Memorial Sloan Kettering Cancer Center

PATIENT & CAREGIVER EDUCATION

Radioactive Iodine Therapy for Thyroid Cancer: Outpatient Treatment

This information will help you get ready for your outpatient radioactive iodine therapy treatment. It explains what to expect before, during, and after your treatment.

About radioactive iodine treatment

Treatment with radioactive iodine lowers your risk of your thyroid cancer coming back. It’s also used to treat thyroid cancer that spreads to other parts of your body.

Radioactive iodine often comes in pill form. It can also come in liquid form if you have trouble swallowing pills. If you want the liquid form, tell your doctor in the Molecular Imaging and Therapy Service (MITS) before your treatment. MITS is sometimes called the Nuclear Medicine service.

When you take radioactive iodine, it enters your bloodstream and is absorbed (taken up) by your thyroid cells. The radioactive iodine gives off radiation and kills the cancer cells in your thyroid gland over time. It also kills any thyroid cancer cells that may have spread to other parts of your body.

Before your radioactive iodine treatment

Follow a low-iodine diet

You must follow a low-iodine diet for at least 1 week before you start treatment. A low-iodine diet will help your radioactive iodine therapy work better. Too much iodine in your diet can stop your thyroid cells from absorbing the radioactive iodine.

Keep following this diet for 24 hours (1 day) after your treatment ends, or follow your doctor's instructions. To learn more, read *Low-Iodine Diet* (www.mskcc.org/pe/low_iodine_diet).

Talk with your doctor about your treatment plan

Your doctor will talk with you about your treatment plan. Your treatment plan will follow these steps over a few days:

Day 1: You will have blood tests. After those tests, you will see your doctor. Then, a nurse will check your vital signs (heart rate, blood pressure, temperature, and breathing rate). They will also give you a thyrotropin alfa (Thyrogen®) injection (shot) to help you get ready for your treatment. This injection will help any leftover thyroid cells absorb the radioactive iodine.

Day 2: You will get another thyrotropin alfa injection. Then 2 hours later, you will get a small diagnostic dose of radioactive iodine in pill or liquid form. You do not need to follow any radiation precautions (safety measures) after getting this small amount of radioactive iodine.

Day 3: You will have a pre-therapy scan. It will show your doctor how your body is absorbing the radioactive iodine. The scan will also help your doctor decide what your treatment dose of radioactive iodine should be.

After your scan, you will get your treatment dose of radioactive iodine. This is an outpatient procedure, so you will not need to stay in the hospital overnight.

3 to 5 days later: You will have a post-therapy scan a few days after your treatment. It will help your doctor see where your body absorbed the treatment dose of radioactive iodine.

Talk with your doctor if you're planning to have a child

If you're planning to have a child, talk with your doctor about your plans before your treatment.

It's important that you:

- Do not get pregnant or get someone else pregnant for at least 6 months after you have radioactive iodine therapy.
- Use contraception (birth control) for at least 6 months after you have radioactive iodine therapy. Using birth control will help prevent pregnancy.

You may have to follow these guidelines for longer than 6 months, depending on what your doctor tells you.

Stop breastfeeding or pumping breast milk

You must completely stop breastfeeding or pumping breast milk at least 12 weeks (3 months) before your treatment. This will help prevent radioactive iodine from collecting in your breast tissue that has milk in it.

After your treatment, you cannot go back to breastfeeding or pumping breast milk for your current child or children. This is because your breast milk can expose them to radiation. You can safely breastfeed or pump breast milk again for any babies you may have in the future.

If you have any questions about breastfeeding or pumping breast milk and your treatment, talk with your doctor. If you're planning to have a child after treatment, talk with your doctor about your plans.

Call your insurance company

Once your doctor has gone over your treatment plan, call your insurance company. Ask them if you need prior authorization for any treatments and tests. Prior authorization is a decision made by your insurance company that a test, treatment, or procedure is necessary. If you have any questions about prior authorization with your insurance company, call MSK's Patient Billing at 646-227-3378.

Plan for private transportation after treatment

Before you come for your treatment, make a plan for getting home using private transportation.

Radioactive iodine gives off radiation. This means that after your treatment, you cannot use public transportation to get home. Examples of public transportation are buses, subways, trains, and planes. Instead, you can:

- Walk.
- Drive yourself home.
- Have someone pick you up and drive you home.
- Take a private car home. **Do not have anyone else in the car with you except the driver.**

If you're driving with another person in the car, sit as far away from them as possible. You will need to sit at least 3 to 6 feet (1 to 2 meters) away from the driver. This means sitting in the back seat of the car and on the opposite side of the driver.

