

Synthetic biology is poised to revolutionize how we treat cancer and heritable diseases

With the advent of synthetic biology, each element of the animal/plant/human/ecosystem interface can look to its horizon for important changes, ones that will have the impact of dramatically affecting us all.

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Public health problems that can be addressed in humans through synthetic biology:

Heritable diseases: Roughly thousands of [heritable diseases originate from a single gene](#), including sickle cell anemia, Tay-Sachs, and cystic fibrosis. These are gene mutations that can be corrected, and the edited cells brought back to health.

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Assessing responses to viruses or medications in the lab: Because it is difficult to test how living human tissue responds to viruses and medications, the ability now to grow customized human tissue in laboratories, such as lung and brain tissue, allows [observation of these and other organs](#) as they are infected with a virus.

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Treatments for cancer: There are possibilities to provide customized immunotherapies for different forms of cancers such as ovarian, breast cancer, and melanoma. Indeed, cancer vaccines are being researched, inter alia, by the companies that brought mRNA COVID vaccines rapidly to approval and production

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As with any breakthrough technology, there are inherent risks and ethical challenges. It means we should be receptive to momentous change, but, at the same time, make sure there are guardrails in place.

[**This is an excerpt. Read the original post here**](#)