Cancer Directorate
Oncology

Radioiodine therapy (out-patient version)

This leaflet has been written to provide information for patients and their relatives. We hope this will answer your questions, but it may give rise to others which we are happy to answer.

The multi professional team that will be caring for you consists of a nuclear medicine physicist, oncology consultant and nurse specialist.

We hope you find this helpful and welcome your comments, should you have any.

What is radioiodine?
There are several radioactive forms of iodine. The one we use is called Iodine-131 (\(^{131}\text{I}\)) and it is used to treat thyroid cancer and other thyroid diseases. Iodine is part of everyone’s diet and is necessary for the normal working of the thyroid gland. This gland is situated in the neck and controls the speed at which many bodily processes take place. Like ordinary iodine, radioiodine is taken up by any remaining thyroid cells but the radioactivity destroys them. The treatment is painless.

How do I prepare for treatment?
Some patients have to stop thyroxine (T4) tablets six weeks prior to radioiodine treatment. It is usual to have short-acting liothyronine (T3) at 20mcg twice a day for one month and then to have two weeks without thyroid hormone replacement. You should obtain a prescription from your GP for the T3 if you do not already have the tablets.

It is important that you follow the instructions regarding stopping the thyroxine medication given to you by your consultant. Please contact the hospital if you are unsure about your thyroxine medication. During this time it is usual to experience symptoms such as dry skin, dry hair, feeling lethargic and depressed, all of which can interfere with daily life.

Some patients are unable to stop thyroid hormone replacement and are given an injection of a substance called “recombinant human thyroid stimulating hormone” (rhTSH) on the two days prior to radioiodine. The injection is given into muscle (usually the buttock). The injections can sometimes be given at home or occasionally patients need to come to hospital to have them administered.

The most common side effects associated with recombinant thyroid stimulating hormone are nausea and vomiting, headache, fatigue and dizziness but these are usually mild.
Less common side effects include lack of energy, back pain, flu-like symptoms, fever, rash, shivers and a tingling sensation. Rare side effects include palpitations, joint and muscle pain, shortness of breath and water retention.

**How is radioiodine given?**
The radioiodine is usually in capsule form but can sometimes be in liquid form. Both forms are administered by a physicist. The treatment itself involves swallowing the capsule or drinking the liquid. The whole procedure takes only a few minutes. It is usual to give an anti-sickness tablet half an hour before you receive the radioiodine. (You will need to have collected this and your thyroid hormone tablets if required, from Lloyds pharmacy in Addenbrooke’s outpatients, prior to attending Nuclear Medicine.) This is as a precaution and most people do not feel sick as a result of the treatment.

**Are there any side effects?**
Possible early side effects associated with radioiodine treatment are neck discomfort (some swelling 24 to 48 hours after treatment), taste abnormalities, nausea, acute inflammation of the salivary glands and radiation induced gastritis and cystitis. Side effects vary from person to person; you may have none or several of the side effects described. They are however rare, generally minor and usually temporary. Medication can be given to relieve some of these symptoms. Late side effects associated with radioiodine are very rare and include a dry mouth, dry eyes and secondary carcinomas or leukaemia.

Please do talk through any of your questions with the consultant or a member of the treatment team.

**What if I become, or am likely to become, pregnant or father a child?**
Women are advised not to become pregnant or be breast feeding for six months after radioiodine treatment and diagnostic radioiodine scans. It is very important that you do not have radioiodine if you are pregnant or if you think that you might be. Please let the medical staff know if you are unsure before you have your treatment. You should use a reliable contraceptive until all your treatment has finished. In the long-term your fertility will not be affected although there may be a small risk if repeated doses of radioiodine treatment are needed. If you are breast feeding you should stop this before you have radioiodine treatment.

Men are advised not to father a child for four months after radioiodine treatment. In the long term your fertility should not be affected but there may be a small risk if repeated radioiodine treatment is needed. If you do become pregnant or father a child, you will receive counselling from your doctor about the possible risks to your unborn baby.
What happens on the day of treatment?
Before collecting your medications from Lloyds pharmacy you should attend one of the blood testing rooms to have your thyroid hormone and thyroglobulin samples collected. Once you have had the blood test and collected the medications you should attend Nuclear Medicine on Level 3.
In the Nuclear Medicine department you will be taken to the treatment room where you will be for the duration of your visit. Before your treatment you will be seen by a Doctor who will have given you an explanation of the treatment. On the day you will be seen by a physicist who will give you an explanation about the radioactive safety precautions to follow on departure. You will have the opportunity to ask any questions that you may have.

