

Immune Checkpoint Inhibitors: A Guide for Cancer Patients

What does My Immune System Do?

To understand how Immune Checkpoint Inhibitors (CPIs) work, it helps to understand how your immune system works. Your immune system is your body's "defense system". It is made up of cells, tissues and organs that help defend the body from foreign things like infections (bacteria, viruses) and diseases, including cancer.

A very important type of immune system cell are the lymphocytes (a type of white blood cell). They help recognize when there is an "invader" and try to fight against it.

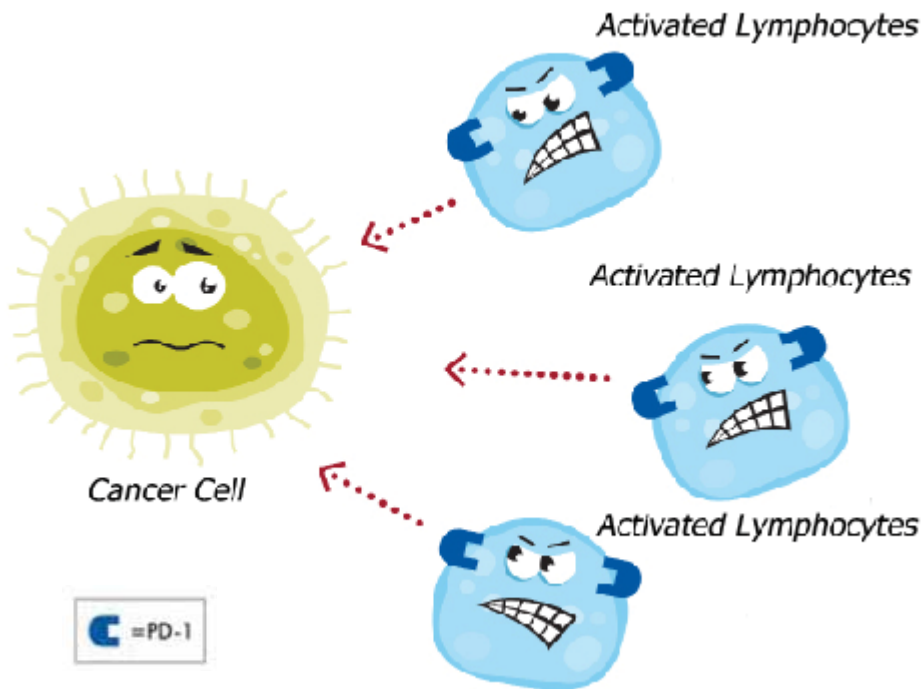


Image courtesy of LCRF

The lymphocytes recognize the cancer cell as something that should not be there and they become activated and try to destroy the cancer cell.

Cancer and Your Immune System

Many people with healthy immune systems still get cancer. Sometimes the immune system does not see the cancer cells as different enough from normal cells. Or, the immune system sees the cancer cells, but the response is too weak to destroy the cancer. Cancer cells can also produce things that fool the immune system.

For example:

- There are “off switches” located on cancer cells that can “blind” the immune system. This allows the cancer cells to grow and spread.
- These “off” switches are also called checkpoints.

Cancer cells sometimes find ways to use these checkpoints to avoid being attacked by the immune system.

