

Lu-177 PSMA – Radioisotope Therapy

What is Lu-177 PSMA treatment?

Lu-177 PSMA treatment is a radioactive substance that can be given as an injection. The radiation is provided by radioactive Lutetium (Lu-177, the key tag), this is attached to specific molecules called PSMA (the key). The key targets receptors on the cancer cells (the locks). Once the key and key tag containing the radiation attaches to the lock, it gets taken into the cell and delivers the radiation directly to the cancer cell.

Before we can treat?

The doctor will assess your prior medical history including the treatment you have received for prostate cancer. They will also need some up-to-date blood tests to ensure your body will tolerate the radiation. In addition, the doctor will want to confirm that there are no issues regarding the radiation risks to you or people around you. They will want to know who you live with, whether you work, and whether you have any issues regarding your mobility, caring for yourself or toileting. Our radiation physics team will also speak to you to ascertain some of this information. Finally, the doctor will want to confirm that your disease has the required PSMA receptors (the locks) for the treatment to target. This is done with a PSMA PET-CT and needs to be done ideally within 3 months of commencing treatment.

How is Lu-177 PSMA treatment given?

The therapy is usually given as a day case in a dedicated room. Each cycle is administered via an intravenous infusion along with some fluids. We also give you some anti-sickness and steroids to help reduce any side-effects. After the treatment has been given, you will need to remain in isolation. Nursing staff will be available, but you will be expected to be self-caring.

Are there any side effects?

There are some short-term and long-term risks. In addition to the disease sites, there are several normal areas of the body that also show PSMA receptors and may cause some mild side effects. These include the bowel (possibly causing some mild nausea on the day of treatment) and salivary glands (possibly causing a dry mouth and occasionally very mild facial pain in the day or so after treatment). Disease sites can also swell due to the radiation exposure (called a “flare”) and can also cause some discomfort. This is in particular for disease in the bones. Steroids are given with the treatment and for a few days after to reduce the risk of this tumour “flare” and to reduce the risk of facial pain. Anti-sickness is also given with the treatment and for a few days after. More long-term risks are related to the potential accumulation of radiation. Radiation to the kidney may cause potential damage, if you are dehydrated or if there is any kidney blockage. Radiation levels can also cause potential damage to the bone marrow, that produces the cells that carry oxygen and fight infection. Both are monitored using standard blood tests before and after each treatment.



Will I be radioactive?

Yes, for a short while. The type of radiation used in this treatment means you will be safe to go home once you have been checked by the physics team. The radioactivity in the tumour will last for some time in order to produce the maximum effect on the tumour cells but does not pose a risk to leave hospital.

Will I have to stay in hospital?

No, a few hours after the treatment, our physics team will confirm the radiation levels in you by taking some measurements in the room. Assuming your radiation levels are safe, and you are well, you will be discharged by our therapy and physics teams. This will be discussed on an individual basis, as everybody has different home circumstances.

Will there be any scans?

A few hours after the treatment, assuming your radiation levels are safe, you will attend the Nuclear Medicine Department to undertake an “uptake scan” where the radiation distribution within you, is assessed.

How many treatments will I need?

Lu-177 PSMA treatment is usually given in 6 treatments, 6-8 weeks apart. This will be discussed on an individual basis.

Following treatment

Following each treatment cycle, we will ask you to have blood tests every 2 weeks to monitor your PSA levels, urinary and marrow function. Please note your PSA levels may fluctuate slightly whilst on treatment, following the first one or two cycles. Our therapy team will also be in touch to check you are not developing any concerning side effects. Along with the blood tests, we also undertake a PSMA PET-CT after 2, 4 and 6 treatment doses followed by a consultation with the doctor. This will give us an opportunity to assess how your disease may be responding to the treatment.

Contact details

You should have been seen by a clinician and or a nurse before receiving targeted radionuclide therapy. They will provide you with their individual contact details. If you have any queries or further questions, please contact us (Monday-Friday, 09:00 – 17:00):

Sutton: 020 8661 3798 / 3286
Chelsea: 020 7811 8541

Alternatively, please contact:

The Royal Marsden Hotline: 020 8915 6899
(available 24 hours a day, 7 days a week)

Should you require information in an alternative format, please contact The Royal Marsden Help Centre.