Following these discussions you will be given the Radioiodine (see ‘How is Radioiodine given?’ section for details). Following the administration you will be immediately radioactive and therefore a risk to others. However once the radioactivity has reached a safe level you may go home. To find this level the physicist will take measurement at regular intervals and inform you once you can leave, this typically takes around three hours but can take longer so be prepared to stay all day. When you leave you will be given some restrictions by the physicist who will describe these verbally and give some written instructions (see ‘Are there any restrictions when I get home?’ section for more details).

What precautions are taken about the radioactivity?
The radioiodine leaves the body in urine, stools, saliva and perspiration. Some of the radioactivity may get into your clothing, bedding and anything that you put into your mouth.

Rinse your toothbrush and flannel thoroughly after use. You should wash your hands before knitting or reading.

Do not chew pencils or knitting needles or lick postage stamps or envelopes as traces of radioiodine may be transferred to these items on your saliva.

What do the physics staff do?
The physics staff are trained in the handling of radioactive substances and with all the radiation aspects of your treatment. A physicist will explain the procedures to you before giving you radioiodine.

Is radioiodine dangerous to others?
In this treatment, radiation will be used for your benefit. There is a possibility that it could be harmful to those with whom you come into contact. Advice on safe activity will be given before you leave the department.

Can someone come with me?
If you need someone to bring you to the appointment they will not be able to stay with you during the treatment, but once your radioactivity has dropped to a safe level they will be able to take you home. Please do not bring anyone who is pregnant or under 18.
What is the nuclear medicine scan?
The scan shows the position of any radioactivity in your body and it helps to measure the progress of the treatment. For the scan to be performed it is necessary for you to lie on a flat surface while the scanner takes pictures of you from above and below.

Are there any restrictions when I get home?
Before you go home you will be seen by the physicist and any restrictions will be explained. You may need to take some time off work and avoid public transport and places of entertainment. You will probably be asked to avoid close contact with other people, particularly children, for a few days. The details will be given to you on your yellow card (the yellow card is issued with the exact details of radioactivity levels and instructions on what the restrictions are for the patients when they are at home).

Wash any clothing, flannels or towels used during the first few days after your treatment separately from the rest of the family’s laundry. This is only necessary for the first wash.

What may I eat before my radioactive iodine treatment?
A diet that is rich in iodine can reduce the effectiveness of the treatment. Therefore, two weeks before you come into hospital we recommend that you follow the Low Iodine Diet guidelines and advice below:

**Low Iodine Diet**

<table>
<thead>
<tr>
<th>Low iodine foods you can eat freely</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔ Fresh/frozen fruit</td>
</tr>
<tr>
<td>✔ Fresh/frozen vegetables</td>
</tr>
<tr>
<td>✔ Cooked green vegetables</td>
</tr>
<tr>
<td>✔ Fresh/frozen meat</td>
</tr>
<tr>
<td>✔ Ordinary table salt and sea salt</td>
</tr>
<tr>
<td>✔ Rice</td>
</tr>
<tr>
<td>✔ Dried pasta</td>
</tr>
<tr>
<td>✔ Potatoes</td>
</tr>
<tr>
<td>✔ Fresh bread</td>
</tr>
<tr>
<td>✔ Non dairy spread such as Vitalite or Pure or Flora non-dairy</td>
</tr>
<tr>
<td>✔ Olive oil, vegetable oils and nut oils</td>
</tr>
<tr>
<td>✔ Water, soft drinks, fruit juices &amp; alcoholic drinks</td>
</tr>
<tr>
<td>✔ Tea without milk</td>
</tr>
<tr>
<td>✔ Coffee without milk</td>
</tr>
<tr>
<td>✔ Milk substitutes such as rice, coconut, almond or soya milk (please check labels for ingredients and avoid brands that contain carrageenan which is a seaweed derivative)</td>
</tr>
<tr>
<td>✔ Dark/plain chocolate with a minimum of 70% cocoa</td>
</tr>
<tr>
<td>✔ Crisps</td>
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</tbody>
</table>
Foods which should be limited

