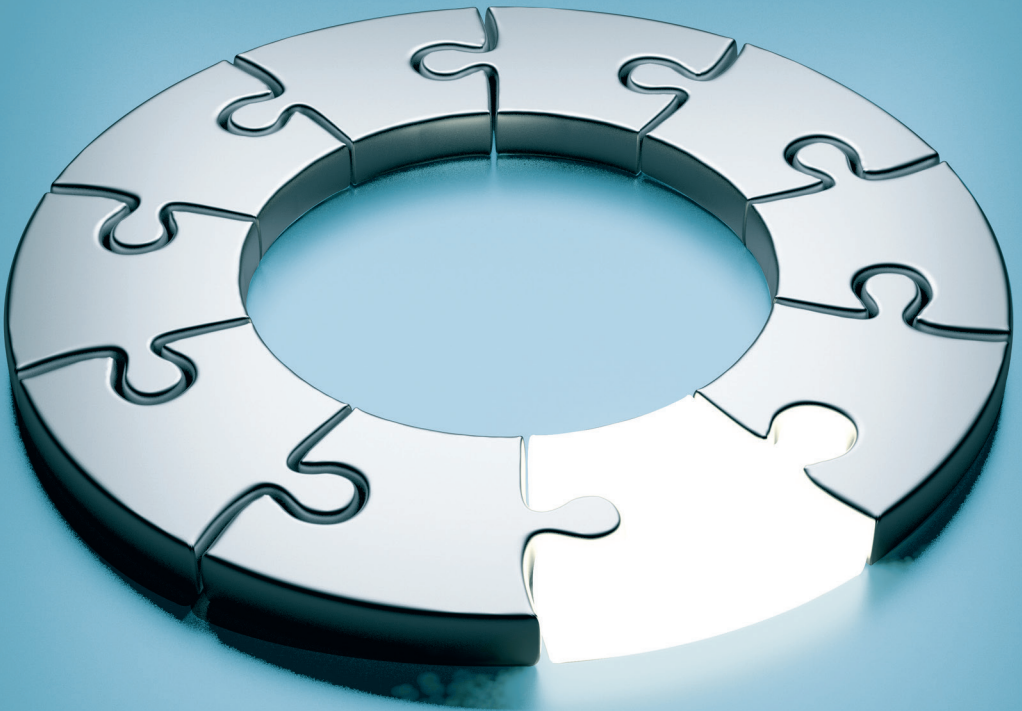


What is immuno-oncology?

A guide for patients



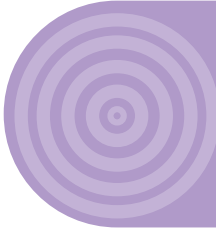
Why this leaflet?

Scientists worldwide have been studying the role the **immune system** can play in fighting cancer for several decades.

However, it was only recently that **immuno-oncology therapies** were found that provide lasting anti-cancer benefits to patients who previously had very few treatment options available to them.¹⁻³ These therapies represent a ‘breakthrough’⁴ in cancer therapy and they have the potential to revolutionise the way we treat many forms of cancer.⁵

This leaflet aims to help patients understand what these new therapies are, how they differ from existing treatments, and what role they will play in years to come.

What is immuno-oncology?



Immuno-oncology therapies^a are medicines that use the body's immune system to fight cancer.

The **immune system** is the body's natural defence system. It is a collection of organs, cells and special molecules that helps protect you from infections, cancer and other diseases. When a different (foreign) organism enters into the body, for example a bacteria, the immune system recognises it and then attacks it, preventing it from causing harm. This process is called an immune response.

Since cancer cells are very different from normal cells in the body, the immune system attacks them when it is able to recognise them. However, cancer cells often find ways to disguise themselves as normal cells, so that the immune system does not always recognise them as dangerous. In addition, similar to viruses, they can change over time (mutate) and therefore escape from the immune response. Also, the natural **immune response** to cancer cells is often not strong enough to fight off cancer cells.

Immuno-oncology therapies^a activate our immune system, making it able to recognise cancer cells and destroy them.

What is different about immuno-oncology therapies?

They target the body's **immune system**, not the tumour itself

They enable the immune system to selectively **recognise and attack** cancer cells

They give **long-lasting memory** to the immune system, so that it can continually adapt to the cancer over time and provide durable, long-term response to the cancer



^a Please note that immuno-oncology therapies belong to broader category of medicines referred to as immunotherapies.

