

Beyond the pill: precision medicine in practice ^[1]

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- With precision medicine, breast cancer is no longer just breast cancer; it can be defined by various biomarkers such as estrogen receptor expression, etc.
- Novartis is working to bring a precision medicine approach to many therapeutic areas.

At Novartis, we're committed to advancing precision medicine, and we firmly believe that the future of medicine is about creating results, not pills.

What is precision medicine? Simply put: Precision medicine is tailoring medical treatments to individual patients, ensuring they receive the right treatment at the right dose.

Precision medicine is where we want medicine to be. It is a key evolution – it used to be about making the patient fit the treatment, but now it is about making the treatment fit the patient.

Dr. Ronenn Roubenoff, Global Translational Medicine Head, Musculoskeletal Diseases at the Novartis Institutes for BioMedical Research

To achieve this, we need to know more about the specifics of the disease state in each patient. It's no longer enough to look at traditional factors. We now need a more precise view, taking into account considerations such as genetics, diet and lifestyle. In oncology, for instance, we have seen major breakthroughs since it became possible to biochemically define a cancer. With precision medicine, breast cancer is no longer just breast cancer; it can be defined by various biomarkers such as estrogen receptor expression, or the presence of HER2.

Such biomarkers have invaluable prognostic power and help determine treatment strategies. The same is true for many cancers now, and survival rates have strongly increased as a result. The knowledge gained from precision oncology is being used to expedite advances across other areas of medicine. However, each disease has a different set of challenges that must be solved to embrace the precision medicine approach.

Tewis Bouwmeester, Developmental and Molecular Pathways Basel Site Head at Novartis, focuses on regenerative medicine and notes that precision techniques extend as far as using a patient's own stem cells.

"We take the patient's own skin stem cells and reprogram them into the ideal target cell type for the disorder being treated," says Bouwmeester. "This avoids so many of the issues associated with the transfer of cells or tissues from other donors where there is always the

risk that the patient's body rejects the transplant.”

It's an exciting time for this emerging field of medicine. With the help of traditional and novel collaborations, we're working to bring a precision medicine approach to many therapeutic areas.

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