

Radiation/Nuclear Emergency: How to Use Neupogen® (Filgrastim) Daily for Neutropenia

Emergency Use Instructions for Recipients

The US Centers for Disease Control and Prevention (CDC) has issued Emergency Use Instructions to provide key information about Neupogen and how to use this medicine during this emergency.

You may have been exposed to radiation. Large amounts of certain types of radiation can be deadly. A medicine called **Neupogen** (*new-po-jen*) can help people exposed to large amounts of radiation.

Neupogen may not help everyone exposed to radiation. If you have been exposed to a very small or very, very large amount of radiation, Neupogen treatment will not help. A blood test can help doctors know if you have been exposed to large amount of radiation to determine if Neupogen treatment is right for you. If you have questions about Neupogen, ask a doctor or public health official.

What does radiation do to the body?

When large amounts of radiation pass through your body, the cells in your bone marrow are killed. The cells in your bone marrow make the platelets, red blood cells, and white blood cells your body needs to stay healthy. Platelets help your blood to clot. Red blood cells carry oxygen. White blood cells fight germs. Without enough white blood cells, you are more likely to get a bad infection that can kill you.

What is Neupogen?

If your body does not have enough platelets or red blood cells, doctors can give you more. Doctors call that a transfusion. But doctors cannot give you a transfusion of white blood cells. Instead, they can give you a prescription medicine called Neupogen or also known as filgrastim. This medicine gets your bone marrow to make more neutrophils (*new-troh-fills*). Neutrophils are one kind of white blood cell that fight infection. When a person does not have enough neutrophils in their body, doctors call this neutropenia (*new-troh-peen-yuh*).

Neupogen is not a new medicine. For many years, doctors have given Neupogen to cancer patients who do not have enough neutrophils. In March 2015, the U.S. Food and Drug Administration (FDA) approved the use of Neupogen to also treat people exposed to large amounts of radiation from a radiation/nuclear incident.

Who should **NOT** take Neupogen?

Do not take Neupogen if you have ever had a severe allergic reaction to it. A swollen tongue, your throat closing off, or trouble breathing after taking medicine are all examples of severe allergic reactions. Neulasta (*new-last-uh*), also known as pegfilgrastim, is a drug similar to Neupogen but stays in your body longer. If you have ever had a severe allergic reaction to Neulasta, then you should also not take Neupogen.

Before you get Neupogen, tell the medical staff if you:

- Have sickle cell disorder (disease or sickle cell trait). Sickle cell crises leading to death has been reported after receiving Neupogen.
- Have allergies to latex (the needle cap on the Neupogen prefilled syringes contain dry natural rubber)
- Have or had cancer in the past
- Have or had a history of severe chronic neutropenia
- Have kidney problems
- Are pregnant (or think you might be pregnant) or nursing. It is not known if Neupogen can harm a developing baby. It can be found in breastmilk but in very small amounts. CDC recommends that you still receive Neupogen as the benefits outweigh these risks to you and your baby.

How do I get Neupogen?

Medical staff will give you the first dose of Neupogen. Neupogen is given as a shot under your skin once a day, at a dose of either 5 or 10 micrograms per kilogram based on your body weight. After you get your first shot, you need to wait for about half an hour to make sure you don't have an allergic reaction. After that, you will get a shot of Neupogen once a day for several days until your next follow-up visit. If medical staff determines that self-administration is right for you, you may receive instructions on how to give Neupogen to yourself.

At the follow-up visit, staff will draw blood every few days to see if Neupogen is working for you. If it is, your body will start making enough neutrophils to fight infections.



If your neutrophil counts stay low, you may need daily Neupogen shots for a couple of weeks.

What are common side effects of Neupogen?

Common side effects from Neupogen are bone and muscle aches, fever, diarrhea, skin rash, and weakness. Some people get redness, swelling, or itching where they get their shot. Just because you get a common side effect from Neupogen does not mean you have to stop getting the shots. If these symptoms become bothersome or worsen, then contact your doctor.

What are possible serious side effects of Neupogen?

Serious side effects from Neupogen include the following:

- Closing of the throat, trouble breathing, or wheezing
- Swelling of the tongue/face, hands, or feet/ankles
- Severe itching or rash, especially hives and wheals
- Shortness of breath with or without fever or fast rate of breathing
- Severe abdominal pain and left shoulder pain
- Unusual bleeding and bruising
- Dark colored urine or blood in your urine
- Purple spots or redness of your skin

If you have any of these serious side effects then **STOP** Neupogen and get medical help right away (go to the nearest emergency room or call 911).

What if I don't want to take Neupogen?

When your white blood cell count goes low, your chances of getting a serious infection go up. And the lower your white blood cell count, the better are your chances of getting that serious infection. If you were exposed to a large amount of radiation, there is a very likely that your white blood cell count will become very low. Doctors recommends Neupogen as one of the best ways to treat a very low white blood cell count.

Whether to get Neupogen treatment is your choice. It is possible for you to still get a serious infection even if you get Neupogen treatment. However, getting Neupogen treatment can help lower the risk of getting a serious infection.

What are my other choices for treatment?

If you don't want to take Neupogen, there are other medicines that work the same way such as Neulasta and Leukine (*lew-kine*). They get the bone marrow to make more white blood cells to fight off infection and are also given as a shot under your skin.

Risk-Benefit Statement

Neupogen can help prevent serious infections by helping your body to make more neutrophils to fight infections. The benefits of Neupogen outweigh the risk of side effects caused by this medicine when you have been exposed to large amounts of radiation.

A federal program called the [Countermeasures Injury Compensation Program \(CICP\)](#) may help pay for costs of medical care and other specific expenses of certain people who have been seriously injured by certain medicines or vaccines. To learn more about this program, visit <http://www.hrsa.gov/cicp> or call toll-free: 1-855-266-2427.

How do I report side effects or medication errors?

Tell your doctor right away if you have side effects that are bothersome or that do not go away. Report side effects or medication errors to FDA through [MedWatch](#) at www.fda.gov/medwatch or 1-800-FDA-1088.

How can I learn more about Neupogen?

Visit [CDC's radiation webpage \(https://emergency.cdc.gov/radiation\)](https://emergency.cdc.gov/radiation) and [Neupogen webpage \(http://www.neupogen.com/\)](http://www.neupogen.com/)

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