



## Graves' Disease & Radioactive Iodine Treatment

### What is Graves' disease?

Graves' disease is a type of overactive thyroid gland, also known as hyperthyroidism.

### What are the treatment options?

There are three general treatment strategies for Graves' disease:

1. Medication: Medications have variable success, but often patients become resistant to medication treatment over time.
2. Surgery: While generally not the treatment of choice, surgical removal of the thyroid gland may be a treatment determined. This is more invasive and has common risks related to surgery.
3. Iodine Ablation of Thyroid Tissue: Ablation is the surgical removal of body tissue. Radioactive iodine is given as a pill that contains radiation within. Based on the results of your previous thyroid nuclear medicine studies and the estimated size of your thyroid gland, a dose will be calculated specifically for you. The physiology of the radioactive iodine pill is similar to the pill that is used for the uptake studies that have been done in the past.

### How does the radioactive iodine pill work?

The patient does not feel anything happening as the radioactivity is absorbed by the thyroid gland. As the radioactivity continues to be absorbed by your thyroid gland, it will radiate and subsequently destroy the cells within the thyroid gland. The goal of this treatment is to give you just enough radiation to kill the overactive thyroid cells, leaving you with enough remaining thyroid cells to make a normal and adequate amount of thyroid hormone. However, a common occurrence is that all of the thyroid cells are hyper functioning, and after 4-to-6 weeks when the treatment has been in full effect, some patients tend to develop hypothyroidism, or underactive thyroid.

### What happens if I develop hypothyroidism?

If you develop hypothyroidism (underactive thyroid), your doctor will prescribe thyroid replacement medicine (taken as a pill) specifically calculated to your body's need.

### What will I feel when I take the radioactive iodine pill?

You will not feel the effects of the radioactive iodine immediately; it usually takes 4-to-6 weeks for it to work completely. This is because the thyroid hormone circulating in your body from your current overactive thyroid gland needs to decay or diminish. The goal is to stop your thyroid gland from making more thyroid hormone going forward.



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### **What are the side effects of the radioactive iodine pill?**

The radioactive iodine pill is extremely safe and there are no immediate life-threatening side effects. Some minor side effects of the treatment may include:

- Dry mouth/dry eyes: This occurs because some of the radioactivity is taken up in the salivary glands and tear glands. This can also cause some pain/swelling in the salivary glands. To minimize the effects of dry mouth, patients are encouraged to suck on sour candy to help you salivate, which also has the benefit of flushing out the radioactive iodine that has built up in the salivary glands. Drinking plenty water to stay well hydrated is strongly encouraged. For dry eyes, the use of saline drops or artificial tears may provide relief.
- Pain in the upper abdomen/stomach area: Please call your primary care doctor or endocrinologist should this occur.
- There have been some case reports of temporary loss of taste that does resolve over time. It may persist for months but should eventually go away.

### **Are there any risks to me or others because of my radiation treatment?**

The risk in this treatment is that you are being exposed to radiation. Anytime you are exposed to radiation, there is always a risk of developing cancer, though this risk is quite small. For example, for female patients, the lifetime risk of developing breast cancer is 8%. By receiving this treatment, the lifetime risk of developing breast cancer is increased incrementally to 9-10%.

### **Do I need to prepare for this treatment?**

If you have not already been on a low iodine diet, this will be required for two days. The radioactive pill uses iodine to get into your thyroid gland. If there is a high level of circulating iodine in the body, it will lessen the effect of this treatment. Things that contain high levels of the iodine include multivitamins, shellfish, table salt and dairy products. Kosher salt contains no iodine and is a good substitute for table salts.



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### What radiation safety precautions do I need to obey?

There are basic radiation safety precautions that you will need to comply with over a period of four days. [Note: If you are around small children under the age of 10, we encourage you to comply with these radiation safety precautions for one full week.] You will be experiencing radiation exposure as treatment and we want to greatly minimize exposure to others:

- Sleep in a separate bed in a separate room for the first four days of treatment. This is to minimize radiation exposure to anyone who may be sleeping next to you. Hotels stays are discouraged as rooms are often only separated by a few layers of drywall.
- You are encouraged to have a separate bathroom for the first four days to minimize radiation exposure to others. If you must share a bathroom, use your own towel that is kept in your bedroom. After you use the toilet, flush twice as radiation is excreted in urine and feces.
- Keep your laundry separate from others in the house. As some of the radiation is excreted through sweat glands, this will cause radiation to get on others' clothing. After your four days are finished, wash your close separately including your sheets and towels. This will get rid of most of the radiation. Clean your bathroom with disinfecting wipes.
- You are not allowed to prepare food for others as radiation will be excreted in your sweat glands and will get onto the food. Please have your food prepared following a low iodine diet.
- Please use regular plates and silverware. Washing your plates and silverware with soap and water will remove 99% of the radiation. Do not use plastic plates or plastic utensils as these items are disposable and will eventually go into landfills, which will expose items in the landfill to radiation.
- Please do not go into work for the next four days. Important: if you are a daycare worker or work around small children, do not go into work for one full week. A physician note can be provided.
- Please do not go into large public spaces or transportation for four days. This includes trains, planes, buses, long car trips, shopping centers, malls, sporting events, concerts, etc. This restriction is in place for the first four days to avoid exposing others to radiation. However, you may leave your house or go for walk but please do so in a space where you won't be exposed to others.

### When should I follow up with my doctor?

You should follow up with your doctor in the next four weeks to reassess the status of your thyroid. Your endocrinologist will provide counsel on restarting any thyroid medication.

Any questions? We encourage you to schedule time with the radiologist prior to your procedure to discuss the precautions and side effects prior to scheduling your treatment.