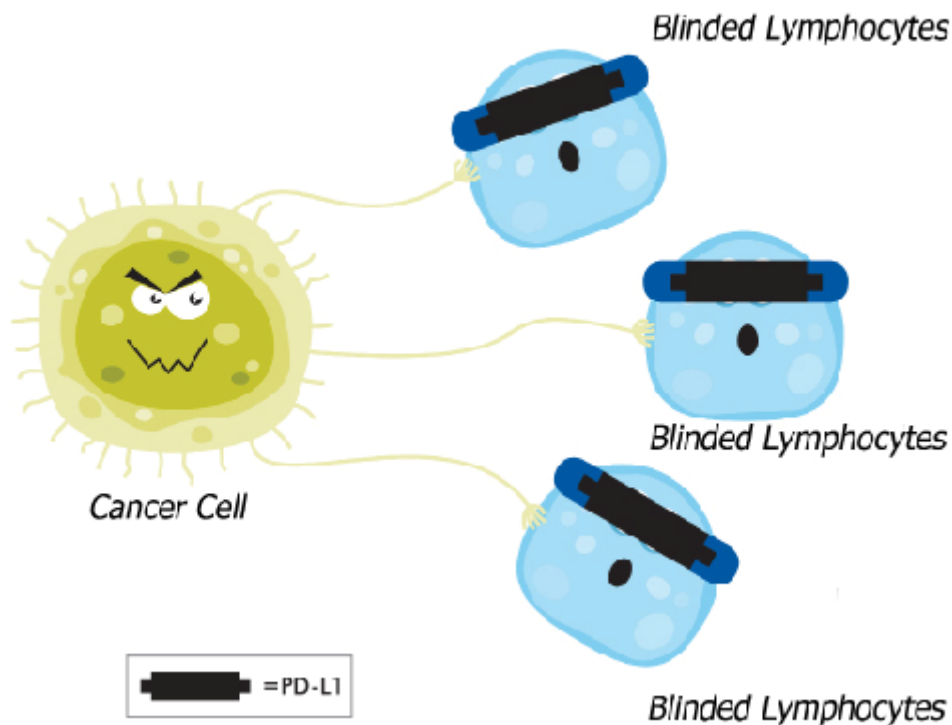


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Cancer cells can be smart and hide...

To stop this “blinding” of the lymphocytes, researchers have found ways to change these “off” switches in the immune system. When that happens, the lymphocytes can now recognize cancer cells and strengthen its response to destroy the cancer cells. To do this, these “checkpoints” are targeted. You may hear your cancer care team refer to some checkpoints by name. Some common examples include PD-L1, PD-1, and CTLA-4.

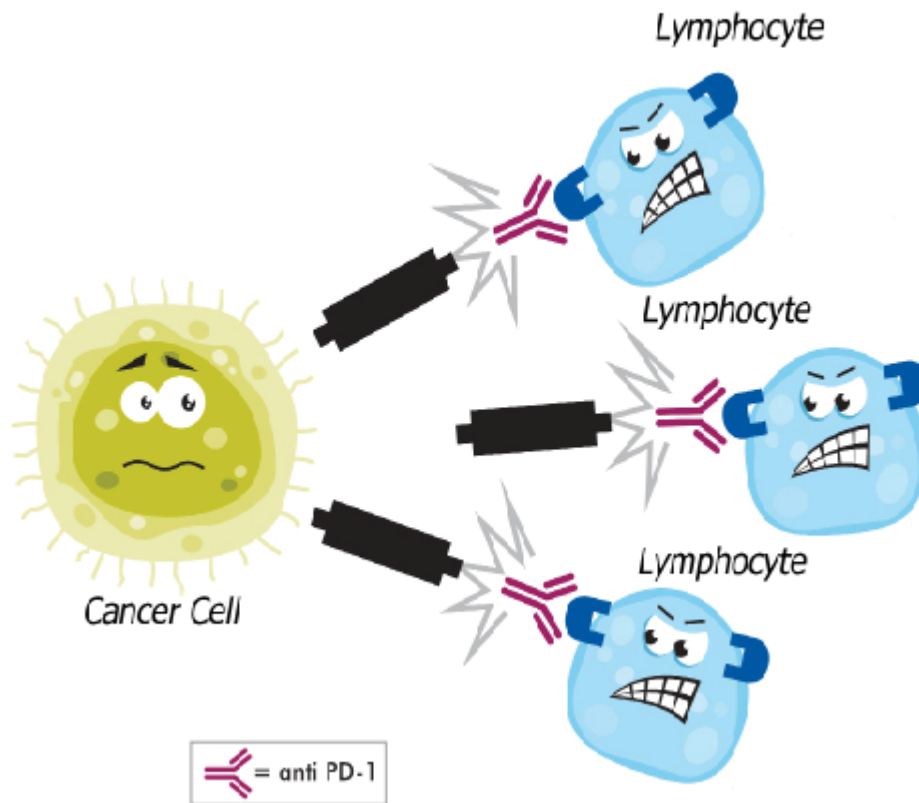


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...but this is how they fight back! Checkpoint inhibitors bind to the “off” switch so the immune system can attack the cancer cells.

