuclear medicine technologist. The iodine will enter your bloodstream and be absorbed by the thyroid gland or any thyroid tissue left after surgery.
- A few days after your dose of I-123, you will be scheduled to return to the Nuclear Medicine Department to have a radioactive iodine uptake scan. This test helps your doctor find problems with your thyroid gland and determine what treatment is best for you.
- Since just a small amount of I-123 is used for this test, you do not need to follow any special precautions.

**Iodine-131 (I-131)**

Iodine-131 is given to patients with a variety of thyroid conditions. It can be given to destroy an overactive thyroid (hyperthyroidism), to shrink the thyroid (goiter) or used to destroy thyroid cancer cells.

- Iodine-131 is harmful to normal thyroid cells.
- When I-131 is absorbed by thyroid tissue, tiny radioactive particles are released from the I-131 and destroy thyroid cells and tissue over time.
- If you are treated with I-131, you will have special instructions to follow before and after your treatment. These instructions are included in this handout.
Why do I need to follow a low iodine diet?

You will need to follow a low iodine diet for a short time before your I-131 treatment is given. A low iodine diet limits the amount of iodine in your everyday food choices. You need to follow this diet because it is important to “starve” the thyroid cancer cells of iodine. Your thyroid cells do not know the difference between iodine that is radioactive and iodine that is non-radioactive. This lets the radioactive iodine go into the thyroid cells to help the treatment work. Your doctor will tell you how long you should follow this diet and will give you information about the foods you should not eat during this time.

What should I do to prepare for my care after treatment?

**It is important for you to understand** the difference between radioactive contamination and radiation exposure.

**Radioactive Contamination** happens when any amount of radioactive material is left behind on a surface that you have touched. I-131 stays in your body fluids for a period of time after your treatment. It is important to keep your body fluids cleaned up to prevent others from coming in contact with the radioactive material in your body fluids.

- After you take the I-131, it will go into your blood stream and will be absorbed by thyroid cells. Any I-131 that does not get absorbed will leave your body through your body fluids (urine, stool, sweat, saliva, vaginal secretions, semen, and tears). Your urine will have the largest amount of I-131.

**Radiation Exposure** is the amount of radiation given off by your body after the I-131 treatment. This amount can only be measured by radiation detection equipment. When you are near other people, they are at risk for exposure to the radiation material.

- After you take the I-131, your body will be giving off radiation. It is important to keep a safe distance between you and others to lower their risk of exposure.

To keep your family, friends and co-workers safe, it is very important for you to make plans for your care after treatment.
Here is a list of things that you need to do before you come to the hospital for your I-131 treatment:

- **Complete and return the Therapeutic Radioactive Iodine (I-131) Patient Questionnaire** that is included in this guide, to the address below or email it to radiation.safety@osu.edu.

  OSU Environmental Health and Safety
  Attn: Radiation Safety Section
  1314 Kinnear Road, Room 102
  Columbus, Ohio 43212

- **Tell your doctor if you have any of the following:**
  - Urinary incontinence
  - A catheter or colostomy device
  - Pregnant or could be pregnant
  - Breastfeeding or lactating
  - Infants or small children at home
  - Trouble swallowing pills

- **Child Care** – If you have children under the age of 16, make plans for them to stay at someone else’s home for at least 7 days after your treatment. If that is not possible, you will need to stay in a separate area of your home, away from other family members.

  **NOTE:** Staying in a hotel after your treatment is not recommended.

- **Bathroom** – You will need to use your own bathroom and linens. If that is not possible, you must follow the special instructions about body fluids found later in this handout (page 7).

- **Bedroom** – Arrange to sleep alone in a separate room.

- **Dishes** – Buy disposable dishes and utensils to use for your meals.

- **Cleaning Products** – Buy disinfectant wipes, such as Clorox or Lysol, to clean surfaces that may become contaminated.

- **Latex (or similar) Gloves** – Buy a box of gloves for family members to use. They must wear the gloves when they clean or handle anything that has come into contact with your body fluids.
• **Garbage** – Set up a separate garbage can or bag for your trash. Any items that come in contact with your body fluids, such as Kleenex, feminine products, dishes, eating utensils, cleaning products, and gloves should be thrown away in this can or bag.

• **Work or School** – You should plan to be off work or school for at least 7 days. Tell your doctor or a member of the Radiation Safety team if your job involves working with food, infants and small children, or if you work in a place where you are close to your co-workers for long periods of time. Certain jobs may require you to be off work for a longer period of time.

**What will happen on the day of my I-131 Treatment?**

• You should plan to arrive early at the Nuclear Medicine Department (2nd floor of Doan Hall) on the day of your treatment.

• Your doctor will give you information about what you can eat and drink on the morning of your treatment. Normally, patients are asked not to eat or drink for at least 4 hours before their appointment. Drinking small amounts of water is okay, if needed.

• Talk with your doctor about taking your normal daily medicines before this treatment.

• You will have several images and a radioactive iodine uptake scan done by a nuclear medicine technologist before the treatment.

