CLINICAL TRIAL RESULTS

This summary reports the results of only one study. Researchers must look at the results of many types of studies to understand if a study medicine works, how it works, and if it is safe to prescribe to patients. The results of this study might be different than the results of other studies that the researchers review.

Sponsor: Pfizer, Inc.

Vaccine(s) Studied: 20-valent Pneumococcal Conjugate Vaccine (20vPnC; PF-06482077)

Protocol Number: B7471002

Dates of Trial: 10 October 2017 to 10 December 2018

Title of this Trial: Clinical Study of a New Pneumococcal Vaccine in Adults 60 through 64 Years of Age [A Phase 2, Randomized, Double-Blind Trial to Evaluate the Safety and Immunogenicity of a Multivalent Pneumococcal Conjugate Vaccine in Adults 60 Through 64 Years of Age]

Date(s) of this Report: 11 May 2021

– Thank You –

Pfizer, the Sponsor, would like to thank you for your participation in this clinical trial and provide you a summary of results representing everyone who participated. If you have any questions about the study or results, please contact the doctor or staff at your study site.

WHY WAS THIS STUDY DONE?

Streptococcus pneumoniae is a type of bacteria that can cause serious diseases, including infections of the lung (pneumonia), brain lining (meningitis), blood (bacteremia), or ear (otitis). These infections may be very serious in young children and older adults. *Streptococcus pneumoniae* is also known as *S. pneumoniae* or pneumococcus. Currently there are 100 known types of *S. pneumoniae.*

This study is about a vaccine called the "20-valent pneumococcal conjugate vaccine", or 20vPnC. A vaccine is used to help prevent infection by helping the body to fight off germs. 20vPnC may help to prevent infections caused by *S. pneumoniae.* It is called "20-valent" because 20vPnC prevents 20 of the most common types of *S. pneumoniae.* 20vPnC is an investigational vaccine and it was not approved for general use at the time of this study.

After a vaccine is injected into a person's body, the body responds to help fight infections and prevent diseases. The response to vaccines includes making "antibodies", which are proteins that fight infections and help to prevent diseases.

In the United States, the "13-valent pneumococcal conjugate vaccine", or 13vPnC, is currently approved for preventing *S. pneumoniae* diseases in children and adults. 13vPnC is made up of components to prevent diseases caused by 13 types of *S. pneumoniae.* 20vPnC has the same components found in 13vPnC, plus 7 additional components that may widen protection. The Pneumovax 23 vaccine, or PPSV23, is made up of components to prevent diseases caused by 23 types of *S. pneumoniae.*

The main purpose of this study was to learn about the safety of 20vPnC in participants aged between 60 and 64 years. The researchers wanted to know if any of the participants had redness, swelling, or pain at the injection site after they were given the vaccine. The researchers also wanted to know about participants who had a fever, felt tired, had headaches, muscle pains, and/or pain in the joints or took medicine for pain or fever after the vaccination.

WHAT HAPPENED DURING THE STUDY?

This study compared 2 groups of participants to find out if participants given the 20vPnC vaccine followed by placebo reacted differently compared to participants given the comparator vaccine of 13vPnC followed by PPSV23. A placebo does not have any vaccine in it, but it looks just like the study vaccine. A comparator is usually a licensed drug or vaccine this is similar to the one being tested in the clinical study.

