

LOST TEMPLE FITNESS

IMMUNOTHERAPY

Information and pictures from *National Cancer Institute* unless otherwise specified

Quick Summary of Section

Immunotherapy

- Immunotherapy is a type of cancer treatment that helps your immune system fight cancer. The immune system helps your body fight infections and other diseases. It is made up of white blood cells and organs and tissues of the lymph system.

Types

- Several types of immunotherapy are used to treat cancer. These treatments can either help the immune system attack the cancer directly or stimulate the immune system in a more general way.

Side Effects

- The most common side effects are skin reactions at the needle site
- You may have flu- like symptoms

<p>Description</p>	<p>Immunotherapy is a type of cancer treatment that helps your immune system fight cancer. The immune system helps your body fight infections and other diseases. It is made up of white blood cells and organs and tissues of the lymph system.</p> <ul style="list-style-type: none"> • Immunotherapy is a type of biological therapy. Biological therapy is a type of treatment that uses substances made from living organisms to treat cancer. • One reason that cancer cells thrive is because they are able to hide from your immune system. Certain immunotherapies can mark cancer cells so it is easier for the immune system to find and destroy them. • Other immunotherapies boost your immune system to work better against cancer. <p>Different forms of immunotherapy may be given in different ways. These include:</p> <ul style="list-style-type: none"> • Intravenous (IV) - The immunotherapy goes directly into a vein. • Oral - The immunotherapy comes in pills or capsules that you swallow. • Topical - The immunotherapy comes in a cream that you rub onto your skin. This type of immunotherapy can be used for very early skin cancer. • Intravesical - The immunotherapy goes directly into the bladder.
<p>Types</p>	<p>Several types of immunotherapy are used to treat cancer. These treatments can either help the immune system attack the cancer directly or stimulate the immune system in a more general way.</p> <p>Types of immunotherapy that help the immune system act directly against the cancer include:</p> <ul style="list-style-type: none"> • Checkpoint inhibitors, which are drugs that help the immune system respond more strongly to a tumor. These drugs work by releasing “brakes” that keep T cells (a type of white blood cell and part of the immune system) from killing cancer cells. These drugs do not target the tumor directly. Instead, they interfere with the ability of cancer cells to avoid immune system attack. • Adoptive cell transfer, which is a treatment that attempts to boost the natural ability of your T cells to fight cancer. In this treatment, T cells are taken from your tumor. Then those that are most active against your cancer are grown in large batches in the lab.

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<p>Types <i>Continued</i></p>	<ul style="list-style-type: none">• Monoclonal antibodies, also known as therapeutic antibodies, which are immune system proteins created in the lab. These antibodies are designed to attach to specific targets found on cancer cells.<ul style="list-style-type: none">○ Some monoclonal antibodies mark cancer cells so that they will be better seen and destroyed by the immune system.○ Other monoclonal antibodies directly stop cancer cells from growing or cause them to self-destruct.○ Still others carry toxins to cancer cells.○ Because therapeutic monoclonal antibodies recognize specific proteins on cancer cells, they are also considered <i>targeted</i> therapies.• Treatment vaccines, which work against cancer by boosting your immune system's response to cancer cells. Treatment vaccines are different from the ones that help prevent disease. <p>Types of immunotherapy that enhance the body's immune response to fight the cancer include:</p> <ul style="list-style-type: none">• Cytokines, which are proteins made by your body's cells. They play important roles in the body's normal immune responses and also in the immune system's ability to respond to cancer. The two main types of cytokines used to treat cancer are called interferons and interleukins.• BCG, which stands for Bacillus Calmette-Guérin, is an immunotherapy that is used to treat bladder cancer. It is a weakened form of the bacteria that causes tuberculosis. When inserted directly into the bladder with a catheter, BCG causes an immune response against cancer cells.
<p>Side Effects</p>	<p>The most common side effects are skin reactions at the needle site. These side effects include:</p> <ul style="list-style-type: none">• Pain, Soreness• Swelling• Redness, Itchiness, Rash <p>You may have flu- like symptoms, which include:</p> <ul style="list-style-type: none">• Fever, Chills• Weakness, Dizziness• Nausea or vomiting• Muscle or joint aches• Fatigue• Headache• Trouble breathing• Low or high blood pressure <p>Other side effects might include:</p> <ul style="list-style-type: none">• Swelling and weight gain from retaining fluid• Heart palpitations• Sinus congestion• Diarrhea• Risk of infection• <i>White blood cell counts – Avoid public gyms unless blood cell count is above 500 mm3</i> (CETI: Cancer Exercise Training Institute https://www.thecancerspecialist.com/) <p><i>Immunotherapies rarely cause severe or even fatal allergic reactions.</i></p>