



INFORMATION ABOUT YOUR **Nuclear Medicine Therapy**

Here are answers to some of the questions you may have when your doctor suggests you have nuclear medicine therapy.

The nuclear medicine service will give you more detailed information about the treatment you are to have.



Australasian Association of

**NUCLEAR MEDICINE
SPECIALISTS**

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● What is nuclear medicine therapy?

Radioactive materials can be used to treat some medical conditions. This is called nuclear medicine therapy.

Nuclear medicine therapy is most commonly used to treat an overactive thyroid gland and thyroid cancer. The radioactive material used for these treatments is Iodine-131, commonly called radioiodine. Other radioactive materials are used to treat some types of arthritis and some other types of cancer, and to relieve the pain from cancer that has spread to bone.

● What is radiation?

Radiation is a type of energy that exists in our environment in many forms. It comes from both natural sources (such as the warmth and light from the sun) and man-made sources (such as microwave radiation for cooking food).

Ionising radiation is a higher energy form of radiation that comes from both natural and man-made sources. It comes from the sun, the earth, the air and our food and drink, and from building materials such as bricks. This is the natural background radiation to which everyone is exposed. Nuclear medicine therapy uses ionising radiation, as do x-rays.

● How does nuclear medicine therapy work?

Cancer cells and some other cells affected by disease are more sensitive to radiation than normal cells. The radiopharmaceutical kills cancer cells and it can help to control inflammation in the joints of people with arthritis.

The radiopharmaceutical gets to the cells to be treated in different ways for different parts of the body. For example, radioiodine is swallowed in a capsule or liquid form. It passes into the blood and then is concentrated from the blood by the thyroid gland, where it begins to act on the gland's cells.

● Is nuclear medicine therapy safe?

Yes, nuclear medicine therapy is very safe. Any risk to you from the radioactivity is very small compared with the benefit you are expected to get from this treatment. Any radioactive material not taken up by the part of the body being treated will leave your body, usually in your urine, faeces, sweat or saliva. Mostly, this occurs over one to two weeks but can take longer depending on the type of therapy. Also, these radioactive materials soon lose their radioactivity.

The small amount of radiation from this treatment will benefit you, but not other people. Therefore, you will need to take some safety measures to keep the radiation dose to other people as low as possible. The safety measures you should take are explained below.

● What are the benefits of nuclear medicine therapy?

Nuclear medicine therapy is an effective and safe treatment for certain conditions. Your specialist will discuss treatment choices with you.

If you are **pregnant** or think you could be pregnant, or you are **breastfeeding** it is very important that you tell your doctor and the nuclear medicine service staff before they give you the therapy dose. Many nuclear medicine services require all women of child-bearing age to have a pregnancy test within 24 hours before therapy unless they have had a surgical procedure to prevent pregnancy.

You must not become pregnant for at least six months after some types of therapy.

You should also tell the nuclear medicine service staff if you **have continence problems**.

● Will I have to stay in hospital?

This depends on why you are having nuclear medicine therapy. If you are being treated for thyroid problems, you will usually be treated as an outpatient and will not need to stay overnight in hospital. For some other types of therapy, you may have to stay in hospital for two or three days. This is not because of any risk to your health but to make sure radioactive materials are dealt with safely when they leave your body.

● Is any special preparation needed for nuclear medicine therapy?

There is some special preparation for most types of nuclear medicine therapy. For example, patients may need to stop taking medication for an overactive thyroid gland before nuclear medicine therapy. The nuclear medicine staff will tell you if any special preparation is needed for your treatment.

Please read the information given to you before your appointment. If there is anything you don't understand, the nuclear medicine staff will be happy to answer your questions.

● What does nuclear medicine therapy involve?

This depends on the type of therapy. The nuclear medicine service where you are to have your treatment will explain in detail what will happen. To give you some idea of what to expect, here are short descriptions of some of the more common types of therapy.

- To treat an **overactive thyroid gland or thyroid cancer**, the radioactive material (radioiodine) is swallowed in a capsule or liquid form. It is tasteless and has no smell. Patients are usually treated as outpatients and do not need to stay overnight in hospital. Only a single dose is usually needed, although sometimes more than one treatment may be needed.

- To treat **joint pain and some types of arthritis**, the radioactive material is injected into the joint fluid under local anaesthetic. Afterwards, the joint will be immobilised with a bandage and light splint. Patients may go home to rest but are sometimes asked to stay in hospital for a short time.
- To **relieve the pain from cancer that has spread to bone**, the radioactive material is injected into a vein in the arm. This feels like having a blood test. Patients are usually treated as outpatients and do not need to stay overnight in hospital. The pain may increase for a short time up to 10 days after treatment. This is managed by increasing painkillers until the pain decreases.

Pain relief from the treatment usually lasts for up to six months. If the pain comes back, the treatment may be repeated.

What safety measures should I take after nuclear medicine therapy?

The simple safety measures you should take and for how long depend on the type of therapy you have.

Some of the safety measures you may need to take - for as little as 24 hours to as long as 10 days - are briefly described below.

- Most of the radioactive material leaves the body in urine so it is important to have good toilet hygiene.
 - Wipe up any spilled urine with toilet paper and put the toilet paper in the toilet.
 - Flush the toilet twice after each use and wash your hands well after using the toilet.
 - Males should use a normal toilet rather than a urinal.
- Limit the time spent in close contact with people.
 - Avoid contact with pregnant women and small children.
 - A good guide is to stay more than one arm's length away from people.

- Sleep in a single bed if possible.
- Avoid unnecessary trips on public transport and attending public functions. You could be sitting next to a pregnant woman.
- Do not go to work if this involves prolonged contact with people.
- Wash your hands well before preparing food and use single-use disposable gloves during food preparation.
- Use disposable eating utensils or wash your utensils separately.
- Wash any bed linen, towels or clothes that are soiled with urine or blood at once and separately. Wash your bed linen, towels and clothes at home, separately. No special cleaning of the washing machine is needed between loads.

Before you leave, the nuclear medicine staff will explain in more detail the safety measures needed for the type of therapy you are to have and for how long after the therapy you need to take special precautions.

Are there any side effects?

Side-effects can occur after nuclear medicine therapy. Usually these are minor. Your specialist will discuss in detail what other complications could occur in your case and explain things you can do to reduce or avoid side effects.

Do not be afraid to ask questions.

The nuclear medicine staff will be happy to answer your questions before or during your treatment, or after you have gone home.

If you would like more detailed information on your treatment, please talk to your doctor or nuclear medicine specialist.