# Clinical Study 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 vaccine 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.

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|---|---|
| **Sponsor:** | Pfizer Inc. |
| **Vaccine Studied:** | RSV & modRNA COVID-19 Combination (also called PF-07960613) |
| **Protocol Number:** | C5481001 (Substudy A) |
| **Dates of Study:** | 05 June 2023 to 01 January 2024 |
| **Title of this Study:** | A Study to Describe the Effect of a Combined Vaccine Against RSV and COVID-19 (Substudy A)<br><br>[Substudy A (SSA): A Phase 1/2 Substudy to Evaluate the Safety, Tolerability, and Immunogenicity of Combined Vaccine Candidate(s) Against Infectious Respiratory Illnesses, Including COVID-19 and RSV, in Healthy Individuals] |
| **Date of this Report:** | 26 August 2024 |

# – Thank You –

If you participated in this study, Pfizer, the Sponsor, would like to thank you for your participation.

This summary will describe the study results. If you have any questions about the study or the results, please contact the doctor or staff at your study site.

## Why was this study done?

### What are RSV and COVID-19 illnesses?

**Respiratory syncytial** [sin-SISH-uhl] **virus (RSV)** and the **coronavirus disease 2019** (COVID-19) **virus** are common viruses that cause infections of the respiratory tract (nose, throat, and lungs). The COVID-19 virus is called **s**evere **a**cute **r**espiratory **s**yndrome **co**rona**v**irus **2** (SARS-CoV-2).

- RSV and COVID-19 illnesses may range from mild cold- or flu-like symptoms to severe respiratory tract infections like pneumonia.
- Older adults are more likely to develop severe infections, which may lead to hospitalization or death.

Among adults 65 years of age and older in the United States (US), about 865,256 deaths from 2020 to 2023 were due to COVID-19, and 6,000 to 10,000 die due to RSV each year as of 2023 (Centers for Disease Control [CDC] and Prevention).

## What are RSVpreF and BNT162b2 vaccines?

**RSV prefusion F (RSVpreF)** and **BNT162b2** are bivalent injectable vaccines. A **bivalent** vaccine is designed to target 2 different strains of a virus.

### RSVpreF vaccine

RSVpreF vaccine (also called Abrysvo®) is designed to protect against 2 RSV strains called RSV A and B strains.

While this study was ongoing, health authorities in the US and other countries have approved RSVpreF vaccine for adults 60 years of age and older to help protect against RSV illness. RSVpreF vaccine was also approved for pregnant people to help prevent RSV illness in their babies from birth to 6 months of age.

### BNT162b2 vaccine

BNT162b2 vaccine (also called Comirnaty®) is designed to target 2 strains of the COVID-19 virus, Omicron BA.4/BA.5 and original strains, which were commonly going around (circulating) at the time of this study.

At the time of this study, health authorities in the US and other countries have approved or authorized BNT162b2 vaccine for people of different ages, from children to older adults, to help protect against COVID-19 illness.

## RSVpreF plus BNT162b2 combination vaccine

RSVpreF plus BNT162b2 combination vaccine is a mixture of RSVpreF and BNT162b2 vaccines given as 1 shot. This combination vaccine is designed to protect against 2 RSV strains (RSV A and B strains) and 2 strains of the COVID-19 virus (Omicron BA.4/BA.5 and original strains).

In this study, RSVpreF plus BNT162b2 combination vaccine is investigational, which means it is not approved for use outside of research studies. This combination vaccine is being studied to find out if it can help protect against RSV and COVID-19 illnesses.

Mixing the **RSVpreF** and **BNT162b2** vaccines into 1 shot would need fewer healthcare visits and injections compared to giving the 2 vaccines separately.

## In this summary:

- **RSVpreF** vaccine is called **"RSV shot"** when it is given separately as 1 shot (not mixed with other vaccines).
- **BNT162b2** vaccine is called **"COVID shot"** when it is given separately as 1 shot (not mixed with other vaccines).
- The combination of **RSVpreF** and **BNT162b2** vaccines mixed together and given as 1 shot is called **"RSV + COVID shot"**.

