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In fight against COVID variants some firms target T cell jabs

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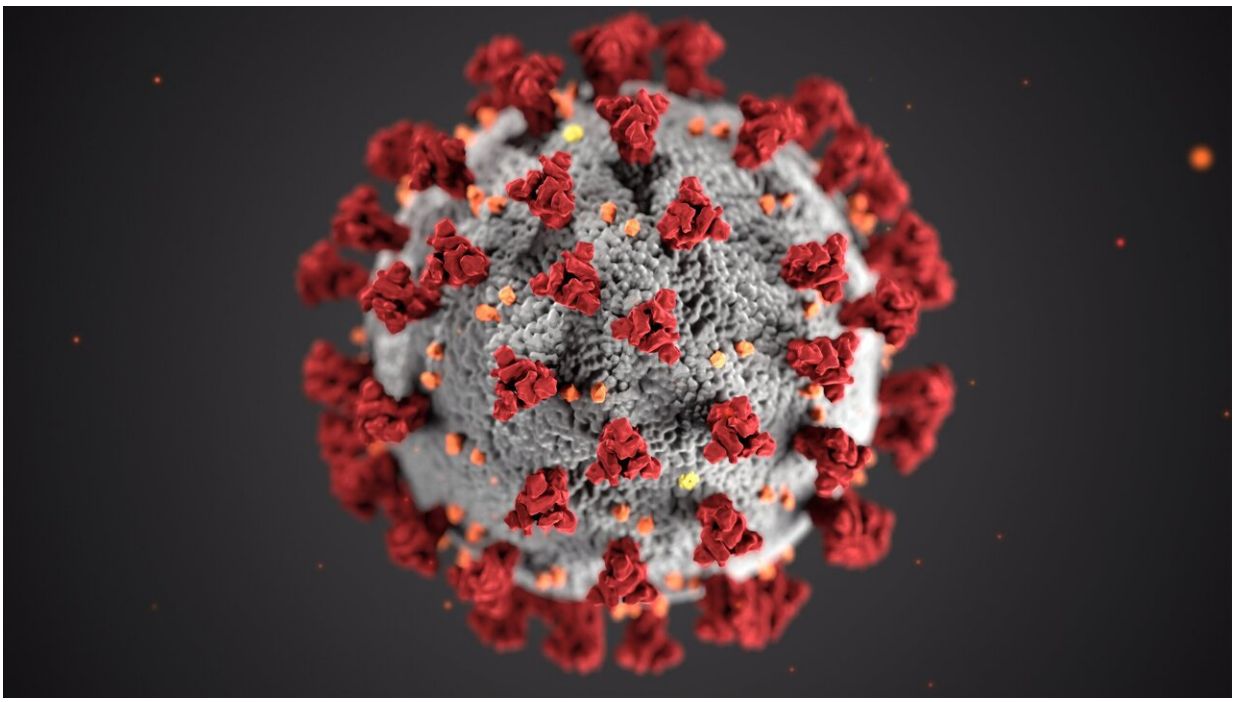

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Getting COVID vaccines into the arms of the world's population is an international priority—but will today's jabs stay effective against virus variants that are spreading across the globe?

It is one of the big questions about the pandemic, with Pfizer chief Albert Bourla recently acknowledging that it is likely a booster will be

needed to help extend the protection conferred by its vaccine and ward off new variants.

A recent study presented a mixed picture.

It found that the antibody response of current vaccines could fail against variants. However, a second immune response in the form of killer T cells—which attack already infected cells and not the virus itself—remained largely intact.

Several startups are working on developing shots centred on T cells in hopes of producing a jab that would not only provide protection against new virus strains already on the loose, but also variants that don't yet exist.

Alexis Peyroles heads up French biotech firm OSE Immunotherapeutics, which is developing a vaccine that targets T cells that has just begun clinical trials.

"It could offer several years of protection," he told AFP.

Another French firm, Lyon-based Osivax, is also working on a T cell shot, promising a "universal" vaccine that would be effective against any potential variant.

The government of France, which has yet to develop its own vaccine, is supporting the effort with millions in funding.

Such projects are far from widespread. Among the 400 vaccines under development counted by the World Health Organization only a few are aimed at universal use.

The most advanced shot of its kind is the ImmunityBio vaccine under

development in the United States. Very preliminary results released last month were mostly encouraging.

'Complement and broaden'

No lab foresees a final product before next year and many scientists are sceptical about the usefulness of trying to develop a shot to protect against a virus strain that doesn't yet exist.

"Mass vaccination itself is a form of evolutionary 'selection' pressure," British virologist Julian Tang told AFP, "and this pressure may push the virus to evolve to escape any vaccine protection—so it can be a double-edged sword."

Other questions involve the extent to which the body will be able to fight the virus with a T cell-based response.

T cells and antibodies work together to form an immune response in the body.

French virologist Yves Gaudin pointed out that if an antibody response fails, "T cells don't serve much purpose".

He said he is "doubtful about the effectiveness of such a vaccine," emphasising that an ideal vaccine would be effective in both areas.

In Europe and the United States the plan for T cell jabs, should they see the light of day, would be to give them to people who had already received the current antibody vaccines.

Peyroles confirmed that OSE's vaccine, should it prove effective in trials, is indeed meant as a way to strengthen current inoculations.

"You would complement and broaden the response created by the first vaccines in terms of scope and time."

He added that T cell vaccines could offer protection to people who have difficulties developing antibodies due to other ailments such as diabetes or cancer.

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