Radioiodine Treatment for Thyrotoxicosis

Your doctor referred you to Nuclear Medicine for treatment of your overactive thyroid gland. This handout will address common questions and concerns.

What is the thyroid?
The thyroid is a small, butterfly-shaped gland found just below the Adam's apple. Its main function is to control the body's metabolism. It also makes thyroid hormones which travel throughout the body.

What is thyrotoxicosis?
Thyrotoxicosis occurs when too much thyroid hormone is released by the thyroid gland. Symptoms include:

- Weight loss
- Nervousness
- Trouble sleeping,
- Tremor of the hands
- Trouble coping with heat
- Increase in number of bowel movements
- Fast heart rate (pulse)

What causes thyrotoxicosis?
There can be many causes. The most common cause is Graves' disease (an autoimmune disease). Other causes include overactive thyroid nodule(s) and thyroiditis (inflamed thyroid). There are tests we can run to help your doctor decide what caused your thyrotoxicosis.

What blood tests will my doctor use?
The most common blood tests are those that measure the levels of certain thyroid hormones in your blood.

What is the radioactive iodine uptake test?
This test helps us figure out how your thyroid gland is working. Iodine is a crucial building block for thyroid hormone and the thyroid gland will take it up from the blood. In the uptake test, a small test amount of radioactive iodine is given by mouth, and we measure the amount which is taken up by the thyroid 24 hours later. This will confirm thyroid function and tell us if you have hyperthyroidism (overactive thyroid gland) and needs treatment.

How is hyperthyroidism treated?
The method of treatment may depend on the cause. There are two common forms of treatment. These are medicines and definitive treatment.

What medicines are used?
Antithyroid medicines prevent thyroid hormone from being produced, but do not treat the real cause. There are two such medicines, propylthiouracil (PTU) and methimazole (Tapazole®).

Beta-blocker medicines "block" the effect of the thyroid hormones on the body, which in turn will reduce the symptoms of having too much thyroid hormone. They do not affect the thyroid gland itself or reduce the levels of thyroid hormone in the blood.

What is definitive treatment?
Definitive treatment will remove or destroy part of the thyroid gland which will decrease the total amount of thyroid hormone released. We can do this by giving radioiodine or by surgery. In most cases, radioiodine treatment is easier and preferred over surgery.

How does radioactive iodine work?
Iodine is taken up by the thyroid gland. One form of iodine, iodine-131, is radioactive which we use to treat hyperthyroidism. The

radioactive iodine enters the thyroid gland and destroys some of the cells. This will reduce the size of the gland the amount of thyroid hormone it makes. We attempt to give an amount of radioiodine which will reduce the amount of thyroid hormone produced to normal levels and cure the hyperthyroidism.

Radioactive iodine that is not taken up by the thyroid gland exits the body through the urine, sweat, saliva, and bowel movements.

How long does it take to feel better after radioiodine?
Your symptoms should begin to improve by one month after treatment and the full effect is often complete by six months. Sometimes, you will need a repeat treatment. At times, this treatment may cause the thyroid gland to stop working, leading to hypothyroidism. This is easy and safe to treat.

Is radioiodine treatment safe?
This is a safe treatment that has been used for over 60 years. It does not increase your risk of leukemia or thyroid cancer.

A very rare effect of radioiodine or surgical therapy, called thyroid storm, may occur within the first week after treatment. This can happen if there is a sudden release of a large amount of hormone from the thyroid gland. This will produce a very high heart rate (above 130 beats per minute) and a high fever (above 103° F). If this happens to you, you should contact your doctor or an emergency room at once. This is a very rare side effect but is easy to treat.

What about hypothyroidism?
Hypothyroidism occurs when not enough thyroid hormone is produced. This is common after treatment with radioactive iodine or surgery and can even occur without these treatments in Graves' disease. The symptoms of hypothyroidism may be hard to notice. You may feel a little bit tired, a little weak or a little depressed. Therefore, you must see your doctor each year and have a blood test to check for this issue.

