

Pan-tumor therapies

Redefining Cancer Care

What are pan-tumor treatments?



Pan-tumor (also called tumor-agnostic or tumor-independent) treatments can be used to **treat a variety of cancer types** regardless of the cancer's histology or location in the body.^{1,2}



They target the specific **genomic driver or molecular alteration of the cancer**, which causes it to grow or spread.³

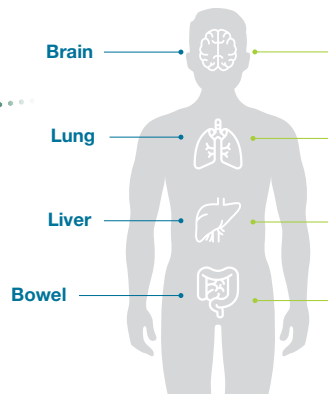


They belong to a branch of personalized medicine known as **precision oncology**. This uses genomic profiling (laboratory analysis of human genetic material) to identify a patient's biomarker information and assist in determining treatment for that individual.³

How do pan-tumor treatments differ from other cancer treatments?



Historically, cancer treatments were approved based on their **effect in specific cancer types**, such as chemotherapy for lung cancer or breast cancer.







Today, the pan-tumor approach focuses on the **genomic features** of the cancer cell, regardless of the type or location in the body, so that one particular treatment may be able to target several different types of cancer.²

How are the genomic features of cancer detected?

Biomarker testing techniques, such as 'next generation sequencing' (NGS) of cancer genes and other scientific tests, are used to **identify if a specific genomic abnormality (mutation)** is present in a tumor, called genomic profiling.⁴

Different types of tests to find cancer mutations

NGS Target: DNA and/or RNA  Can detect: Genomic alterations	IHC Target: Cell  Can detect: Proteins in cells	RT-PCR Target: RNA  Can detect: Gene expression	FISH Target: Chromosome  Can detect: Amplifications, deletions, fusions
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A patient's treatment can then be personalized to **specifically target genomic features** found in their tumor, potentially improving treatment outcomes.⁵



Are pan-tumor treatments ready now, and what's on the horizon?

The recent **availability of three pan-tumor treatments** is leading to a significant shift in how people with cancer are treated.³

These approved pan-tumor treatments are **pembrolizumab** (given as an intravenous infusion by a specialist every three or six weeks), **larotrectinib** (taken as tablets or capsules twice a day), and **entrectinib** (taken as tablets once a day) for the treatment of various solid tumors (not blood tumors such as leukemia).³

Researchers are currently looking into **many more potential treatments**, which may be available in the near future if successful. This research is examining various genomic features of cancer that have the potential to become pan-tumor treatments.⁶



A Pan-Tumor Briefing Sheet by the following contributors:

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‘One size fits all’ medicines only help a subset of cancer patients. Patients need governments to ensure availability of molecular testing to allow doctors to personalize cancer care for patients, identifying the right treatment for the right patient at the right time. The pan-tumor approach could help achieve this faster, as we can identify those people more likely to benefit from treatment.’

Antonella Cardone, Director, European Cancer Patient Coalition (EPCP)

What are the benefits to patients?



Biomarker-directed care or precision oncology, along with a review of a patient’s medical history, helps to select the **right treatment for the right person** with potential for improved treatment outcomes.



Some people can **avoid treatments that don’t work** for them.

This means that they can also avoid the potential **unnecessary side-effects** and their management.

What are the benefits for healthcare systems?



With improved biomarker testing and access to personalized cancer therapies, there is real potential to **improve patient outcomes, while lowering overall healthcare costs.**⁵



Seeking the most effective treatment for each patient, within a country’s economic limits, can contribute to healthcare sustainability and minimize the impact on healthcare budgets.

What are the hurdles to improving access to diagnostic testing?



One size does not fit all. The heterogeneity of healthcare systems around the world, along with mixed availability of diagnostic technologies and infrastructure at time of diagnosis all complicate access to pan-tumor medicines.



Some barriers include **low awareness** among government and regulatory policy makers, clinicians and patient advocates of the concept of pan-tumor medicines and the value these bring to patients.

By developing action plans that work for policy makers, clearer communication, improved education, and with input from patients, then a future where genomic profiling becomes routine practice can be achieved.

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