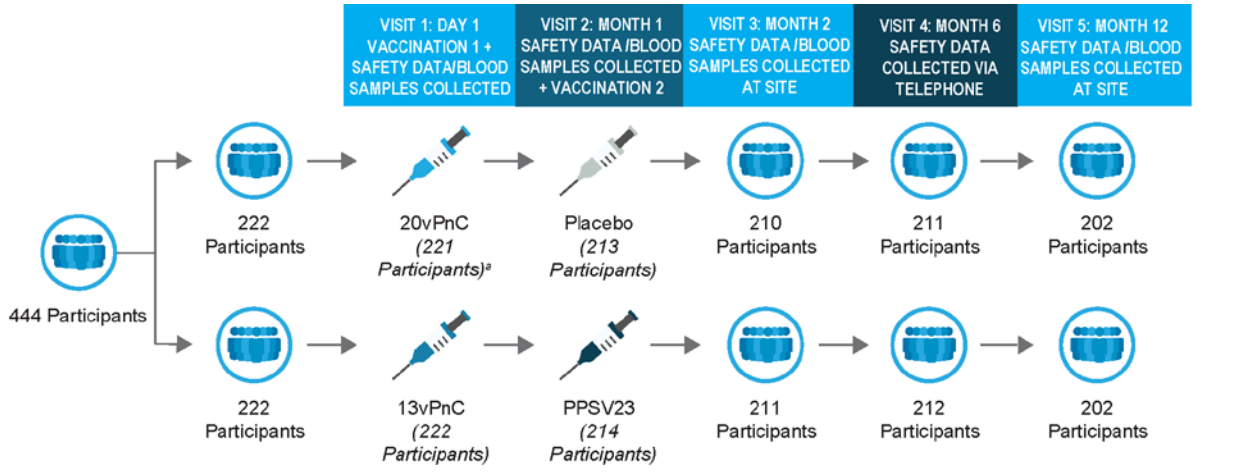
The study included adult participants, aged between 60 and 64 years, who had not previously been vaccinated with a pneumococcal vaccine (13vPnC or PPSV23).

This trial was "double-blinded". This means that participants and doctors did not know which participant received 20vPnC and placebo vaccines or the comparator vaccine 13vPnC and PPSV23. This was done to make sure that the clinical study results were not influenced in any way. Participants were put into 1 of the 2 vaccine groups by chance alone. This is known as a "randomized" study. This is done to make the groups more similar. Reducing differences between the groups (like age or the number of men and women), makes the groups more even to compare.

While participants were only in the study for 12 months, the entire study took around 14 months to complete. The Sponsor ran this study at 14 locations in the United States. It began on 10 October 2017 and ended on 10 December 2018. There were 195 men and 248 women who participated. All participants were between the ages of 60 and 64 years.

Participants were given 1 injection of vaccine (20vPnC or 13vPnC) at the start of the study (Vaccination 1) and a second injection of vaccine (placebo or PPSV23) approximately 1 month later (Vaccination 2). The participants had their health checked and blood samples were collected before Vaccination 1 and before Vaccination 2. The participants then returned to the study center for further assessments and for blood samples to be collected 1 month after Vaccination 2. Participants then had their health checked by telephone 6 months after Vaccination 1. The participants returned to the study center for the final assessments and for blood samples to be collected 12 months after Vaccination 1.

When the participants visited the study center for Vaccination 1, they were given an electronic diary (e-diary). They were asked to record information about redness, swelling, or pain at the injection site within 10 days after Vaccination 1 in the e-diary. The participants were also to use the e-diary to record information about fever, tiredness, headache, muscle pain, and/or pain in the joints as well as any medicines taken to treat pain or fever within 7 days after Vaccination 1.



a Of the 221 participants given 20vPnC, 220 completed the e-diary after Vaccination 1.

Of the 444 participants who started the study, there were 443 participants who received the first vaccine and 1 participant who did not receive Vaccination 1. There were 427 participants who then went on to receive the second vaccine and 16 participants who did not receive Vaccination 2 (8 in the placebo group and 8 in the PPSV23 group). There were 404 participants who finished this 12-month study. There were 40 participants who did not finish the study and these participants left before the study was over by their choice or a doctor decided it was best for a participant to stop being in the study.

When the study ended in December 2018, the Sponsor began reviewing the information collected. The Sponsor then created a report of the results. This is a summary of that report.

WHAT WERE THE RESULTS OF THE STUDY?

What was the percentage of participants who had redness, swelling, or pain at the injection site within 10 days after Vaccination 1?

The percentage of participants with redness, swelling, or pain at the injection site within 10 days after being vaccinated was similar for those receiving a dose of 20vPnC or 13vPnC. Redness, swelling, or pain at the injection site was recorded in the e-diary by 134 out of 220 participants (61%) who received the 20vPnC vaccine and filled out the e-diary and by 126 out of 222 participants (57%) who received the 13vPnC vaccine and filled out the e-diary(see table below). Pain at the injection site was the most common of these reactions in the 2 vaccine groups. There was 1 participant who had severe redness after the 20vPnC vaccine and 1 participant who had severe pain after 13vPnC. All other cases of redness, swelling, or pain at the injection site were mild or moderate in severity.