## What was the purpose of this study?

The main goal was to find out if the combined **RSV + COVID shot** – given with or without **flu (influenza) vaccination** at the same time – is safe and can help to protect against RSV and COVID-19 virus compared to when the vaccines are given separately as **RSV shot** and **COVID shot**.

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**Flu** (also called **influenza**) is caused by influenza viruses. People with mild flu symptoms may experience runny nose, sore throat, cough, body aches, or tiredness. People aged 65 years and older are at high risk of developing severe flu symptoms, which can lead to death.

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## Influenza (Flu) Vaccine

In this study, some participants received a **quadrivalent influenza vaccine (QIV)**, also called Fluzone®. A **quadrivalent** vaccine is designed to target 4 different strains of a virus. Health authorities in the US and other countries have approved QIV for people of different ages, from children to older adults.

QIV is designed to protect against 4 flu strains called 2 A strains (H1N1 and H3N2) and 2 B strains (B strain 1 and B strain 2). QIV can protect against a few of the most common flu viruses, which can change from year to year. Health authorities from different countries recommend people get a flu vaccine every year.

**QIV** is called the **"flu shot"** in this summary.

Researchers wanted to know whether the **RSV + COVID shot** (with or without a **flu shot** at the same time) can help to protect against RSV, COVID-19, and flu illnesses as well as when the **RSV shot** and **COVID shot** are given separately (with or without a **flu shot**).

- This is because there might be a possibility in the future to schedule the RSV, COVID-19, and flu vaccinations at the same time of the year.
- The RSV, COVID-19 virus, and flu virus often circulate at the same place/time and are likely to have peak circulation in winter.

## Researchers wanted to know:

- **Can the RSV + COVID shot combination given at the same time as the flu shot work as well as when the RSV, COVID, and flu shots are given separately?**
- **Can the RSV + COVID shot combination work as well as when the RSV shot and COVID shot are given separately?**
- **How many participants had local reactions and systemic reactions within 7 days after vaccination?**
- **How many participants had medical problems within 1 month after vaccination?**
- **How many participants had serious medical problems within 6 months after vaccination?**

**Local reactions** can happen in the spot on the arm where the vaccine was injected (injection site). **Systemic reactions** are symptoms that can affect the whole body.

