



GRAFTON NUCLEAR MEDICINE & BONE DENSITOMETRY



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Radioactive Iodine Therapy for **Thyroid Cancer** — Now Available!

Total thyroidectomy and radioactive iodine therapy form the mainstays of treatment of differentiated thyroid carcinoma. However as many referrers are aware, patients from the North Coast are currently required to travel to major teaching hospitals in Brisbane, Newcastle or Sydney for radioactive iodine therapy. Admission as an inpatient is needed for at least 24 to 48 hours, and therefore presents an obstacle to patients accessing appropriate medical care.

From early 2014, Grafton Nuclear Medicine & Bone Densitometry will be offering outpatient radioactive iodine therapy for thyroid carcinoma. We are the only non-metropolitan nuclear medicine facility to offer this service. The dose provided will be 1.1 GBq (30 mCi), which involves lower radiation compared to previous therapies, and is rapidly becoming the standard treatment for the majority of patients in the United States and Europe. Patients will need to meet the following criteria:

1. **Low-risk differentiated thyroid carcinoma** (these criteria are likely to undergo revision as more experience is acquired worldwide with the new approach):
 - Total thyroidectomy with complete resection of tumour
 - Primary tumour <2cm +/- local neck metastases, or primary tumour <4 cm + no neck metastases
 - No macroscopic tumour invasion
 - No aggressive histological features (e.g. tall, insular, columnar cell, vascular invasion)
 - No distant metastases
2. **Aged 18 to 75 years**
3. **Able to drive oneself**
4. **Capable of independent self care for 1 week**
5. **Home environment suitable for isolation for 1 week (e.g. living alone, or has access to separate bedroom and bathroom with town sewerage)**



A consultation will be required prior to treatment to facilitate dose preparation, and a neck ultrasound will be performed if clinically indicated. The service will be bulk billed. Patients will need a written referral from a GP or specialist for **consultation and iodine ablation therapy +/- ultrasound**.

We continue to offer low dose radioactive iodine therapy for Graves' disease and toxic nodules. The arrangements for these remain unchanged.

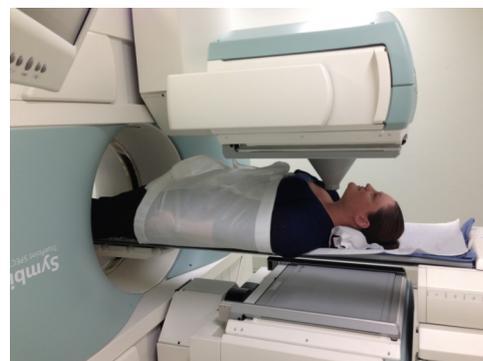


The First Line of Investigation for Thyrotoxicosis is?

The American Thyroid Association guidelines state that a thyroid uptake scan should be the first investigation undertaken following the detection of thyrotoxicosis. The diagnostic yield in this situation is as high as 90%. A thyroid ultrasound is usually performed where nodules are suspected on the basis of the thyroid scan.

The injected tracer mimics the biological action of iodine within the body. Areas which take up more tracer are functionally more active, while areas taking up little or no tracer exhibit less activity. For this reason the scan can readily differentiate between Graves' disease, toxic nodules, and subacute, painless or post-partum thyroiditis.

Below are some examples of typical appearances in various disease conditions:



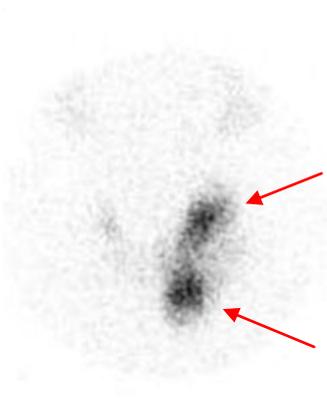
Patient having a thyroid scan



Normal Scan



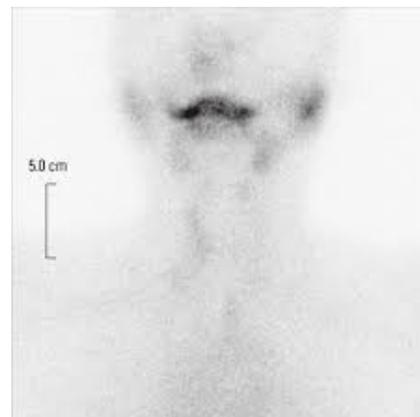
Graves' Disease:
Diffuse Increased Uptake



Toxic Nodules:
Discrete Increased Activity
Within Nodules



Toxic Multinodular Goitre:
Multiple Toxic Nodules



Subacute Thyroiditis:
Minimal Glandular Activity