

Patient information factsheet

Lutetium-177 prostate specific membrane antigen (PSMA) therapy

We have given you this factsheet because we believe you may benefit from an innovative prostate cancer treatment called Lutetium-177 prostate specific membrane antigen (PSMA) therapy. It explains what Lutetium-177 PSMA therapy is, what the therapy involves, and what the possible benefits and risks are. We hope it will help to answer some of the questions you may have. If you have any further questions or concerns, please contact us using the details at the end of this factsheet.

Before agreeing to the therapy, you will have a consultation with a specialist doctor and nurse, where you will have the opportunity to ask any questions you may have.

What is Lutetium-177 prostate specific membrane antigen (PSMA) therapy?

Lutetium-177 PSMA therapy is an innovative molecular therapy used to treat advanced prostate cancer, also known as metastatic prostate cancer (cancer that has spread from the prostate to other parts of the body).

How does Lutetium-177 PSMA therapy work?

PSMA is a unique receptor found on the surface of many prostate cancer cells (tumour cells). If the prostate cancer spreads to other parts of the body, the PSMA will also be found in those areas.

PSMA therapy works by specifically targeting these receptors with Lutetium-177 (a radioactive substance). When injected into the bloodstream, Lutetium-177 travels to the areas of the body where PSMA is present and emits radiation that destroys the cancer cells. By delivering a high, localised radiation dose to cancer cells, PSMA therapy minimises the damage to surrounding healthy cells.

What are the benefits of Lutetium-177 PSMA therapy?

Clinical trials of Lutetium-177 PSMA therapy have shown that if successful, it can help to improve a person's:

- chance of survival
- radiographic progression-free survival (the length of time during and after the treatment of a disease, such as cancer, that a person lives with the disease but it does not get worse)
- cancer-related symptoms
- quality of life

Why might I need this therapy?

We may offer you this therapy if:

- your blood tests and scans show that your cancer is progressing
- other cancer treatments haven't been successful
- you are experiencing cancer-related pain in your bones

Who has made the decision that PSMA therapy may be appropriate for me?

Your oncologist has discussed your case with us and we have decided that this therapy may be appropriate for you. We will invite you to a clinic appointment so we can discuss the therapy with you in more detail. We will only proceed with the therapy with your consent. We will give you time to decide and discuss with your family and friends, if you so wish. We will never begin therapy at this first clinic appointment, so please don't worry about making an immediate decision.

Who will administer the therapy?

The therapy will be administered by a nuclear medicine doctor and a specialist nurse or radiographer.

Where will the therapy take place?

The therapy will take place in the department of nuclear medicine at Southampton General Hospital. We are located on D level, centre block.

How should I prepare for the therapy?

The therapy is usually done as a day case, so you will not need to stay in hospital overnight.

Please make sure you have had something to eat and drink before your appointment.

We will provide you with drinks (hot and cold) and a sandwich during your appointment, but you are welcome to bring your own refreshments with you if you prefer.

We recommend bringing something with you, such as a book or a laptop, to help occupy you while you wait after receiving the therapy.

What will happen during the therapy?

When you arrive for your appointment, we will first go through a checklist with you. We will then talk through the therapy with you and answer any questions you may have. If you are happy to proceed, we will ask you to sign a consent form.

We will begin the therapy by inserting a cannula (a thin plastic tube) into a vein in your arm or hand. Once this is in place, we will inject the Lutetium-177 PSMA therapy through the cannula into your bloodstream. This process only takes a few minutes. We will then flush and remove the cannula.

We will then ask you to remain in the room alone for approximately four to six hours. The reason for this isolation period is because Lutetium-177 PSMA therapy introduces high levels of radiation into the body. This means you will temporarily be radioactive after receiving the therapy. To protect others from unnecessary radiation exposure, we will ask you to stay in the room until your radioactive levels have dropped to a safe level. To help us work out when you are safe to go home, we will use a special monitor to regularly measure your radiation levels. During the isolation period, you will be free to eat, drink and move about. There is a shared toilet in the nuclear medicine corridor that you will be able to use during this period.

What will happen after the therapy?

Going home

Once your radioactive levels have dropped to a safe level, you will be able to go home (usually late afternoon). Unfortunately, we cannot predict how long this will take, as it differs for each person.

Due to the radioactive nature of the therapy, you will not be able to have a relative or friend stay with you during your appointment. Please arrange for someone to pick you up after your treatment. We can always arrange to contact them on your behalf when we know an approximate time.

Having a scan

We may need to take one or more scans of your body to look at the uptake of the Lutetium-177 into the cancer cells the day after your therapy. We will confirm whether this is necessary during your appointment. If it is, we will provide you with more information about this. The scan will be similar to a CT or PET scan and you will not need to undress for the scan.

Because we are a university hospital, we may share your scan images (with all personal details removed) with other medical teams, or use them for research or service evaluation. Please let us know if you do not want your images to be shared.

Are there any risks or side effects?

Lutetium-177 PSMA therapy is generally well tolerated by most people. However, as with any medical treatment, there are some possible risks and side effects.

The most common side effects are:

- a slightly dry mouth
- loss of appetite
- nausea (feeling sick)
- fatigue (extreme tiredness)

You may also experience a slight fall in your blood count in the first few weeks after the Lutetium-177 PSMA therapy. All of these side effects are usually temporary and will resolve without additional treatment.

The radiation from the therapy can cause some damage to your healthy cells. There is a risk that this damage may develop into cancer in the future. However, we believe the potential benefit from the therapy outweighs the risk from the radiation.

We will discuss all possible side effects, as well as the risks and benefits, with you during your consultation.

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Exposure to radiation

A small amount of radiation will remain in your body for a few days after receiving the therapy. You will be safe to go home, but you must follow the written instructions we give you when you leave hospital. These instructions contain important information about:

- minimising contact with other members of your household (particularly children and pregnant women)
- hand washing and bathroom hygiene (you will naturally excrete some radiation in your urine and faeces (poo))

If any of the instructions are going to be a problem for you, or if you live with children or someone who is pregnant, please talk to the doctor or nurse when they see you at the clinic, or contact us on **023 8120 6627**.

Follow-up care

We will discuss future cycles of treatment with you before you go home. Most people will have up to six cycles of treatment (approximately six to eight weeks apart). The number of cycles and duration between each cycle will depend on:

- your general fitness
- the severity of your condition
- whether you experience any treatment-related side effects
- whether you have received other prostate cancer therapies previously

We will contact you approximately ten days before your next cycle of treatment is due to confirm the date and check that you are well enough to receive treatment.

You will need to have a blood test after each cycle of therapy. We will give you the relevant forms before you leave hospital.

Contact us

If you have any questions or concerns, please contact us.

Nuclear medicine team

Telephone: **023 8120 6627** or **023 8120 6873** (Monday to Friday, 9am to 5pm)

If you are a patient at one of our hospitals and need this document translated, or in another format such as easy read, large print, Braille or audio, please telephone **0800 484 0135** or email **patientsupporthub@uhs.nhs.uk**

For help preparing for your visit, arranging an interpreter or accessing the hospital, please visit **www.uhs.nhs.uk/additionalsupport**

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