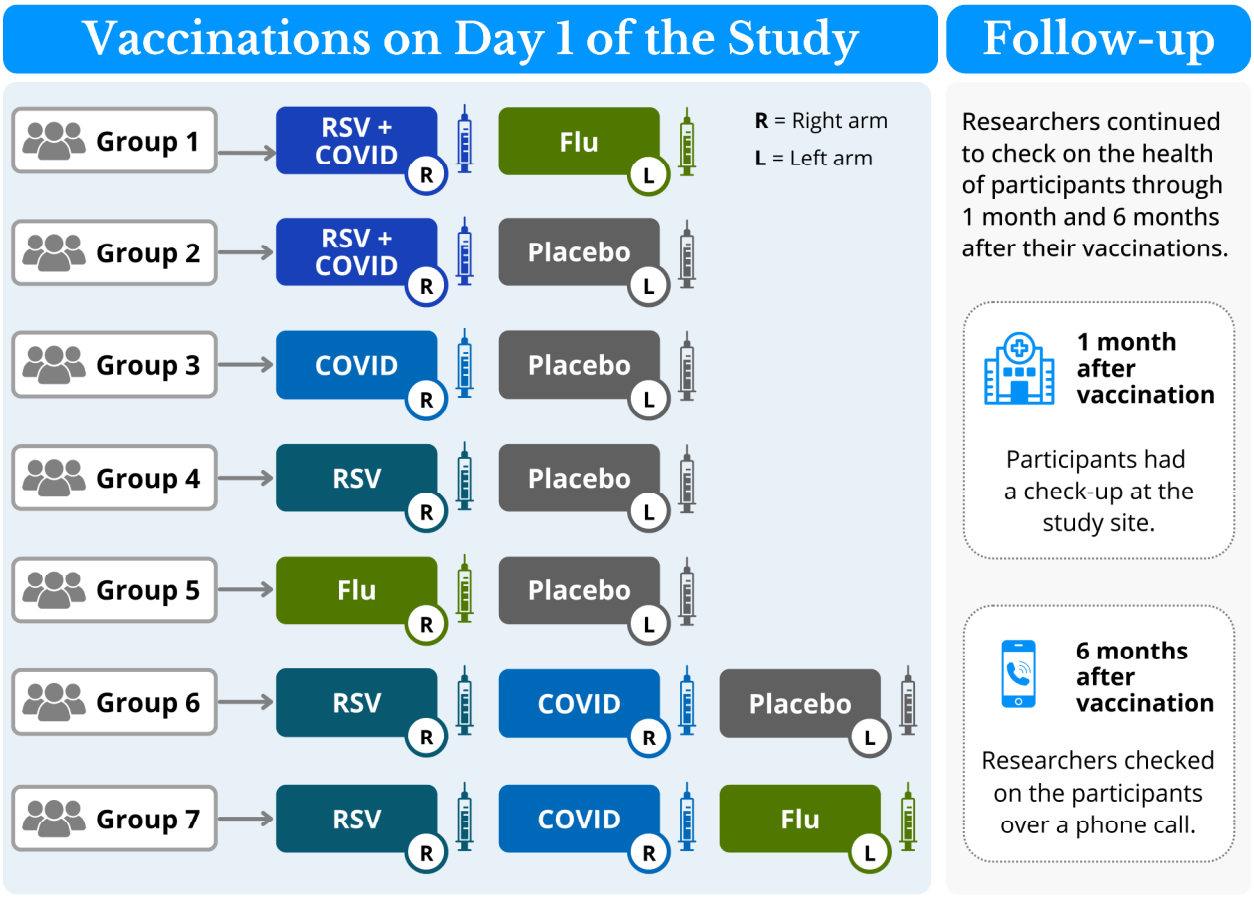
# What happened during the study?

## How was the study done?

Researchers tested different vaccines in 7 groups of study participants. Researchers used a computer program to randomly assign participants to 1 of the 7 groups.

Participants got their assigned vaccinations on Day 1 of the study. Figure 1 below shows how the study was done.

### Figure 1. How was the study done?




A **placebo** does not have active ingredients in it and will cause no effect.

This study was **observer-blinded**. This means that only the healthcare staff who gave the injections knew which vaccines the participants got in each arm. The participants and researchers did not know which vaccines the participants got.

During the study, researchers checked the participants' health and asked them how they were feeling.

- Researchers took blood samples from participants on Day 1 before vaccination and at 1 month after vaccination.
- Researchers checked on the participants for at least 30 minutes after their vaccinations to see how they were feeling.
- Participants had follow-up health checks up to 6 months after vaccination in this study.

## Where did this study take place?

The Sponsor ran this study at 30 locations in the US.

## When did this study take place?

It began on 05 June 2023 and ended on 01 January 2024.

## Who participated in this study?

The study included healthy adults who were 65 years of age or older. Before joining this study:

- They must have received at least 3 US-authorized mRNA COVID-19 vaccines, and their last dose must have been a bivalent vaccine given at least 5 months before Day 1 of this study.
- They must not have received any RSV vaccine at any time before joining this study or any flu vaccine up to 4 months before joining this study.

A total of 1083 participants started the study.

Overall, 1073 out of 1083 (99.1%) participants were vaccinated in this study.

- A total of 477 (44.5%) men and 596 (55.5%) women participated.
- All participants were between 65 and 90 years old.

Out of the 1083 participants, 1061 (98.0%) participants finished the study, and 12 (1.1%) participants did not finish the study after vaccination.

Among participants who did not finish the study, the most common reason was because:

- they could not be contacted for their follow-up check-up, or
- they left before the study was over by their choice.

## How long did the study last?

Each participant was in the study for about 6 months.  The entire study took about 7 months to complete.

