Gloucestershire Hospitals
NHS Foundation Trust

Patient Information

Radioactive Iodine therapy (RAI) treatment for thyrotoxicosis

Introduction

Your doctor has recommended that you consider having Radioactive Iodine Therapy (RAI) for the treatment of your overactive thyroid gland. This leaflet gives you information about the treatment.

When you attend the department for the treatment, you will be given more information and you will be able to ask any questions that you may have.

Why do I need the treatment?

If you have thyrotoxicosis (an over active gland), RAI is a good treatment option. Treatment is usually a single capsule that contains the radioactive iodine. Other possible treatments would be prescribed tablets, that can have unpleasant side effects, or to have an operation.

What is RAI?

RAI is a radioactive form of iodine. Iodine is only used by thyroid tissue and is able to target and destroy, some or all of the thyroid tissue. This will then bring your thyroid activity levels down.

The treatment is in the form of a capsule, about the size of a paracetamol caplet. The capsule should be taken with a glass of water.

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How does RAI work?

The thyroid gland normally soaks up iodine from the circulation. By using RAI it allows us to target the correct area. When we give you RAI, the radioactivity enters the thyroid gland. The effect is to reduce the activity of some of the cells within the gland. Radioactive iodine gives off low energy radiation that only travels a very short distance. It is this radiation that stops the thyroid cells from working. It also gives off a small amount of high energy radiation, and it is because of this small amount of high energy radiation that you need to avoid close contact with other people for a short time.

What will happen after treatment?

The aim of the treatment is to reduce the action of the thyroid from overactive to underactive. We find this is the best way to make sure that your thyroid is never overactive again. If your thyroid becomes underactive, you will need to take thyroxine medication for life. This can be arranged by your GP without the need for hospital visits. A small number of patients find that RAI leaves them with a normal thyroid hormone level. There is still the possibility that your thyroid will become underactive in later life or even become overactive again.

How long does the treatment take to work?

RAI slowly breaks down over a period of several weeks. It has usually had most of its effect after 3 months.

The radioactivity levels also drop over a period of several weeks.

You will not notice any immediate effects of the treatment as it takes time for the thyroid to react. The full effect will be reached about 3 months after treatment.

Will I need to have RAI more than once?

For most patients a single treatment is enough. We usually wait at least 6 months for the first dose to work before thinking about a second treatment.

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Is RAI safe?

It is a very safe treatment. However, you are receiving a radioactive dose of iodine. RAI has been used since the early 1940's. Long term follow up has shown that people treated with RAI are no more likely to develop serious illness such as cancer than people who have never been given this treatment.

Are there any special precautions?

Yes - because the treatment involves radioactivity, there are some special precautions you need to take. The exact timings will depend on the dose of RAI.

Following the treatment you should:

- Stay at least 1 metre away from adults for up to 16 days
- Stay away from children for 22 days
- Stay away from infants (aged less than 3 years of age) and pregnant women for 27 days
- You should not have any routine medical or dental check-ups for 37 days after treatment, for example no blood or urine collection.

If you usually share a bed with someone, you will need to sleep separately for 16 days, longer if they are pregnant.

If you need a comforter/carer to share a bed with you, they will need to sign a consent form as they will be exposed to a measureable dose of radiation. More information is available from the Nuclear Medicine Department upon request.

You will usually need to take a short amount of time off work. The length of time away from work will depend on the exact nature of your work. This will be discussed in more detail at the consultation appointment.

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Can everyone who needs it have RAI?

RAI is **not** suitable for:

- women who are pregnant or breast feeding
- women who are planning pregnancy in the next 6 months
- men who are planning to father a child in the next 4 months.

It is not an appropriate treatment for anyone who suffers with urinary incontinence as RAI is excreted in the urine.

If you are sexually active you will need to use 2 reliable forms of contraception, one of which must be a form of barrier such as a condom. This contraception should be used for 37 days.

Are there any side effects?

The main effect of RAI is to reduce your thyroid gland's production of thyroxine. There are no other effects from the treatment.

Treatment

If you and your endocrinologist agree the treatment is a good idea, you will be referred to the specialist at Cheltenham General Hospital. At that appointment the treatment and precautions will be discussed in more detail. You will be asked to sign the consent form to confirm that you understand the treatment and are happy to go ahead. The Nuclear Medicine Department will contact you with a suitable date for treatment and the radio iodine dose will be ordered.

You will need to stop certain thyroid medications a few days before the treatment. This will be discussed with you.

You will also need to follow a low iodine diet for 48 hours before the treatment. You should avoid fish, seafood, milk and food containing the colouring E127.

Iodine is a mineral and therefore it is impossible to completely remove it from the diet but the above foodstuffs contain the highest concentrations.

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Following this advice will reduce the amount of iodine in your diet. Too much iodine in your system before treatment may reduce the effectiveness of the radioactive iodine.

On the day of the appointment you can have breakfast but you must not eat or drink anything for 2 hours before your treatment.

The treatment appointment will be in the Nuclear Medicine Department, Oncology Centre at Cheltenham General Hospital.

What does the treatment involve?

First, the Nuclear Medicine team will check your details and make sure that you understand the radiation protection instructions. You will then be given a small capsule which is swallowed with water. You will be asked to wait in a separate waiting area for 1 hour before going home.

You must have nothing to drink for 1 hour and nothing to eat for 2 hours after treatment. You may drive yourself home or leave as the sole passenger in a car driven by someone else. You must not use public transport to go home after the appointment. This is because you will need to follow the radiation protection rules. You will be given these instructions and the chance to ask questions before your treatment.

After the treatment

You will have been advised whether you need to restart your anti-thyroid tablets. A blood test will be taken 6 to 8 weeks after your treatment. This is to check your thyroxine levels and what effect the treatment has had. You will continue to have regular thyroid blood tests and start thyroxine if your thyroid becomes underactive.

You should have a thyroid blood test annually, for the rest of your life, at your GP’s practice.

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Contact information

Nuclear Medicine Department
Cheltenham General Hospital
Tel: 0300 422 4036 (between 9:00am and 3:30pm)

Further information

British Thyroid Foundation
Website: www.btf-thyroid.org

British Thyroid Association
Website: www.british-thyroid-association.org

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