

Precision medicine timeline: 'Floodgates might be opening for a generalized cure of most genetic diseases in less than one generation'

Precision therapies have always been the ultimate goal of medicine. Instead of drugs acting on multiple parts of the body, these therapies would only target one organ, one cell, or even one gene.

In theory, not only would this be a lot more efficient, but it would also dramatically reduce side effects and allow the cure of diseases that have so far resisted treatment, from genetic diseases to paralysis or even cancer.

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With the approval of the first CRISPR gene therapy in 2023, the floodgates might be opening for a generalized cure of most genetic diseases in less than one generation.

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Only 864 out of 20,000 proteins in the human body are currently targeted by FDA-approved drugs. This is just 4% of the total, with another 17% potentially targetable. This is mostly due to the extreme difficulty of finding a chemical compound that efficiently targets a specific protein.

A new technology, TPDs, could target 56% of the total human proteome (the whole catalog of proteins, the way the genome is for genes). This could bear massive results in untreatable diseases associated with abnormal proteins, like Alzheimer's Disease.

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Credit: ARK Invest

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