Read the "Resources" section for information about car services.

The day of your radioactive iodine treatment

Showering

- You can shower with soap and water the night before or the morning of your treatment.
- You can use your usual deodorant, lotions, creams, and makeup.

Medicines

- Talk with your doctor about your thyroid medicine. You can take it the day of your treatment if your doctor tells you it’s OK.
- Take all your other medicines like you normally do.

Diet

- Keep following a low-iodine diet.
- Eat a light, low-iodine breakfast (such as oatmeal) at least 2 hours before your scheduled appointment.
- Do not eat anything within 2 hours of your treatment. You can drink low-iodine liquids (such as water) within 2 hours of your treatment.

What to bring

Bring things to help pass the time, such as a book, magazine, laptop, iPad, or your cell phone. You can take these items home with you after your treatment. Any small amounts of radiation on these items will not harm you or others.

Where to go

It’s important that you arrive on time for your appointment. Your nuclear medicine coordinator will remind you where to go and how to check in.

What to expect

Before your treatment starts, you will have a nuclear medicine scan done in MITS. A nuclear medicine scan is an imaging scan that's done using a larger machine you lie down on. The scan normally takes about 45 minutes, but can take longer.

After your scan, a member of your care team will take you to a private room in the outpatient treatment area. Your friends and family can stay with you in your room, but they must leave before your treatment starts.

While you're in your room:

- Your doctor, nurse, and health physicist (FIH-zih-sist) will come see you. A health physicist helps protect people and the environment by making sure that radiation is used safely. Your doctor, nurse, and health physicist will answer any questions you have about your treatment.
- Your doctor, nurse, and health physicist will tell you about the radiation precautions you must follow after your treatment. You will get a written copy of these instructions. Then you will sign a consent form, which says you agree to the treatment and understand the risks.
- A nurse will check in with you before your treatment starts. You will also get medicine to prevent nausea (feeling like you're going to throw up) or vomiting (throwing up). Do not eat for at least 1 hour after you take this medicine, or follow your doctor's instructions.

During your treatment

Your visitors will be asked to leave your room. Then, your doctor will give you your radioactive iodine treatment in your room. The amount you get will be based on the results of your blood tests and scan.

- If you're getting radioactive iodine in pill form, you may get 1 or more pills, depending on your dose. You will get water to swallow with the pills.
- If you're getting radioactive iodine in liquid form, you will drink about 1 teaspoon (5 milliliters) of liquid. You will drink it out of a small vial

through a straw. The liquid is clear and has little to no flavor. Most people say it tastes like water, but some say it has a slightly stale or musty taste.

- Right after your treatment, your health physicist will monitor (keep track of) your radiation level with a handheld device. You will have to stay in your room for at least 1 hour after your treatment. You can use your cell phone or watch TV to help pass the time. You will not be able to have visitors during this time.
- You may not have any side effects right after your treatment, but you may have side effects later. To learn more, read the “Side effects” section.

After your radioactive iodine treatment

Radiation safety instructions

After your treatment, there will be radiation coming from your body. Follow the radiation safety instructions below, as well as the instructions your healthcare provider gives you. This will help keep the people around you safe.

Exposure to others

- **Time:** Limit the amount of time you spend with other people. The less time you spend near others, the less radiation they will be exposed to.
- **Distance:** Keep your distance from other people. The farther away you are from others, the less radiation they will be exposed to.
    - Stay at least 6 feet (2 meters) away from pregnant people and anyone younger than 18 years old for the next 24 hours.
    - Stay at least 3 feet (1 meter) away from all other people for the next 24 hours.
    - Do not sleep in the same bed with anyone for the next 2 to 3 days. Sleep at least 6 feet (2 meters) away.
- **If you share a bed with a baby, child, or pregnant person, call the**

health physics department at 212-639-7391. They will give you specific radiation safety instructions to follow. You can reach them Monday through Friday, from 9 a.m. to 5 p.m.

- **If you're a primary caretaker for a baby or a child younger than 18 years old, call the health physics department at 212-639-7391.** They will give you specific radiation safety instructions to follow. You can reach them Monday through Friday, from 9 a.m. to 5 p.m.