Percentage of Participants With Redness, Swelling, or Pain at Injection Site Within 10 Days After Vaccinated 1

	20vPnC (220 Participants)[a]	13vPnC (222 Participants)[a]
Any redness, swelling, or pain at injection site	**134 (61%)**	**126 (57%)**
Redness at injection site	**25 (11%)**	**15 (7%)**
Swelling at injection site	**29 (13%)**	**25 (11%)**
Pain at injection site	**127 (58%)**	**119 (54%)**

a Participants who received the vaccine and also filled out the e-diary.

Note: This clinical trial did not look at the number of participants who had redness, swelling or pain at the injection site after Vaccination 2 when participants were given placebo or PPSV23.

What was the percentage of participants who had fever, headache, tiredness, muscle pain, or joint pain within 7 days after Vaccination 1?

The percentage of participants with fever, headache, tiredness, muscle pain, or joint pain within 7 days after being vaccinated was similar for those receiving a dose of the 20vPnC or 13vPnC vaccine.

Fever, headache, tiredness, muscle pain, or joint pain were recorded in the e-diary by 120 out of 220 participants (55%) who received the 20vPnC vaccine and filled out the e-diary and by 124 out of 222 participants (56%) who received the 13vPnC vaccine and filled out the e-diary. Muscle pain was seen most commonly in the 2 vaccine groups. There was 1 participant who had severe tiredness and 1 participant who had a severe headache after 20vPnC. There were 4 participants who had severe tiredness, 2 participants who had severe headache, and 1 participant who had severe joint pain after 13vPnC. All other cases of fever, headache, tiredness, muscle pain, or joint pain were mild or moderate in severity.

Overall, medicine was taken to treat pain and/or reduce fever after Vaccination 1 by 35 out of 220 participants (16%) who received 20vPnC and filled out the e-diary and by 49 out of 222 participants (22%) who received 13vPnC and filled out the e-diary.

Percentage of Participants With Fever, Headache, Tiredness, Muscle Pain, or Joint Pain Within 7 Days After Vaccination 1		
	20vPnC (220 Participants)[a]	13vPnC (222 Participants)[a]
Any fever, tiredness, headache, muscle pain or joint pain	120 (55%)	124 (56%)
Fever	0	1 (1%)
Tiredness	68 (31%)	67 (30%)
Headache	46 (21%)	54 (24%)
Muscle pain	95 (43%)	81 (37%)
Joint pain	33 (15%)	32 (14%)
Took medicine for pain relief or fever	35 (16%)	49 (22%)

a Participants who received the vaccine and also filled out the e-diary.
Note: This clinical trial did not look at the number of participants who had fever, tiredness, headache, muscle pain, joint pain or took medicine to treat pain or fever after Vaccination 2 when participants were given placebo or PPSV23.

This does not mean that everyone in this study had these results. Other studies may produce different results, as well. These are just some of the main findings of the study, and more information may be available at the websites listed at the end of this summary.

WHAT MEDICAL PROBLEMS DID PARTICIPANTS HAVE DURING THE STUDY?

The researchers recorded any medical problems the participants had during the study. Participants could have had medical problems for reasons not related to the study (for example, caused by an underlying disease or by chance). Or, medical problems could also have been caused by a study vaccine or by another medicine the participant was taking. Sometimes the cause of a medical problem is unknown. By comparing medical problems across different vaccine groups in many studies, doctors try to understand what the side effects of an experimental vaccine might be.

In the month after Vaccination 1, there were 27 out of 221 participants (12%) given 20vPnC and 29 out of 222 participants (13%) given 13vPnC who had at least 1 medical problem. The most common medical problems are listed below.

