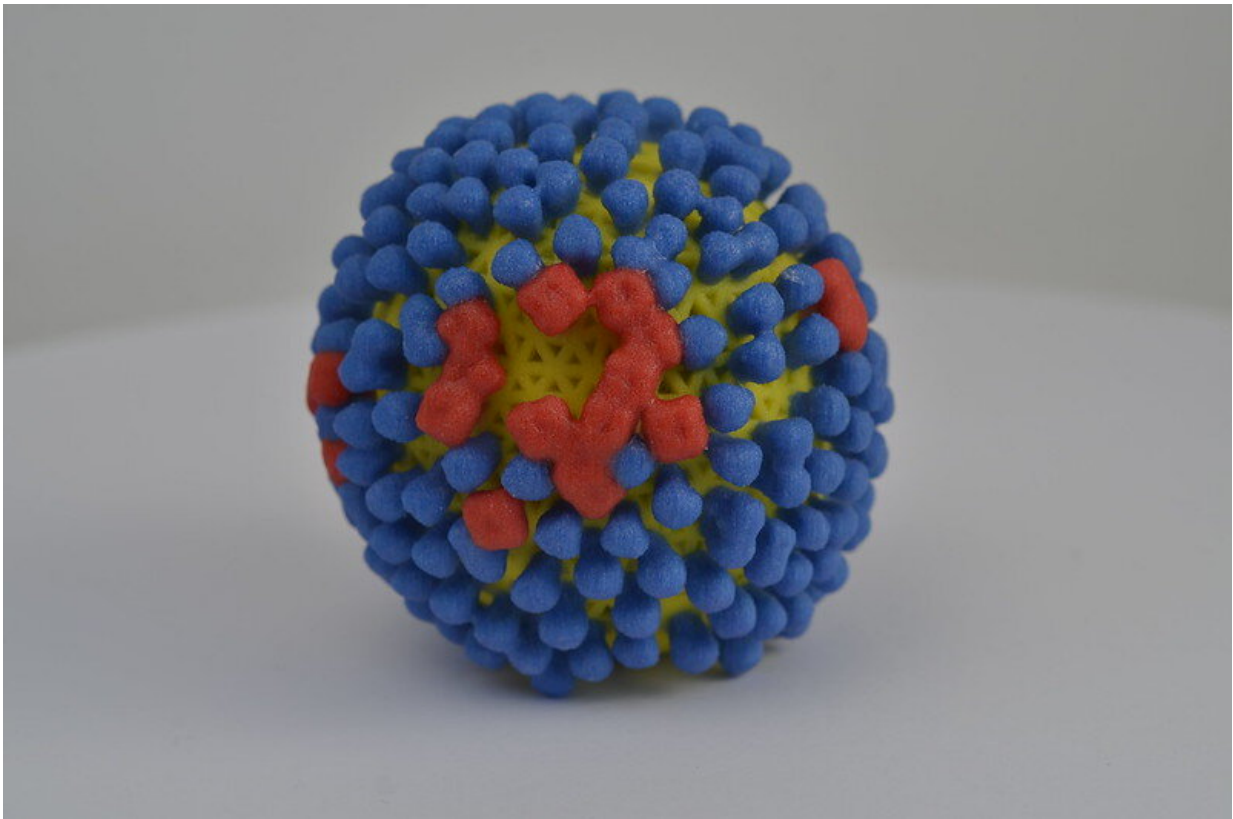


# Moderna begins human trial for multi-strain mRNA flu vaccine

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3D print of influenza virus. The virus surface (yellow) is covered with proteins called hemagglutinin (blue) and neuraminidase (red) that enable the virus to enter and infect human cells. Credit: NIH

US biotech firm Moderna said Wednesday it had dosed its first participants in a human study of an mRNA vaccine that targets multiple

strains of influenza.

The company intends to recruit 180 adults in the United States for the Phase 1/2 portion of the trial to evaluate the safety and strength of immune response to the shot, called mRNA-1010.

It is based on the same messenger ribonucleic (mRNA) technology deployed in Moderna's COVID-19 shot, which is more than 90 percent effective, and if the trial proves successful, it could lead to a new generation of more protective flu vaccines.

"We expect that our seasonal influenza vaccine candidates will be an important component of our future combination respiratory vaccines," said CEO Stephane Bancel in a statement.

The majority of current flu vaccines are based on inactivated viruses cultivated in chicken eggs.

The strains have to be selected six to nine months before the vaccines are intended to be used, and their efficacy is approximately 40 to 60 percent.

Moderna hopes mRNA technology, which provokes an immune response by delivering genetic molecules containing the code for key parts of a pathogen into [human cells](#), can accelerate development and increase scalability.

Several mRNA molecules that encode for different strains can also be delivered in the same shot.

The flu shot under development targets four strains of flu recommended by the World Health Organization (WHO): A (H1N1), A(H3N2), B/Yamagata and B/Victoria.

The WHO estimates there are approximately three to five million severe cases of flu each year globally and 290,000 to 650,000 flu-related respiratory deaths.

Moderna also plans to explore potential combination vaccines against flu, SARS-CoV-2, [respiratory syncytial virus](#) (RSV) and human metapneumovirus (hMPV).

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