Quality, long-term survival for patients

Evidence from **clinical trials suggests the effects of immuno-oncology therapies effects on cancer cells may** last for a long time, training the immune system to fight against cancer cells even after remission.

This exciting feature of immuno-oncology therapies offers hope of long-term, quality survival for the very first time to many patients for whom prognosis was previously very poor.¹⁻³

Furthermore, side-effects associated with immuno-oncology therapies are manageable as compared to many other cancer therapies.

Therefore immuno-oncology therapies may have a critical positive impact on the patients' capacity to return to work, and lead a healthy and productive life.

Which type of cancer do they work against?

Immuno-oncology therapies may work across **a large number of cancer types**.

Immuno-oncology therapies are now available to patients with advanced melanoma¹ and prostate cancer³ and many more are being studied in a large number of some of the most difficult-to-treat cancers.²

Which drugs are available to patients?

Several immuno-oncology therapies are in the process of being approved for use by patients in Europe, for the treatment of advanced melanoma,¹ lung cancer, colorectal, renal, prostate cancer and many other cancers.

Many other therapies are currently being studied in clinical trials and may be made available to patients over the next several years.

However, each country in Europe has its own system for accepting to fund and reimburse innovative medicines, therefore some immuno-oncology therapies may become available in some countries more quickly than in others.

What does this mean for your treatment?

Immuno-oncology therapies are expected to become an important part of cancer therapy in years to come – along with surgery, radiotherapy, chemotherapy and antibody treatment against tumour-expressed targets (monoclonal antibodies).⁶

However, the science of immuno-oncology is still evolving, and there are a number of important questions that remain unanswered. For example, immuno-oncology therapies do not work in all patients, and a lot of research is going into trying to understand what makes a given patient respond to a particular therapy.

Therefore, it is important that cancer specialists continue to seek **up-to-date information** about immuno-oncology therapies, and that patients do the same, so that they may discuss treatment possibilities and what may be appropriate for them together with their doctor and care team.

About this leaflet

This leaflet was developed to help patients understand more about immuno-oncology therapies, a new type of cancer treatment that uses the **immune system** to fight cancer.

This document has been produced by the **European Expert Group on Immuno-Oncology**, an independent network composed of patient organisations, cancer specialists, researchers and policymakers from across Europe who are working together to make sure that the most effective of these promising new treatments are made available to patients as quickly as possible.

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Find out more

Patients should always first discuss the potential of immuno-oncology therapies for their particular case with their oncologist, care team and general practitioner.

The ECPC Immuno-Oncology Academy – A joint initiative of ECPC and the oncology research community, the Immuno-Oncology Academy (IOA) aims to provide a reliable, simple source of information regarding immuno-oncology to patients and general practitioners, in order to raise awareness on the potential of immuno-oncology and to advance policies related to this field. The main outcome of the IOA will be a website designed primarily to target patients following the principles of usability and transparency.

See www.ecpc.org

The Cancer Research Institute

See: www.cancerresearch.org/cancer-immunotherapy/what-is-cancer-immunotherapy

Patient stories – **The answer to cancer:** www.theanswerstocancer.org/

List of ongoing clinical trials – www.clinicaltrials.gov

Immuno-oncology: a new cancer treatment modality:

www.youtube.com/watch?v=_HUo7kVhRRU

References

- 1 Hodi FS, et al. Improved survival with ipilimumab in patients with metastatic melanoma. *N Engl J Med* 2010; 363:711-723.
- 2 Cancer Research Institute. What is cancer immunotherapy? 2014. <http://www.cancerresearch.org/cancer-immunotherapy/what-is-cancer-immunotherapy#sthash.b4NeQEhi.dpuf>
- 3 Kantoff PW, et al., IMPACT Study Investigators. Sipuleucel-T immunotherapy for castration-resistant prostate cancer. *N Engl J Med* 2010; 363:411-422.
- 4 Couzin-Frankel J. Cancer Immunotherapy. *Science* 2013; 343(20 Dec):1432-1433.
- 5 American Association for Cancer Research. AACR Cancer Progress Report 2013 Making Research Count for Patients: A Continual Pursuit. 2014.
- 6 Immuno-oncology: a new cancer treatment modality. Video address by Professor Rolf Stahel, president of the European Society for Medical Oncology on the occasion of the European Parliament workshop on immuno-oncology, 5 December 2013. 5-12-2013. https://www.youtube.com/watch?v=_HUo7kVhRRU