Travel

- Some security equipment (such as at airports or outside tunnels) can detect very small amounts of radiation. A staff member will give you a wallet card that says you had radioactive medicine. This card says you may give off small amounts of radiation for up to 3 months after your treatment. Show this card to law enforcement if they stop you at a checkpoint.
- After your treatment, you cannot use public transportation to get home. Use private transportation that will keep you at least 3 to 6 feet (1 to 2 meters) away from others. See the list below for transportation guidelines. If you will be traveling for more than 4 hours, talk with the health physics department before you leave the hospital.

Transportation guidelines	
OK to travel by	**Do not travel by**

• Walking
• Private car
• Personal car (you can drive yourself home or have someone pick you up and drive you home)
• If traveling by car:
  ◦ Limit to 2 people in the car. Sit diagonally from the driver (sit in the back seat and on the opposite side of the driver).
  ◦ For larger cars, sit in the seat furthest from and behind the driver.
	• Public transportation (train, bus, subway, plane) for 24 hours after your treatment

Going back to work

Your health physicist will tell you when you can go back to work. This is normally 1 to 2 days after your treatment, but can be longer. It depends on the kind of work you do, and if you will be in close contact with others.

Sexual activity

- Your health physicist will tell you when it’s safe to have sexual activity again after your treatment.
- Ask your doctor about using birth control to help prevent pregnancy. Do not get pregnant or get someone else pregnant for at least 6 months after your treatment. Talk with your doctor before trying to get pregnant.

Clearing the radioactive iodine from your body

Some of the radioactive iodine will be absorbed by your thyroid cells, but there will be some left over. Most of the leftover radioactive iodine will leave your body through your urine (pee). Smaller amounts will leave your body through your saliva (spit), sweat, and bowel movements (poop).

Follow these guidelines to help the radioactive iodine leave your body quickly.

- **Drink lots of liquids.** Starting right after your treatment, try to drink at least 8 (8-ounce) cups of liquid every day. Drink water and water-based drinks. Keep drinking liquids for at least 5 to 7 days after your treatment. You do not have to wake up at night to drink liquids. Only drink liquids while you're awake.
- **Urinate (pee) as much as you can.** Your urine will be radioactive, so urinate as much as you can to empty your bladder. Try to urinate every time you feel the urge instead of holding it in your bladder.
    - When you urinate, try not to get any urine outside of the toilet. If you do, wear gloves and clean it up with an all-purpose cleaning disinfectant.
    - If you normally stand while urinating (peeing), try sitting on the toilet. This is so you can avoid getting urine anywhere but in the toilet. Do this for 2 days after your treatment, unless your healthcare provider gives you other instructions.
- **Go to the bathroom (poop) as much as you can.** Your bowel movements will also be radioactive. Go to the bathroom as much as you can for about 1 week so you can empty your colon.
    - Constipation is when you poop less often than usual, have a harder time pooping, or both. If you're often constipated, ask your doctor about taking laxatives before your treatment. Laxatives are medicine that helps you have a bowel movement. If you do not have a bowel movement within 24 hours after your treatment, talk with your doctor.
- **Suck on sour hard candies.** Some people have a dry mouth after treatment. To help with this, you can suck on sour hard candies starting 24 hours after your treatment. Keep sucking on them for about 3 days after your treatment. It will help you make more saliva so the radioactive iodine can leave your body.
- **Contact your nurse.** Call your nurse if you have any problems, such as nausea or stomach pain.

Diet

- You can go back to your normal diet 24 hours after your treatment, unless your doctor gives you other instructions.
- Keep drinking lots of liquids for 5 to 7 days after your treatment. Drink at least 8 (8-ounce) cups every day.
- If you drink alcohol, do not drink more than 1 or 2 drinks a day.

Medicine

- If you were told to stop taking your thyroid medicines, start taking them again the day after your treatment. Follow your doctor’s instructions.
- Start taking all your other prescribed medicines again the day after your treatment. Follow your doctor’s instructions.
- When you leave the hospital, your healthcare provider will give you antinausea medicine to take home with you. Take it as needed after your treatment.

Side effects

You may have some side effects after your treatment. These can include:

- **Mild nausea right after you take the radioactive iodine.** Your healthcare provider will give you antinausea medicine before your treatment to prevent this.
- **Swelling in your cheeks.** This is caused by irritation or harm to your salivary glands from the radioactive iodine. Your salivary glands are glands that make your saliva. The swelling can happen as early as the morning after your treatment. It may continue for 1 year after your treatment. Call your doctor if you have:
  - Painful, swollen salivary glands.
  - Saliva that tastes bad.
  - Saliva that smells bad.
- **Dry mouth.** This is also caused by irritation or harm to your salivary

glands from the radioactive iodine. Dry mouth may happen if you're taking a higher dose of radioactive iodine. To help with this, drink lots of liquids, as instructed by your doctor. Sucking on sour hard candy after your treatment can also help. Dry mouth can happen right after treatment, or it may happen several months to 1 year after treatment. In rare cases, it can be permanent (does not go away).

