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Scientist behind COVID-19 mRNA vaccine says her team's next target is cancer

'We have several different cancer vaccines based on mRNA'

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Ozlem Tureci, co-founder of the Mainz, Germany-based coronavirus vaccine developer BioNTech, says her research team will be turning their focus back toward cancer. (Bernd von Jutrczenka/dpa/The Associated Press)

The scientist who won the race to deliver the first widely used coronavirus

vaccine says people can rest assured the shots are safe, and that the technology behind it will soon be used to fight another global scourge — cancer.

Ozlem Tureci, who founded the German company BioNTech with her husband, Ugur Sahin, was working on a way to harness the body's immune system to tackle tumours when they learned last year of an unknown virus infecting people in China.

Over breakfast, the couple decided to apply the technology they'd been researching for two decades to the new threat.

Britain authorized BioNTech's mRNA vaccine for use in December, followed a week later [by Canada](#). Dozens of other countries, including the U.S., have followed suit and tens of millions of people worldwide have since received the shot developed together with U.S. pharmaceutical giant Pfizer.

"It pays off to make bold decisions and to trust that if you have an extraordinary team, you will be able to solve any problem and obstacle which comes your way in real time," Tureci told The Associated Press in an interview.

Among the biggest challenges for the small, Mainz-based company were how to conduct large-scale clinical trials across different regions and how to scale up the manufacturing process to meet global demand.

Along with Pfizer, the company enlisted the help of Fosun Pharma in China "to get assets, capabilities and geographical footprint on board, which we did not have," said Tureci.

Co-operation and collaboration

Among the lessons she and her colleagues learned was "how important co-operation and collaboration is internationally."

Tureci, who was born in Germany to Turkish immigrants, said the company reached out to medical oversight bodies from the start, to ensure that the new type of vaccine would pass the rigorous scrutiny of regulators.

"The process of getting a medicine or a vaccine approved is one where many questions are asked, many experts are involved and there is external peer review of all the data and scientific discourse," she said.

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Amid a scare in Europe this week over the coronavirus shot made by British-Swedish rival AstraZeneca, Tureci dismissed the idea that any corners were cut by those racing to develop a vaccine.

"There is a very rigid process in place and the process does not stop after a vaccine has been approved," she said. "It is, in fact, continuing now all around the world, where regulators have used reporting systems to screen and to assess any observations made with our or other vaccines."

Tureci and her colleagues have all received the BioNTech shot themselves, she told the AP. "Yes, we have been vaccinated."

Aim to develop new tool in fight against cancer

As BioNTech's profile has grown during the pandemic, so has its value, adding much-needed funds the company will be able to use to pursue its original goal of developing a new tool against cancer.

The vaccine made by BioNTech-Pfizer and U.S. rival Moderna uses messenger RNA, or mRNA, to carry instructions into the human body for making proteins that prime it to attack a specific virus. The same principle can be applied to get the immune system to take on tumours.

"We have several different cancer vaccines based on mRNA," said Tureci.

Asked when such a therapy might be available, Tureci said "that's very difficult to predict in innovative development. But we expect that within only a couple of years, we will also have our vaccines [against] cancer at a place where we can offer them to people."



Workers pack boxes containing the Pfizer-BioNTech COVID-19 vaccine as they are prepared to be shipped at the Pfizer manufacturing plant in Kalamazoo, Mich., in December. The vaccine was the first to be cleared for use in both Canada and the U.S. (Morry Cash/AFP/Getty Images)

For now, Tureci and Sahin are trying to ensure the vaccines governments have ordered are delivered and that the shots respond effectively to any new mutation in the virus.

On Friday, the couple were taking time out of their schedule to receive Germany's highest award, the Order of Merit, from President Frank-Walter Steinmeier. German Chancellor Angela Merkel, a trained scientist herself, was to attend the ceremony.

"It's indeed an honour," Tureci said of the award. "Both my husband and I are touched."

But she insisted developing the vaccine was the work of many.

"It's about the effort of many, our team at BioNTech, all the partners who were involved, also governments, regulatory authorities, which worked together with a sense of urgency," she said. "The way we see it, this is an acknowledgement of this effort and also a celebration of science."



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