

# EXPLAINER: Allergic reactions to vaccines rare, short-lived

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A nurse holds a phial of the Pfizer-BioNTech COVID-19 vaccine at Guy's Hospital in London, Tuesday, Dec. 8, 2020, as the U.K. health authorities rolled out a national mass vaccination program. U.K. regulators said Wednesday Dec. 9, 2020, that people who have a "significant history" of allergic reactions shouldn't receive the new Pfizer/BioNTech vaccine while they investigate two adverse reactions that occurred on the first day of the country's mass vaccination program. (AP Photo/Frank Augstein, Pool)

Vaccines can sometimes cause allergic reactions, but they are usually rare and short-lived.

British regulators are looking into reports of allergic reactions in two people who received the new Pfizer COVID-19 vaccine Tuesday, the first day of a vaccination program. In the meantime, they're telling people to skip the vaccine if they've had a history of serious allergic reactions.

A look at allergic reactions to vaccines:

## HOW OFTEN DO THEY HAPPEN?

Allergic reactions can occur with numerous vaccines and experts say they are not unexpected.

In the Pfizer-BioNTech study of 42,000 people, the rate was about the same in those who got the coronavirus vaccine versus those who got a dummy shot. U.S. Food and Drug Administration reviewers who examined the study's safety data found that 137—or 0.63%—of vaccine recipients reported symptoms suggestive of an allergic reaction, compared to 111—or 0.51%—in the placebo group.

A 2015 study in the U.S. examining the rate of anaphylaxis—a severe, life-threatening allergic reaction—found that it occurred about once per every million vaccine doses. The study evaluated children and adults who got vaccines against numerous diseases, including polio, measles and meningitis.

"For the general population this does not mean that they would need to be anxious about receiving the vaccination," said Stephen Evans, a vaccines expert at the London School of Hygiene and Tropical Medicine.

He noted that even common foods can provoke severe allergic reactions.



A nurse prepares a shot of the Pfizer-BioNTech

COVID-19 vaccine at Guy's Hospital in London, Tuesday, Dec. 8, 2020, as the U.K. health authorities rolled out a national mass vaccination program. U.K. regulators said Wednesday Dec. 9, 2020, that people who have a "significant history" of allergic reactions shouldn't receive the new Pfizer/BioNTech vaccine while they investigate two adverse reactions that occurred on the first day of the country's mass vaccination program. (AP Photo/Frank Augstein, Pool)

time is going to get magnified," said Jha.

"We should talk about it, we should be honest with people, but we should put it into context and help people understand," he said. "There is a small proportion of people who have an allergic reaction to almost any medicine."

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## WHY DO THESE REACTIONS HAPPEN?

Scientists say people can be sensitive to components in the shot, like gelatin or egg protein, or to the vaccine itself. People with egg allergies are sometimes advised not to get the flu shot, since that vaccine is mostly grown in chicken eggs.

Common symptoms of an allergic reaction include a rash, skin irritation, coughing or trouble breathing.

The exact ingredients used in Pfizer's new COVID-19 vaccine are proprietary and are not publicly disclosed. The vaccine uses a new technology, and is coated in lipid nanoparticles, which have been used in drugs.

Some people react to almost any drug or vaccine, said Dr. Ashish Jha, dean of Brown University's school of public health. The key is whether reactions to the vaccine are more common or more severe \_\_ and that doesn't appear to be the case so far, he said.

## WHAT ARE OTHER SIDE EFFECTS?

Typical side effects for many vaccines include things like a sore arm from the shot, fever and muscle aches. In the Pfizer study, participants also reported fatigue, headache and chills.

More serious side effects are reported to regulators or health officials for further investigation. But it can often take time to determine if the vaccine caused the side effect or if the person just coincidentally received the shot before becoming ill.

As for the COVID-19 vaccine, "It's just so high-profile that every little thing that happens all the

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