

## HYPERTHYROIDISM AND ITS COMPLICATIONS

The thyroid is a small gland in your neck, in front of your windpipe. It produces a hormone called thyroxine which regulates the body's metabolism. Hyperthyroidism is a medical condition of overactive thyroid gland, which leads to excessive thyroxine hormone secretion.

Common causes of hyperthyroidism are autoimmune condition known as Graves' disease (when your body immunity acts against your own body) and benign single or multi nodular goiter.

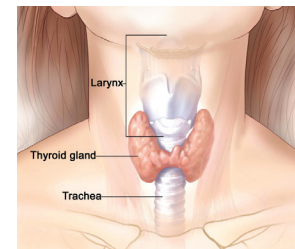
The hypersecretory of thyroxine may result in fast heartbeat, emotional irritability, heat intolerance, weight loss, hand tremor, muscle weakness, sleep problems and diarrhoea. In severe cases, it could lead to heart disease (failure), confusion, high body temperature and death (a condition known as thyroid storm). In addition, Graves' disease may cause inflammation and bulging eyes, which may lead to blindness.

## TREATMENTS AVAILABLE FOR HYPERTHYROIDISM

Currently, there are three forms of treatments available,

- Anti-thyroid medication (e.g. Carbimazole)
- Surgery
- Radioactive iodine (I-131)

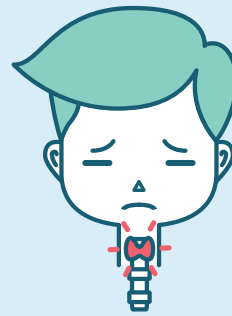
Anti-thyroid medication helps in controlling your symptoms but it does not cure the disease, whereas surgery and I-131 have a curative effect.



A patient with goiter (abnormal enlargement of the thyroid gland). A goiter can occur in a thyroid gland that is producing too much hormone (hyperthyroidism).

## TREATMENT PROCEDURE

### BEFORE THE TREATMENT:



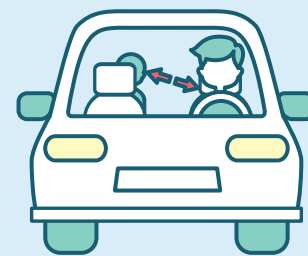
- You will be seeing a nuclear medicine physician before the treatment to assess your medical condition and thyroid function status, discuss the treatment options and answer your queries.
- If you decide to receive the treatment, you need to:
  - Withdraw certain medications, in particular anti-thyroid drug, for a few days.
  - Eat a low iodine diet for at least 1 week (you will be seen and advised by our dedicated dietitian).

### ON THE DAY OF TREATMENT:



- You will be given a capsule containing radioactive iodine. You will be asked to swallow it whole along with water.
- Within 24 hours, most I-131 accumulates in the thyroid gland. As the remaining I-131 passes out in the urine, you are encouraged to consume plenty of water and urinate frequently to reduce accumulation of I-131 in the kidneys.

### AFTER THE TREATMENT:



- If you are traveling home from the hospital, sit as far away from the driver as you can.
- As small amounts of I-131 may be present in the saliva, it is advisable to consume sour sweets and lime after 24 hours of taking it to get rid of I-131 in the saliva gland.
- You are advised to strictly follow the doctor's advice on when to resume your anti-thyroid medication and other medications after the I-131 treatment.



Drink plenty of fluids as most of the extra radioactive iodine is eliminated in your urine.

## RADIATION SAFETY PRECAUTIONS AFTER RADIOACTIVE IODINE (I-131) THERAPY (TO BE OBSERVED BETWEEN 7-14 DAYS)

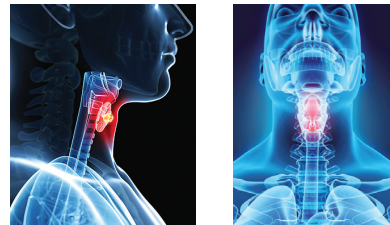
**As I-131 may still be present in the saliva, sweat and urine:**

- 1 Avoid close and prolonged contact (keep at least 3ft (1m) distance from others).
  - Maximise 6ft (1.85m) distance from children and pregnant women
  - Sleep in a separate bed (6ft (1.85m) of separation) from partner, child or infant
  - Limit time in public places
  - Avoid travelling on public transport
- 2 You may need to delay returning to work depending on the nature of your job.
- 3 Do not prepare food for/share utensils with others.
- 4 Wash clothes, towels and bedding separately.
- 5 When using the toilet, flush 2-3 times after use. Avoid spillage of urine

**NOTE: DO NOT** become pregnant or father a child for the first six (6) months after having I-131. You may want to talk to your doctor on how to prevent a pregnancy.

## WHAT IS THE OUTCOME AND FOLLOW UP AFTER RADIOACTIVE IODINE (I-131) TREATMENT.

Most patients responded well after one session of treatment. Subsequent follow up with your doctor and thyroid function test are necessary to ensure close monitoring of your condition and side effects as well as determine whether additional treatment is required.



Radioactive iodine is the only form of non-invasive targeted therapy that is specifically taken up by the thyroid gland, and emits radiation to kill the surrounding thyroid tissue.

### WHAT IS RADIOACTIVE IODINE (I-131)?

Radioactive iodine (I-131) is a form of targeted therapy that uses low dose of radioactive form of iodine.

In normal physiological condition, iodine is used by the thyroid gland to produce thyroid hormones. When I-131 is given, it will be absorbed and concentrated in the thyroid gland. It then emits radiation that specifically kills the thyroid cells.

### ADVANTAGES OF RADIOACTIVE IODINE (I-131) TREATMENT COMPARED TO OTHER TREATMENTS

- 1 It is a non-invasive treatment with curative intent.
- 2 It is very effective with improvement in symptoms and blood parameters seen within 4 to 8 weeks after treatment.
- 3 Low relapse rates after the treatment.
- 4 Non-allergic and no liver or severe low blood count side effects.

### WHAT ARE THE RISKS AND SIDE EFFECTS FROM RADIOACTIVE IODINE (I-131) TREATMENT?

Be assured that I-131 has been used to treat thyroid disease for more than 50 years. Despite the low radioactive dose used, no cancer risk has been reported thus far. However, it is advisable to follow certain precautionary measures as stated in the next section.

Most patients notice no side effects from the treatment. Very rarely, patient may experience painful and swollen gland, dry mouth, worsening eye problem and 'thyroid storm'.

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# Radioactive Iodine Treatment for Hyperthyroidism

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