A simple and useful treatment is to replace the thyroid hormone by taking a pill each day. Thyroid pills are not costly and are made in many strengths. Your doctor will order the exact amount of hormone you need to treat the problem.

What safety measures should I take after treatment?
Most of the radioiodine that your thyroid doesn't take up will leave your body within two days. It mostly leaves your body through your urine, but some also comes out through saliva, sweat and through the bowel. Follow these guidelines after your treatment:

- No food or drink for one hour after the treatment.
- Drink lots of fluid after this hour, and for the next 24 hours, trying to pass urine each 1-2 hours.
- Try to have at least one bowel movement per day.
- If you have an accident and you soil your clothing or bedding with urine, then wash these items (in washing machine), alone without any other clothes.

Radiation Safety Measures for Others
Your treatment uses a small dose of radioiodine so people around you are at very low risk from the radiation. Pregnant women and small children are more sensitive. The three basic guidelines are to:

1. Keep your distance from others.
2. Reduce the time you spend near people.
3. Practice good hygiene, mainly washing hands after using the toilet.

Other Safety Guidelines

- Do not return to work for ____ days.
- Limit your time in public places.
- Do not travel by airplane or long car trips for two days.
- Maintain an arm's length distance from other people. Follow these guidelines for 3-4 days.
- Do not carry a baby for 5-6 days.
- Flush the toilet twice after using it. Rinse under the rim of the toilet with a brush, and then flush again. Use a different toilet from others at home if you can.
- Avoid sharing eating utensils. After use, you can wash utensils as usual.
- Sleep alone in bed for 2 days.
- Avoid close contact with children and pregnant women.
- Tell your doctor if you think you are pregnant because pregnant women should not have this treatment.
- Tell your doctor if you are breast-feeding.
- Avoid becoming pregnant or fathering a child for at least 6 months after treatment.

You will likely see your doctor in 6-8 weeks, then every 3-4 months from the time of treatment for a year. You should have yearly blood tests after that.

Common Questions

Can I keep breast feeding?
No! The radioiodine that an infant absorbs through breast milk can cause permanent thyroid gland problems. The baby is also exposed by being close to the mother's thyroid gland during breast feeding. You should stop breast feeding well before the treatment so you aren't making any breastmilk. You may breastfeed again after the birth of your next child.

I am still lactating. Is that a problem?
Yes! The radiation dose to the lactating breast can be large - as much as 10 times the dose to the nonlactating breast. You must fully stop lactating before treatment. If you stop nursing for 2-3 months before treatment, we can be sure that lactation doesn't increase your radiation exposure.

I have children at home, what should I do?
Limit contact with them for 48 hours, and sometimes longer when large doses are used, or for very young children. Always keep in mind the "arm's length rule". Make plans for the children to spend most of this time with other family members.

I am planning on staying at a hotel for a few days just to play it safe. What do you think?
This is not a good idea. This will expose the public (hotel staff and patrons) to radiation. Most of the radioiodine is passed through the urine so we advise you to avoid using public bathrooms.

How long should I wait to get pregnant after having radioiodine treatment?
You should wait at least 6 months.

Do I need any tests prior to treatment?
Hospital policy requires a pregnancy test on the day before or the day of treatment for all women of childbearing age.

I don't need a pregnancy test because my husband had a vasectomy, right?
Wrong! You will still need a pregnancy test as it is hospital policy.

How do all these safety measures apply to pets?
Treat your pets as children. Their thyroid glands are much more sensitive than adult human thyroid glands. Besides the "arm's length rule," you should avoid holding your pets for 48 hours.

I heard that radiation can set off airport security alarms. Does this concern me?
Yes! I-131 can set off airport alarms for a few weeks after treatment. If you intend to travel, ask us to provide a letter to take with you just in case you set off an alarm.

Who to Call
If you are a UW Health patient and have any other questions or concerns call us at **(608) 263-1462**.

The toll-free number is **1-800-323-8942**. Ask for the Nuclear Medicine Clinic.

If you are a patient receiving care at UnityPoint – Meriter, Swedish American or a health system outside of UW Health, please use the phone numbers provided in your discharge instructions for any questions or concerns.