

Nivolumab

Names	The generic drug name is nivolumab (nye vol' ue mab). Opdivo® is a brand name. There may be other names for this medication.
How is it Administered?	This medication is given by infusion into a vein (intravenous or IV), usually once every 2 weeks. A typical infusion lasts 1 hour.
Why am I Receiving Nivolumab?	Nivolumab is used to treat some types of advanced cancers such as melanoma, squamous non-small cell lung cancer (NSCLC), renal cell (kidney) cancer, Hodgkin lymphoma, squamous cell cancer of head and neck, and bladder cancer. This treatment is usually given after other types of therapy were unsuccessful and/or surgery is not possible.
How Does it Work?	Nivolumab is a type of immunotherapy. Specifically, it is a monoclonal antibody. Immunotherapy drugs work with your immune system to fight cancer. Unlike other therapy types, which kill or slow cancer cells to shrink tumors, immunotherapy gives your immune system a boost. The goal is to increase your body's ability to produce certain disease-fighting blood cells that attack the cancer cells.
What Should I Tell My Doctor Before I Begin Nivolumab?	<p>Tell your doctor if you have:</p> <ul style="list-style-type: none">• have ever had an allergic reaction to nivolumab or if you have other allergies• have, or have ever had, an organ transplant or an autoimmune disease such as Crohn's disease, ulcerative colitis, lupus, rheumatoid arthritis etc.• taking medication that suppresses your immune system (methotrexate, adalimumab /Humira®, or steroids like prednisone or dexamethasone)• have lung or breathing problems, liver problems, kidney problems, heart problems, or a condition that affects your nervous system, such as myasthenia gravis or Guillain-Barre syndrome• are being treated for an infection or have an infection that won't go away or that keeps coming back• are pregnant, plan on becoming pregnant, or breastfeeding• are taking any prescription or over-the-counter medications, vitamins, or supplements not on your medication list

This drug may interact with other medications. Tell your doctor and pharmacist about all prescription or over-the-counter medications, vitamins, herbal or diet supplements that you take.

What Are Some Possible Side Effects?

- Fatigue
- Low white blood cell count (raises your risk of getting an infection)
- Shortness of breath
- Muscle, joint, or bone pain
- Decreased appetite (more common), nausea (less common)
- Cough
- Diarrhea, constipation
- Rash
- Fever

How Can I Manage These Side Effects?

- Drink 2-3 quarts of fluids every day, particularly water, unless your doctor has restricted your fluids.
- **Fatigue:** Stay as active as possible, but know it is okay to rest as needed. Find a balance between work and rest. Plan your activities, and do important things at a time of day when you feel like you have more energy. Avoid operating heavy machinery if you feel too tired. Eat well and stay out of bed as much as possible during your treatment to stay strong.
- **Low white blood cell count:** To lower your risk of infection, wash your hands often, avoid anyone who is sick, do not eat raw meat or fish, wash fruits and vegetables, and talk to your doctor before you have any vaccinations.
- **Muscle aches and pains: Ask your doctor before using any over-the-counter or herbal products for any symptom.**
- **Loss of appetite/Nausea:** Eat small meals more frequently. Avoid greasy, fried, and spicy foods. Talk to your doctor about medication to prevent/lessen nausea.
- **Diarrhea** Use anti-diarrheal medicines such as loperamide (Imodium®). Loperamide (Imodium®) is available over the counter. Talk to your doctor about how much, and how often to take it. **Do not take more than 8 tablets (16mg) in a 24-hour period.** Call the clinic if this does not provide relief within 24 hours.
- **Constipation:** To help prevent constipation, add high fiber foods such as fruits, vegetables, and whole grains to your diet and, if possible, keep moving throughout the day. If you do not move your bowels in

2-3 days, you will need to take a laxative. A suggested laxative is Senna-S (contains senna plus docusate), which is available over the counter. If this is ineffective after 2 days, please notify the clinic.

