



# Immunotherapy Treatment

## Key points



Immunotherapy makes your own immune system recognize and kill cancer cells. It has been approved to treat some forms of non-small cell lung cancer (NSCLC). You may be offered treatment in a clinical trial that tests a new type of immunotherapy drug. Ask your doctor if a clinical trial is right for you.

- Your immune system finds what shouldn't be in your body and attacks it. Immunotherapy uses your immune system to help fight cancer.
- In lung cancer, the most progress in treatment has been made for people with NSCLC.
- New types of immunotherapies are being tested in clinical trials. Talk to your doctor about whether or not clinical trials are right for you.

## Types of Lung Cancer Immunotherapy

There are three main types of immunotherapies being studied in people with NSCLC:

### 1. Immune checkpoint inhibitors

The most progress in immunotherapy for lung cancer has been made in immune checkpoint inhibitors. Immune checkpoints are molecules on the immune cells that can start or stop an immune response. The immune system uses these molecules to help determine what is normal and what should be attacked. Cancer cells sometimes trick these checkpoints to stop the body from attacking them. Newer drugs can target these checkpoints and help them respond against cancer cells.

Currently there are two Medsafe approved immunotherapy drugs. Nivolumab (Opdivo®) and Pembrolizumab (Keytruda®) which are approved to treat people with advanced stage non-small cell lung cancer who no longer respond to chemotherapy.

*NB: These treatments are not currently funded in the public system in New Zealand, although may be available through your specialist if self-funded.*

### Biomarker protein PD-L1

Some lung cancers can be identified and effectively targeted using biomarkers (proteins) which exist on the cancer cells.

PD-L1 biomarker testing identifies which patients are likely to derive the most benefit from treatment with immunotherapies.

Immunotherapies which target lung cancers with a specific biomarker are more likely to be effective.

These types of drug blocks a protein on the immune system cells called PD-1. This helps boost the immune response against cancer cells. They are normally given as an intravenous (IV) drip. These drugs can have similar side effects to chemotherapy, including fatigue, nausea, itching, skin rash, diarrhoea, muscle aches and more. However, most of these side effects are less common and less severe. Due to these drugs working on the immune system, it is possible to have unique side effects that can become more serious over time, and affect how your organs function if not picked up and managed early. It is important to work with your care team to help monitor all side effects.



## Types of Lung Cancer Immunotherapy (cont.)

### 2. Cancer vaccines

When most people think of vaccines they think of treatments that prevent disease. However, there is another type of vaccine called a therapeutic vaccine. This type of vaccine treats an existing cancer by making the immune system better at killing cancer cells. Right now, these vaccines are being studied in clinical trials.

### 3. Adoptive T cell therapy

In this therapy, T cells (a type of white blood cell in the immune system) are removed from your body and then altered in a laboratory so they can better attack cancer cells. Finally, the enhanced T cells are put back into your body to help it fight cancer. Right now, this type of therapy is being studied in clinical trials.

## Related content

[American Lung Association \(2016\) "What Are The Symptoms of Lung Cancer?"](#)

[European Lung Foundation \(2016\) "Lung Cancer"](#)

[Lung Foundation Australia \(2012\) "Better Living with Lung Cancer: A Patient Guide"](#)

## About Lung Foundation New Zealand

Lung Foundation New Zealand is a non-government organisation dedicated to promoting healthy lungs and early detection of lung disease (including lung cancer, New Zealand's biggest cancer killer). The Lung Foundation is devoted to supporting people affected by lung disease and provides a voice for patients and their families.

Lung Foundation New Zealand advocates on a range of issues, including access to more effective funded treatments, an increase in research funding and a commitment to making Aotearoa a smoke free nation by 2025.

## Support us

Lung Foundation New Zealand is an independent organisation and is reliant on support from fundraising events, donations and bequests. This resource has been produced as the result of generous support provided by members of the public.

If you or a member of your family would like to support our work we would love to hear from you. Together we can save lives by increasing awareness about lung health and early detection of lung disease. Please visit our website [www.lungfoundation.org.nz](http://www.lungfoundation.org.nz) or contact Philip Hope, CEO on (+64) 021 959 450 or [philip.hope@lungfoundation.org.nz](mailto:philip.hope@lungfoundation.org.nz)

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**Expert Review Policy:** Our information was checked for accuracy and clarity by cancer specialists. This resource has been approved by Medical Director & Associate Professor of Oncology, Chris Atkinson of Christchurch; assisted by Dr Greg Frazer, Respiratory Physician, Christchurch Hospital; Catherine Smith, Clinical Nurse Specialist - Lung Cancer, Christchurch Hospital; and Anne Fraser, Oncology Nurse Practitioner, Auckland City Hospital. Lung Foundation New Zealand writes in plain English. We review our information every two years so it is kept up to date.

Thanks to the American Lung Association and the European Lung Foundation for allowing us to adapt their resources for our New Zealand readers.

*This information sheet is one in a series produced by Lung Foundation New Zealand on lung disease, its treatment and related issues and is correct at time of print. It is designed to be used as a guide only; it is not intended or implied to be a substitute for professional medical treatment. Please consult your family doctor or specialist if you have further questions relating to this information.*