• The images and information from the scan will help your doctors determine the I-131 dose that is right for you. This process will take some time to complete, so you will have a period of time to wait before your treatment can be given. Once the I-131 dose is determined, an order will be sent to the Nuclear Pharmacy to create your capsule.

• If you have to urinate, you should go to the bathroom before your I-131 treatment is given.

• While the doctors are determining your I-131 dose, a member of the Radiation Safety team will come to talk with you about the special instructions you must follow after your treatment. They will also answer any questions you may have about radiation and radiation safety.

• The nuclear medicine doctor will also talk to you about your I-131 dose and answer any other questions you may have about your treatment.
• A Nuclear Pharmacist along with a member of the Radiation Safety team will be with you when your treatment is given. The I-131 dose is a single capsule, about the same size as an over-the-counter flu or cold medicine capsule.
• You will be given a bottle of water to help you swallow the capsule.
• **Once you swallow the capsule, you are considered “radioactive.”**
• A member of the Radiation Safety team will measure the amount of radiation being given off from your body. They will measure a distance of 1 foot and 3 feet to help prepare your discharge instructions.
• You and your health care team must take special precautions and follow specific safety measures while you are in the hospital for your I-131 treatment.

**What special precautions will I need to follow after I leave the hospital?**

After your treatment, you will have small amounts of radioactive I-131 in all of your body fluids and you will be giving off radiation. **It is important for you to follow these safety precautions to make sure that you and others around you are safe after your I-131 treatment.**

• **Body Fluid Precautions**
  Follow these precautions for **7 days** or as directed by your doctor:
  ▶ **Do not** have close contact with anyone. This includes hugging, kissing or sexual activity of any type.
  ▶ **Do not** have close contact with your pets. This includes holding, petting or feeding them.
  ▶ **Wash your hands often**, use soap and water for at least 20 seconds.
  ▶ **Do not** do any activities that make you sweat.
  ▶ **Wear** latex or disposable gloves when handling body fluids. Wash your hands after you remove the gloves.
  ▶ **Have a separate garbage can or bag** for your trash. Any items that may have come in contact with your body fluids should be thrown away in this can or bag.
  ▶ **Use a separate bathroom.** If you do not have a separate bathroom to use, clean all areas completely (toilet, shower, sink, etc.) after each use. **Do not let small children go into the bathroom unsupervised.**

*Patient Guide to Radioactive Iodine Treatment*
- Toilet
  • Flush the toilet at least 3 times after each use.
  • Make sure all body fluids are cleaned up after each time you use the toilet.
  • Men should sit down to urinate.
  • Wash your hands well after each time you use the toilet.

- Shower
  • Shower and wash your hair each day for 7 days.
  • Rinse and wipe down the shower after each use.
  • Do not share towels with anyone else.

- Tub bath
  • Wash your body and hair each day for 7 days.
  • Rinse and wipe down the tub after each use.
  • Do not share towels with anyone else.

► Use your own toiletries (toothbrush, razors, hairbrush, etc.)
► Wash all of your clothing and linens separately from other laundry. Any clothing or linens soiled with feces or urine should be washed right away and separately from other laundry.
► Do not prepare food for others or share food with others.
► Use disposable plates and eating utensils.
► If you must use regular dishes, wash your dishes separately.
► Wear socks and change them at least once a day.

• Radiation Exposure Precautions
  You will be given information about how long you must follow these safety precautions.
  ► Stay at least 3 feet away from adults.
  ► Stay at least 6 feet away from children under 16 years old and pregnant women for as long as directed.
Do not hold infants or small children and limit the amount of time you are in the same room with them.

Stay at least 6 feet away from pets and do not let them near any items soiled with your body fluids.

Sleep alone in a separate bed.

Stay off work as long as directed.

Stay away from public places and do not use public restrooms.

Do not use public transportation or travel in an airplane.

Do not travel on long car trips with other people.

Other Important Safety Precautions

Double bag any items soiled with body fluids that can be thrown away. Keep the bagged items for at least 2 weeks before putting them in the regular trash.

Other Precautions for Women

You will not be given iodine treatment if you are pregnant, breastfeeding, and/or lactating.

Stop breastfeeding at least 3 months before your I-131 treatment.

Do not breastfeed children after your I-131 treatment. I-131 in your breast milk may be harmful to your baby.

Do not get pregnant for 6 months after your I-131 treatment.

Other Precautions for Men

Do not father a child for 6 months after your I-131 treatment.

What should I know after I have my I-131 Treatment?

If you feel sick and vomit within 48 hours of your I-131 treatment, call both your doctor and the OSU 24/7 Radiation Emergency cell phone at (614) 561-7969.
The following instructions are important to help get rid of the extra I-131 from your body:

- **Eating and Drinking**
  
  For 2 hours after your I-131 treatment:
  
  ▶ **Do not** eat any solid food.
  
  ▶ **Only** drink water.

- **Low Iodine Diet**
  
  ▶ Continue your low iodine diet as directed by your doctor.
  