- Avoid exposing your skin to the sun. Wear sun block with SPF 30+, long sleeve shirts, long pants, and a brimmed hat. If you get a rash, keep the area clean and dry. Check with your doctor before you put any creams, gels, or lotions on a rash or to soothe itching.
- Get plenty of rest
- To minimize mouth problems, rinse your mouth with a mixture of ½ teaspoon of baking soda in 8 ounces of water after every meal and at bedtime. Brush your teeth and gums with a soft toothbrush. (Soften it further by running it under warm water). Floss your teeth gently. Avoid smoking, alcohol, and mouthwashes that contain alcohol. Do not use any tobacco products.

When Should I
Call the Doctor?

Call 911 or go to the nearest hospital emergency department if you have:

- signs of a severe allergic reaction (anaphylaxis) : wheezing, chest tightness or pain, lightheadedness, palpitations (heart beating irregularly), nausea/vomiting, shortness of breath, or swelling of face, lips, tongue, or tongue

When Should I
Call the Doctor?

Call your doctor immediately if you have:

- any signs of infection: temperature of **100.4° F (38° C)** or higher, chills, sore throat, or frequent or burning urination
- signs of an allergic reaction: itching, rash, dizziness

Call your doctor as soon as possible if you have:

- nausea, vomiting, or persistent or unusual headache that does not respond to prescribed medication
- easy bruising or bleeding, extreme fatigue

What Else
Should I Know
About
Nivolumab?

- May cause visual changes, dizziness, and fatigue. Use caution when you are driving or in activities that require you to be alert.
- Do not get pregnant or father a child while on nivolumab and for a few months after you have stopped treatment. Nivolumab can harm the fetus. A barrier method of contraception is recommended, such as a condom. Talk to your doctor about when it is safe to have a child.
- Keep all your appointments with the lab and your doctor so we can monitor your liver, kidneys, and thyroid/pituitary glands.
- Your doctor may delay or stop your treatment, depending on your response to the medication and any side effects that you experience.

- Because nivolumab changes how your immune system works, contact your doctor right away if you have **signs of a serious immune-mediated reaction**, which are caused by inflammation of any organ system. Some examples are listed below.
 - **Intestinal problems** (colitis): Black or sticky stools or stools with blood or mucus, diarrhea or more bowel movements than usual, change in bowel habits, unexpected weight changes; or stomach pain or tenderness
 - **Liver problems** (hepatitis): Yellowing of the skin or eyes, nausea or vomiting, feeling less hungry than usual, pain on the right side of your stomach area, dark urine, and easy bruising or bleeding
 - **Lung problems** (pneumonitis): new or changing shortness of breath, new or worse cough, and chest pain
 - **Hormone/gland problems** (thyroid, pituitary, and adrenal glands): Fast heartbeat, weight loss, increase in sweating, weight gain, hair loss, feeling cold, constipation, deeper voice than usual, muscle aches, dizziness or fainting, headaches that will not go away or unusual headache
 - **Nervous system problems** (neuropathy, meningoencephalitis): Severe muscle weakness, changes in mood or behavior, numbness or tingling in hands or feet, extreme sensitivity to light, fever, neck stiffness, or confusion
 - **Rash**: Blistering, peeling skin; rash that causes an open wound;, or rash that covers more than 25% of your body
 - **Eye problems**: Blurry vision, double vision, eye pain or redness, or other vision problems
 - **Kidneys**: Symptoms: changes in the amount or color of your urine, blood in your urine, swelling in your ankles, loss of appetite
 - **Musculoskeletal problems**: Severe muscle or joint pains; severe muscle weakness
 - **Heart problems**: Elevation in troponin, EKG changes, fainting, confusion, dizziness.
- Nivolumab may cause abnormal blood test results such as elevated potassium levels and abnormal liver function tests (high AST, ALT, and alkaline phosphatase) and/or low sodium.
- If you would like more information about nivolumab, talk to your doctor or pharmacist.