

Precision Oncology: The Future of Personalized Cancer Treatment

Precision oncology tailors cancer therapies to a patient's genetic makeup, resulting in fewer side effects and improved quality of life.

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Key Takeaways:

- Precision oncology is a cancer treatment approach that tailors therapies to a patient's genetic makeup.
- The hope is that precision oncology will provide more effective and targeted treatments.
- Benefits of precision oncology include fewer side effects, shorter recovery times and a better quality of life during and after treatment.

Cancer treatment has improved dramatically over the past several decades. Precision oncology is expanding on this improvement and taking it to another level. Also called personalized medicine or personalized care, the idea of precision oncology is to help health care providers plan specific treatments based on a patient's specific genetic makeup.

What is Precision Oncology?

Precision oncology is an innovative approach. It tailors cancer treatments based on a patient's genes and the specific characteristics of their tumor. It offers the potential for more effective and less toxic personalized therapies.

Precision oncology involves analyzing the genetic profile of the patient or a patient's tumor to select therapies that are more likely to be effective against their type of cancer. At the same time, it may also reduce side effects associated with traditional treatments such as chemotherapy.

Recent studies have shown remarkable success in using precision medicine for various cancer types. For instance, a 2023 study published in the *Annals of Oncology* showed that patients with non-small-cell lung cancer who received targeted therapy based on their tumor's genetic profile had a 37 percent lower risk of disease progression or death compared to those receiving standard chemotherapy.

What Are the Benefits?

The benefits of precision medicine extend beyond improved treatment outcomes. Patients may experience fewer side effects. That's because targeted therapies often spare healthy cells that traditional chemotherapy might damage. This can lead to a better quality of life during treatment and potentially shorter recovery times.

Plus, precision medicine can help avoid ineffective treatments. This helps save patients valuable time and reduces unnecessary physical and emotional stress.

Benefits of precision oncology include:

- More targeted treatments
- Avoidance of ineffective treatments
- Fewer side effects
- Shorter recovery times
- Better quality of life

New Frontiers in Fighting Cancer

As research in this field progresses, the potential applications of precision oncology continue to expand. The precision oncology approach is also being used to predict cancer risk, detect cancer earlier and even prevent its occurrence in high-risk individuals.

While precision medicine shows great promise, it is important to note that it is not yet universally useful for all types of cancer. Ongoing research aims to broaden its applicability and make it more accessible to patients worldwide. The American Institute for Cancer Research (AICR) will continue to monitor the research and progress in this area and bring you news updates as they arise.

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