  ▶ You will be on this diet for 48 to 72 hours after your treatment. This will help make your treatment work better.

- **Drinking Fluids, Urination and Bowel Movements**
  
  ▶ Start drinking more fluids 24 hours after your I-131 treatment.
  
  ▶ Drink at least 1 glass (8 ounces) of clear fluid such as water or juice every hour while awake for 2 to 3 days.
  
  ▶ The first several days after your treatment, try to urinate at least hourly and wake up at least one time each night to empty your bladder. The more you urinate, the quicker the extra I-131 will leave your body.
  
  ▶ During the first week after your treatment, you should have regular bowel movements to get rid of the extra I-131 from your colon.
  
  ▶ Over the counter laxatives may be used to help with constipation, if needed.

- **Hard or Sour Candy**
  
  Using hard candy can help clear the I-131 from your salivary glands, but it is important to follow the guidelines below to prevent any side effects:
  
  ▶ **You must wait at least 12 hours** after your I-131 treatment before using hard candy (lemon drops).
  
  ▶ Using hard candy helps to increase the amount of saliva being created and will remove any I-131 in your salivary glands. This will also help reduce any discomfort you may have in your neck area.

Call your doctor if you have questions about how to manage any of these problems after your treatment.

*Patient Guide to Radioactive Iodine Treatment*
Patient Release Card

- You will get a Patient Release Card with information about your treatment. **It is important to keep this card in your purse/wallet for 80 days after your I-131 treatment.**

- The card will have:
  - Your Name
  - Date of Treatment
  - Radionuclide Given
  - Activity (Amount) of Radionuclide Given
  - Type of Test
  - Expiration Date

- Many transportation services and government buildings have radiation detection equipment. If you use these services or visit these buildings:
  - You will set off the equipment.
  - If that happens, show them your patient release card.

- Show your Patient Release Card card, or have a family member tell emergency medical care providers, that you had I-131 treatment, so they know to take the proper safety precautions.

**NOTE:** If anyone has questions about your I-131 treatment and why you are giving off radiation, ask them to call the 24-hour OSU Radiation Emergency cell phone at (614) 561-7969.

If you have any questions or concerns about radiation safety, you may call the OSU Radiation Emergency cell phone at (614) 561-7969.

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THERAPEUTIC RADIOACTIVE IODINE (I-131) PATIENT QUESTIONNAIRE

Patient Name: ________________________  Medical Record Number: ________________________
Date of Birth: ________________________  Doctor: ________________________
Planned Treatment Date: ________________________  Treatment to be Given: ___________ mCi

1. Where do you live? ☐ Single Family Home  ☐ Apartment/Condo  ☐ Other:_________

2. How many people live in the home? __________
   How many people are less than 2 years old? __________  List age(s): __________
   How many people are between 2 and 16 years old: __________  List age(s): __________
   If there are children less than 16 years old living in the home, can plans be made for them to stay
   with another family member or friend for 7 days after your treatment?
      ☐ YES  ☐ NO  ☐ N/A - does not apply

3. Is anyone in your home pregnant?
   ☐ YES  ☐ NO
   If yes, can the person who is pregnant stay with another family member or friend for 7 days after
   your treatment?
      ☐ YES  ☐ NO  ☐ N/A - does not apply

4. Do you have a separate bathroom that could only be used by you for 7 days after your treatment?
   ☐ YES  ☐ NO

5. Are you able to sleep alone in a separate room for 7 days following your treatment?
   ☐ YES  ☐ NO

6. Do you have any bladder control problems that make you wear special underwear (e.g. Depends)?
   ☐ YES  ☐ NO
7. Do you have any physical problems that make you need care from others?
   ☐ YES  ☐ NO  ☐ N/A - does not apply
   If yes, tell us about the problem and about how many hours each day you need care from others:
   ___________________________________________________________________________________

8. What type of work do you do? _______________________________________________________
   About how many hours each day do you spend within 3 feet of a coworker? __________ Hours
   Can you take time off work for at least 7 days after your treatment?
   ☐ YES  ☐ NO

9. What type of transportation will you use to go home after your treatment? _________________
   How long will it take you to get home? ___________________________________________________________________________

10. Are there any reasons that you may need to spend longer periods of time, within 3 feet of other
    people, for 7 days after your treatment?
    ☐ YES  ☐ NO
    If yes, tell us why and about how many hours each day:
    _____________________________________________________________________________

11. Have you had any radioiodine therapy procedures during the last year?
    ☐ YES  ☐ NO
    If yes, tell us the date and type of procedure:
    _____________________________________________________________________________

12. What is your height and weight?
    Height: __________ Feet __________ Inches
    Weight: __________ Pounds

13. Completed By: _____________________________________________   Date: ______________

   Please complete and return this form to the address below or email it to
   radiation.safety@osu.edu:

   Environmental Health and Safety - Radiation Safety Section
   1314 Kinnear Road Room 106, Columbus, Ohio 43212