- **Changes in taste caused by irritation of your taste buds.** Food may taste salty or like metal after your treatment. This only lasts for a short time and often goes away within 8 weeks after your treatment. Try foods with different flavors to make sure you get the nutrition you need.
- **Discomfort in your neck.** This can happen during the first 2 to 3 weeks after your treatment. How long it lasts depends on the amount of thyroid tissue that's still in your neck.Take an over-the-counter pain reliever, such as acetaminophen (Tylenol®). In very rare cases, the treatment can cause swelling in your neck that makes it hard to breathe. This is a serious condition.



If you have trouble breathing, go to the nearest emergency room right away. Have them call your doctor at MSK.

Follow-up care after your radioactive iodine treatment

You will have a follow-up appointment with MITS 3 to 5 days after your treatment. There, you will have a post-therapy scan to see where your body absorbed the radioactive iodine.

Before you arrive for your follow-up appointment, make sure to:

- Shower with soap and warm water.
- Wash your hair very well with shampoo.
- Wear clean clothes. Do not wear any of the same clothing that you wore

during or after your radioactive iodine therapy.

When you have clean skin, hair, and clothes, it helps your radiology technologist get clear images from the scan.

If you have any questions about your scan, call MITS at 212-639-6652.

During your follow-up appointment, your doctor may also:

- Order other scans based on your healthcare needs.
- Order blood tests to see if the dose of your thyroid medicine needs to be changed.

After your first follow-up appointment, you will make another follow-up appointment for 6 months later.

You can find information about your follow-up appointments in MSK's patient portal, MyMSK. If you do not have a MyMSK account, call MITS at 212-639-6652. They can give you information about your follow-up appointments.

Contact information

If you have any medical problems, call your endocrinologist (endocrine doctor). You can reach a staff member Monday through Friday, from 9 a.m. to 5 p.m. If you need to reach a healthcare provider after 5 p.m., during the weekend, or on a holiday, call 212-639-2000. Ask for the endocrinologist on call.

If you have any questions about appointment times or your treatment, call MITS at 212-639-6652. You can reach them Monday through Friday, from 9 a.m. to 5 p.m.

If you have any questions about radiation safety, call the health physics department at 212-639-7391. You can reach them Monday through Friday, from 9 a.m. to 5 p.m.

Resources

Access-A-Ride
web.mta.info/nyct/paratran/guide.htm
877-337-2017
In New York City, the MTA offers a shared ride, door-to-door service for people with disabilities who cannot take public transportation.

Air Charity Network
www.aircharitynetwork.org
877-621-7177
Provides travel to treatment centers.

American Cancer Society (ACS)
www.cancer.org
800-ACS-2345 (800-227-2345)
Offers a variety of information and services, including Hope Lodge® communities. These are free places for patients and caregivers to stay during cancer treatment.

American Thyroid Association
www.thyroid.org
Provides up-to-date information for thyroid patients, their families, and other interested public communities.

Light of Life Foundation
www.lightoflifefoundation.org
(609) 409-0900
Provides thyroid cancer patients with medical information and support.

National Cancer Institute (NCI)
www.cancer.gov
800-4-CANCER (800-422-6237)
Offers a variety of information about cancer, including summaries of treatment guidelines. It also has research news, clinical trial listings, links to medical literature, and more.

Resources for Life After Cancer (RLAC) Program
646-888-8106
At MSK, care does not end after your treatment. The RLAC program is for patients and their families who have finished treatment. This program has many services. We offer seminars, workshops, support groups, and counseling on life after treatment. We can also help with insurance and employment issues.

ThyCa: Thyroid Cancer Survivors' Association, Inc.
www.thyca.org
877-588-7904
Provides up-to-date information about thyroid cancer and support services for people at any stage of thyroid cancer. It also has information for caregivers.

For more resources, visit www.mskcc.org/pe to search our virtual library.

Radioactive Iodine Therapy for Thyroid Cancer: Outpatient Treatment - Last updated on January 23, 2024
All rights owned and reserved by Memorial Sloan Kettering Cancer Center