



Peptide Receptor Radionuclide Therapy (PRRT)

What is PRRT?

PRRT (Peptide Receptor Radionuclide Therapy) is a treatment used for [neuroendocrine tumors \(NETs\)](#). This treatment uses a radiopeptide which is a medication called [octreotide \(a type of peptide or protein\)](#) and a small amount of a radioactive material (called a radionuclide).

How does PRRT work?

Most NETs have receptors on their cells for a hormone called somatostatin. Octreotide is a manmade version of somatostatin, which is attracted to these receptors on the NETs. In PRRT, the octreotide has a radionuclide attached to it. This lets the octreotide bring the radiation right to the tumor, and not to healthy tissues. This [targeted therapy](#) limits the radiation exposure to healthy tissue and often has fewer side effects than chemotherapy medications. [Lutetium 177 \(Lu-177\)](#) is the most used radionuclide.

Tell your healthcare team if you are pregnant or plan to become pregnant, as radionuclides can be harmful to an unborn baby.

What happens during PRRT?

This depends on the center doing your treatment and the radionuclide being used. PRRT is usually given in four treatments every two months over eight months. The steps of treatment are:

- You will have an intravenous (IV, into a vein) line placed in your hand or arm or your central line will be used.
- You are given medication to prevent or lessen nausea and vomiting.
- You are given amino acids through your IV. This is to protect your kidneys from being damaged by the radiation.
- The radiopeptide is then given through your IV, followed by more of the amino acid solution. After treatment, your IV will be taken out. Treatment takes about 4-6 hours.

Whether or not you stay overnight in the hospital depends on the local regulations/laws and which radionuclide was used.

What happens after PRRT?

Some radiation stays in your body for a few days, and you will be taught how to keep family members safe at home. You may be told to:

- Stay a safe distance from other people.
- Sleep in a room by yourself.
- Practice safe bathroom use (the radiation is excreted in urine and stool).
- Restrict your travel and work.

Your care team will talk with you and your caregivers about any special precautions you might need to take.

What are the side effects of PRRT?

The most common side effects of PRRT are:

- [Fatigue](#).
- [Nausea and vomiting](#). The amino acid infusion can cause nausea and vomiting. Medications will be given to lessen this side effect.
- [Low blood counts](#). This often happens a month or more after treatment.
- High levels of blood sugar.
- Kidney or liver damage. This is rare.
- Secondary cancer. This is cancer that happens later in life and is caused by treatment for an original cancer.

Talk to your provider about your side effects. Most side effects can be managed. Your blood counts and labs will be monitored to see how your body is responding to the treatment.

Resources for More Information

[What Is Peptide Receptor Radionuclide Therapy \(PRRT\)?](#) Fact sheet from the Society of Nuclear Medicine and Molecular Imaging

[Carcinoid Cancer Foundation](#)

[Lutathera® Patient Support](#)

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