

Drug development revolution: Messenger RNA has taken the lead in the COVID response – and that's only the beginning

Unlike traditional vaccines, which use live viruses, dead ones, or bits of the shells that viruses come cloaked in to train the body's immune system, the new shots use messenger RNA—the short-lived middleman molecule that, in our cells, conveys copies of genes to where they can guide the making of proteins.

...

This protein alone can't make a person sick; instead, it prompts a strong immune response that, in large studies concluded in December, prevented about 95% of covid-19 cases.

Beyond potentially ending the pandemic, the vaccine breakthrough is showing how messenger RNA may offer a new approach to building drugs.

In the near future, researchers believe, shots that deliver temporary instructions into cells could lead to vaccines against herpes and malaria, better flu vaccines, and, if the covid-19 germ keeps mutating, updated coronavirus vaccinations, too.

Follow the latest news and policy debates on sustainable agriculture, biomedicine, and other 'disruptive' innovations. Subscribe to our newsletter.

[SIGN UP](#)

But researchers also see a future well beyond vaccines. They think the technology will permit cheap gene fixes for cancer, sickle-cell disease, and maybe even HIV.

For [physician and scientist Drew] Weissman, the success of covid vaccines isn't a surprise but a welcome validation of his life's work. "We have been working on this for over 20 years," he says. "We always knew RNA would be a significant therapeutic tool."

[Read the original post](#)