What are Immune Checkpoint Inhibitors?

Immune checkpoint inhibitors (CPIs) (also called immunotherapy) are an important part of treating some types of cancer. They are given directly into a vein (IV) over 30 to 90 minutes. CPIs work by helping your own immune system to work harder or smarter to attack cancer cells.

For some cancers an CPI is used by itself. For others, it works better when used in combination with other CPIs or with other treatments like chemotherapy or oral targeted therapy.

Are Immune Checkpoint Inhibitors the Same as Chemotherapy?

No, CPIs are not the same as chemotherapy. Unlike chemotherapy, CPIs are not cytotoxic, meaning they do not directly kill the cancer cells. Chemotherapy causes side effects by also harming your healthy cells. The side effects from CPIs occur if the immune system is over activated. Because of this different way of working, the side effects are quite different than chemotherapy and are managed differently.

Immune Checkpoint Inhibitors Side Effects

When CPIs turn on the immune system to fight cancer, they can cause an over activation of the immune system that can impact any part of the body. These side effects are often mild but can be severe in some people. Your cancer care team will give you information specific to your treatment to help you know what to expect and how to manage side effects.

You will be given a [Self-Monitoring Guide](#) to help you watch for side effects at home. You will be asked about side effects before every treatment. It is very important to catch side effects early so let your cancer care team know if you notice any changes in your symptoms in between your treatments.

Orange Alert Card:

- If you notice any symptoms during business hours, call your cancer care team right away.
- If your symptoms are serious and it is after hours, go to the closest Emergency Department right away and give your Orange Alert Card to staff.
- This card alerts Emergency Staff that you are a cancer patient on an immune checkpoint inhibitor for cancer.

Although your care is a priority, you may still have to wait while other patients with more urgent concerns are treated.

These serious side effects may include:

- Severe nausea/vomiting
- Confusion
- Severe diarrhea
- Changes in vision
- Blood or mucous in stool
- Painful rash that keeps you awake at night
- Yellowing of the skin/eyes
- Numbness/tingling in your face, arms, legs
- Very weak or dizzy
- Headache that will not go away
- Blood in urine, painful urination
- New or worsening shortness of breath

The side effects can happen right away but often start 1-3 months after you begin treatment. Side effects can also be delayed and can start up to one year after stopping treatment. It is important to watch for symptoms and carry your Orange Alert Card for 1 year after your last CPI treatment in case you need to go to the Emergency Department with new side effects.

What Precautions Do I Have To Take?

If a caregiver or family member is helping you and will be handling your body fluids, it is important that they wash their hands well.

We are unsure of the effect of CPIs on eggs, sperm, or unborn babies. Tell your cancer care team if you are pregnant, become pregnant during treatment, or are breastfeeding. If there is any chance of pregnancy happening, is important to use two effective forms of birth control at the same time until at least 1 year after your last treatment dose. Talk to your cancer care team about which birth control options are best for you.

Where Can I Learn More?

Do not hesitate to talk to you cancer team about any of the information in this pamphlet. They welcome any questions you have.

- › Preparing for Your Immune Checkpoint Inhibitor Treatment
<https://vimeo.com/showcase/4902954/video/818747251>
- › Canadian Cancer Society
<https://cancer.ca/en/cancer-information/resources/cancer-information-videos/2020/what-is-immunotherapy>
- › Lung Cancer Canada: What is Immunotherapy?
<https://www.youtube.com/watch?v=QZF33MjI5W8>

Patient and family feedback is very important to us.

We would like to invite you to send any comments or suggestions on how to improve this booklet to education.cancercare@nshealth.ca or feel free to call us at 1-866-599-2267.

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For more information, go to <http://library.novascotia.ca>

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