Tumour-agnostic treatments in personalised cancer care

Cancer cells can start almost anywhere in the body.[1] To begin with, they stay inside the organ or tissue they have developed from. The cancer cells can grow and divide to create more cells and will eventually form a mass or lump of tissue called a **tumour**. Tumours can spread to other areas in the body.[1,2]

Most cancer treatments are developed to treat a tumour that has formed in a specific organ or tissue.[3] A **tumour-agnostic treatment** (also known as a pan-tumour treatment or therapy) is a new approach to cancer care based on the cancer's genetic information, which cause the cancer to develop and grow, regardless of where in the body it started.[3,4]

Tumour-agnostic treatments provide a way to treat a wide range of cancer types based on their genetic information, rather than just their location. Tumour-agnostic treatments are changing the way doctors think about treating cancer and are part of a broader approach called **personalised cancer care**.[3,4]

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Progressing towards personalised cancer care

We are moving towards **personalised cancer care**.[3,5–8]

The introduction of tumour-agnostic treatments marks an important move away from a **traditional** approach to a **precision** approach to cancer care.[3,5–8]

- Cancer was usually treated according to its location in the body and the stage it had reached (if it had spread)[7,9,10]
- **Everyone with the same type and stage of cancer was managed the same, with traditional treatments (chemotherapy and radiation therapy) and/or surgery**[8–10]

- New tests and scientific discoveries have helped us to better understand how certain molecules can contribute to cancer developing[11]
- Today, there are more than 200 known types and subtypes of cancer[12,13]
- A cancer's genetic information (known as biomarkers) can lead to a better understanding of what is making it grow to help find the best treatment options[11,12]
- **Tumour-agnostic treatments are developed to target the biomarkers, regardless of where in the body the cancer started**[14]

- The goal of personalised care is to tailor care for every individual's unique cancer, from screening to diagnosis and treatment[7,8]
- The hope for the future is to not only use a cancer's genetic information to help guide decisions about care (like in precision care), but to also consider the person's environment and lifestyle[8]
- **Testing cancers and collecting and studying the genetic information can help make this a reality**[8]

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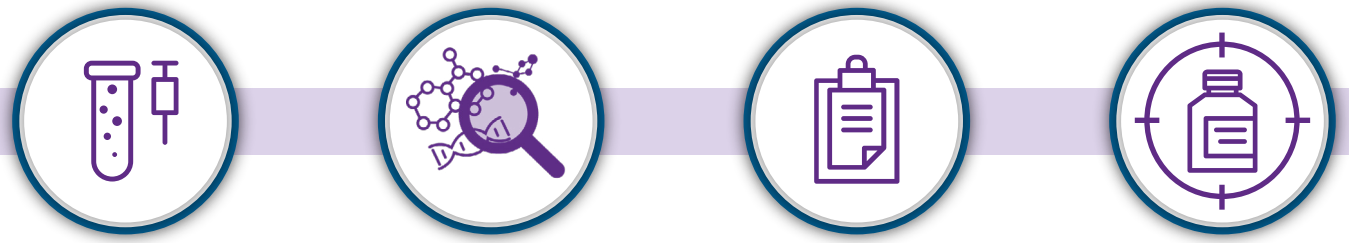
Testing cancers is key for personalised care

With tumour-agnostic treatments, testing for biomarkers may help doctors provide the best treatment plan for every individual.[14] Tests can be carried out on a sample of cancer cells:[15–19]



Biopsy

A tissue or blood sample can be taken (also known as a **biopsy**)

Finding biomarkers

Single biomarker tests detect one biomarker

Comprehensive genomic profiling is a single test that can identify multiple biomarkers at the same time

Test results

Test results may reveal biomarkers (but results are not always conclusive)

Personalised treatment

Tumour-agnostic treatments may be chosen to target the detected biomarker

Tumour-agnostic treatments can be **targeted treatments** (treatments that target specific cancer cells) or **immunotherapies** (treatments that boost the body's natural defences to fight cancer).[20,21]

These types of treatments can be **more effective** and have **fewer side effects** than traditional treatments (chemotherapy and radiation therapy). This is because they affect the cancer cells with the biomarker, without harming healthy cells.[20,21]

Testing cancers is an important part of making decisions about treatment[4,15]

What tumour-agnostic treatments are available?

Targeted treatments and **immunotherapies** are already being used to treat many people today.[20,21] Tumour-agnostic treatments are a quite new concept, but an increasing number are being approved for use in some cancers.[3,4,23]

Other potential tumour-agnostic treatments are being studied in clinical trials, which could be available soon. Researchers are also looking at the genetic information of different cancers, which could be targeted by tumour-agnostic and other treatments.[4,20,23]

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What does this mean for me?

By **testing for cancer biomarkers**, more people can access treatments that are best suited to their cancer, at the right time.[4,8]

More research needs to be done to increase the number of tumour-agnostic treatments available for people with cancer and include them in routine care.[3,14,15]

While they may not work in all cases, tumour-agnostic treatments have the potential to be used against a wide range of cancers.[3,14,15]

They could offer hope for people with:[15,23–27]

rare cancers

hard-to-treat cancers

These treatments are a step forward for **personalised cancer care** and an improved understanding of cancer biology.[4]

If you've recently been diagnosed with cancer, speak to your doctor about clinical trials for tumour-agnostic treatments and whether testing your cancer is right for you

Potential benefits of personalised cancer care

Personalised care can provide better treatments and better ways of managing cancer.[7,28–30] It can help people avoid unnecessary treatments that don't work for them and allow them to start the right treatment earlier.[29] If used in practice, personalised healthcare could lead to:

- Better **health outcomes**[28,29]
- Improved **quality of life** with less impact on daily routines[7,29]
- **Financial benefits** by using more effective treatments earlier[7,29]
- Broader benefits to **society** through improved health and wellbeing, and more efficient use of healthcare resources[29,31]

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