Most Common Medical Problems (Reported by 2 or More Participants in Any Group) Within 1 Month After Vaccination 1

Medical Problem	20vPnC Vaccine (221 Participants)	13vPnC Vaccine (222 Participants)
Upper respiratory tract infection	7 (3%)	5 (2%)
Sinusitis (infection of the sinuses)	3 (1%)	0
Chest infection (bronchitis)	2 (1%)	0
Urinary tract infection	2 (1%)	0
Acute or short-lived sinus infection	1 (1%)	2 (1%)
Infection of the nose and throat (nasopharyngitis)	0	2 (1%)
Stuffy nose (nasal congestion)	0	2 (1%)

Hay fever (allergic rhinitis)	**0**	**2 (1%)**
Cuts to the skin (skin laceration)	**0**	**2 (1%)**

In the month after Vaccination 2, there were 15 out of 213 participants (7%) given placebo and 40 out of 214 participants (19%) given PPSV23 injection who had at least 1 medical problem. The most common medical problems are listed below.

Most Common Medical Problems (Reported by 2 or More Participants in Any Group) Within 1 Month After Vaccination 2

Medical Problem	Placebo (213 Participants)	PPSV23 Vaccine (214 Participants)
Upper respiratory tract infection	**6 (3%)**	**8 (4%)**
Chest infection (bronchitis)	**1 (1%)**	**2 (1%)**
Cough	**2 (1%)**	**0**
Infection of the tendons (tendonitis)	**0**	**2 (1%)**
Injection site pain	**0**	**8 (4%)**
Injection site swelling	**0**	**8 (4%)**
Fall	**0**	**2 (1%)**
Rash	**0**	**2 (1%)**

The doctors thought most of these medical problems seen after Vaccination 1 and Vaccination 2 were not linked to any of the vaccines.

There were no participants who left the study because of medical problems.

WERE THERE ANY SERIOUS MEDICAL PROBLEMS?

A medical problem is considered "serious" when it is life-threatening, needs hospital care, or causes lasting problems.

During the 12-month study, there were 9 serious medical problems in participants in the "20vPnC/placebo" group and 11 serious medical problems in participants in the "13vPnC/PPSV23 group". The 20vPnC/placebo group includes participants who had the 20vPnC vaccine followed by the placebo vaccine whereas the 13vPnC/PPSV23 group includes participants who had the 13vPnC vaccine followed by the PPSV23 vaccine. Most serious medical problems happened 1 month or more after Vaccination 2 and there were 9 serious medical problems in the 20vPnC/placebo group and 7 serious medical problems in the 13vPnC/PPSV23 group. The serious medical problems that happened in the month after Vaccination 1 or Vaccination 2 are listed below:

- Within 1 month after Vaccination 1, there was 1 serious medical problem of pneumococcal meningitis in a participant given 13vPnC. Further tests showed this was caused by a type of *S. pneumoniae* that is not covered by the vaccine. The doctors did not think this serious medical problem was related to the vaccine.
- Within 1 month after Vaccination 2, there were 4 serious medical problems in participants given 13vPnC. These were prostate cancer, a minor stroke, kidney stones, and "respiratory distress". Respiratory distress happens when the lungs are not working properly and causes breathing difficulties.

There were 21 newly diagnosed chronic medical condition seen in participants during this 12-month study. This included 13 newly diagnosed medical conditions in the 20vPnC/placebo group and 8 newly diagnosed medical conditions in the 13vPnC/PPSV23 group. Most of these chronic medical conditions were seen 1 month or more after Vaccination 2 (9 in the 20vPnC/placebo group and 3 in the 13vPnC/PPSV23 group).

None of the serious medical problems or the newly diagnosed chronic medical conditions were considered by the doctors to be related to any of the vaccines given in this study. None of the participants died during the study from medical problems.

WHERE CAN I LEARN MORE ABOUT THIS STUDY?

If you have questions about the results of your study, please speak with the doctor or staff at your study site.

The full scientific report of this study is available online at:

www.clinicaltrials.gov Use the study identifier **NCT03313037**

Further clinical trials with the 20vPnC vaccine are planned.

Please remember that researchers look at the results of many studies to find out which vaccines can work and are safe for participants.

Again, **thank you** for volunteering. We do research to try to find the best ways to help patients, and you helped us to do that!