- Milk - a maximum of 25ml per day which could be used in tea and coffee (i.e. about 5-7 teaspoons of milk per day)
- Butter - limit to a very thin scraping (one teaspoon or 5g) per day
- Cheese - one ounce or 25g once per week
- Egg - one per week

High iodine foods which should be avoided

- Fish, seafood, seaweed, kelp, laver bread
- Dairy produce such as milk, butter, margarine, cheese, yoghurt, ice-cream etc
- Egg and foods that contain egg yolk – for example custard, mayonnaise, fresh egg pasta, egg fried rice
- Milky coffee and tea, cappuccino, hot chocolate, malted milk drinks
- Cakes and biscuits containing butter and eggs
- Milk chocolate and white chocolate
- Dried fruit
- Take away- meals and fast foods/restaurant foods (as ingredients are unknown)
- Iodised salt and Pink Himalayan salt if imported/bought outside the UK
- Vitamins and mineral supplements, nutritional supplements and cough mixtures (unless prescribed by your medical team, for example vitamin D)

Meal suggestions

**Breakfast**
- Toast with non-dairy spread and marmalade, jam, honey, marmite
- Porridge made with water or milk substitute, topped with fruit, honey or syrup
- Fresh fruit or fruit salad or Grapefruit cocktail
- Cooked breakfast (without eggs) such as bacon, sausages, tomatoes, mushrooms, hash browns, baked beans, toast

**Lunch**
- Sandwich made with non-dairy spread filled with ham, chicken, bacon or quorn and salad
- Salad (such as cucumber, lettuce, tomato, avocado, sweetcorn, peas) with olive oil and vinegar (no raw spinach or broccoli) topped with chicken breast
- Jacket potato (without butter) with baked beans or chilli con carne
- Beans or tinned tomatoes on toast
- Soup (without cream, butter or milk) with bread
- Couscous with meat, chicken or chickpeas and vegetables such as roasted peppers, courgettes, tomatoes
Dinner
- Spaghetti Bolognese
- Pork or lamb chops with potatoes and vegetables
- Steak served with roasted mushrooms, grilled tomatoes, chips or jacket potato
- Roasted meat, vegetables and roasted potatoes with gravy
- Chicken, meat, Quorn or tofu stir fry with vegetables and rice
- Stewed meat (chicken, beef, lamb or pork) with potatoes, carrots and swede
- Chilli con carne with rice and peas
- Jacket potato (without butter) with baked beans, ham or chicken and salad
- Sweet and sour chicken with rice
- Risotto (without cheese) with chicken, butternut squash, peas and sweetcorn

Snacks & Puddings
- Tinned or fresh fruit, stewed or poached fruit
- Jelly
- Soya dessert or soya yoghurt
- Dairy free custard or single cream alternative
- Sorbet
- Meringue
- Vegetable crudities and homemade avocado dip (guacamole) or soya plain yoghurt & mint sauce
- Nuts (maximum 30g/1oz per day)
- Sweet or salted popcorn
- Potato crisps or rice cakes
- Dark chocolate

Will I have to come back for another treatment?
Your course of treatment depends on your individual case, however further treatment is rarely required. Your hospital doctor will discuss this with you when you return to the outpatient clinic. This attendance is usually about six weeks after your radioiodine dose and occasionally earlier if your doctor wishes to monitor your medication.

Where can I get help?
Contact numbers are listed below for you to call if you still have unanswered questions or problems with regard to your disease or treatment. You can also contact us if you experience any unexpected problems or side effects.

If you think of a question write it down in the space given below when it occurs to you and have the list to hand when you visit the clinic or call it.

If you are planning to travel abroad shortly after radioactive iodine treatment please discuss this with your consultant.
Contact numbers:

Thyroid specialist nurse – Inge Harrison
Monday, Tuesday, Wednesday: 01223 348796

Nuclear medicine physics team: 01223 217139

Ward A5 – Weekends/Emergencies: 01223 216312

Thyroid Secretary – Sally Ginn:
Mon-Thurs: 01223 596182

We are now a smoke-free site: smoking will not be allowed anywhere on the hospital site. For advice and support in quitting, contact your GP or the free NHS stop smoking helpline on 0800 169 0 169.

Other formats:

If you would like this information in another language, large print or audio, please ask the department where you are being treated, to contact the patient information team: patient.information@addenbrookes.nhs.uk.

Please note: We do not currently hold many leaflets in other languages; written translation requests are funded and agreed by the department who has authored the leaflet.

Document history

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