When the study ended in January 2024, 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?

To answer the 2 questions below, researchers measured the participants' **antibody levels** against the COVID-19 virus, RSV, and flu virus.

- **Antibodies** are proteins that can fight off infections and help prevent disease. Antibodies can tell us about the body's immune response.
- An **immune response** is the body's ability to find and fight germs that cause diseases.

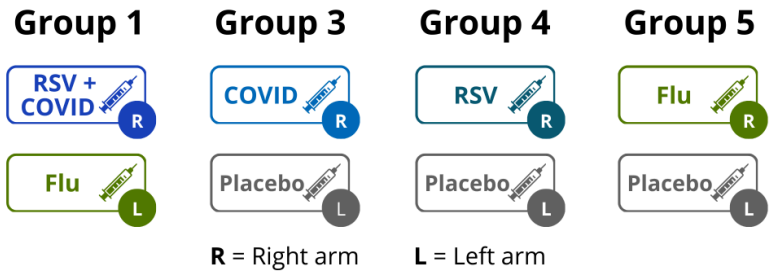
Antibody levels were measured **before** and **after** vaccinations in this study. Depending on which vaccines the participants got, antibody levels to the matching viruses listed below were measured.

- **COVID-19 virus:** Omicron BA.4/BA.5 and original strains
- **RSV:** RSV A and B strains
- **Flu virus:** 4 flu strains (2 A strains and 2 B strains)

## Can the RSV + COVID shot combination given at the same time as the flu shot work as well as when the RSV, COVID, and flu shots are given separately?

Researchers compared the **antibody levels** of participants in **Group 1** – given **RSV + COVID shot** (right arm) at the same time as the **flu shot** (left arm) – with the antibody levels of participants in the following groups:

- **Group 3:** given **COVID shot** (right arm) and **placebo shot** (left arm)
- **Group 4:** given **RSV shot** (right arm) and **placebo shot** (left arm)
- **Group 5:** given **flu shot** (right arm) and **placebo shot** (left arm)




### Results of Group 1 compared to Groups 3, 4, and 5:

1 month after vaccinations in this study

The RSV, COVID-19, and flu **antibody levels** of participants in **Group 1** (given **RSV + COVID shot** at the same time as the **flu shot**) were within a range considered **similar** to those seen in participants given each of the 3 vaccines separately:

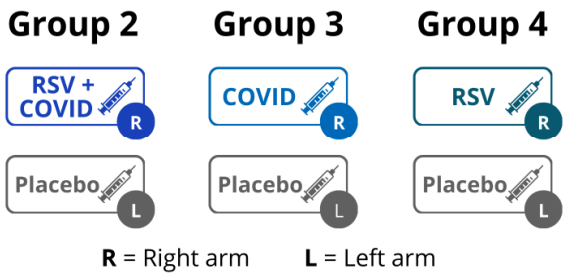
| Group 3: | Group 4: | Group 5: |
|---|---|---|
| COVID shot | RSV shot | Flu shot |

Researchers decided that these results are likely not due to chance. This means that getting the **RSV + COVID shot** combination at the same time as the **flu shot** may protect against RSV, COVID-19, and flu illnesses **as well as** when getting the **RSV**, **COVID**, and **flu shots** separately.

## Can the RSV + COVID shot combination work as well as when the RSV shot and COVID shot are given separately?

Researchers compared the **antibody levels** of participants in **Group 2** – given **RSV + COVID shot** (right arm) at the same time as a **placebo shot** (left arm) – with the antibody levels of participants in the following groups:

- **Group 3:** given **COVID shot** (right arm) and **placebo shot** (left arm)
- **Group 4:** given **RSV shot** (right arm) and **placebo shot** (left arm)




### Results of Group 2 compared to Groups 3 and 4:

1 month after vaccinations in this study

The RSV and COVID-19 **antibody levels** of participants in **Group 2** (given **RSV + COVID shot** at the same time as the **placebo shot**) were within a range considered **similar** to those seen in participants who got each of the 2 vaccines separately:

| **Group 3:** | **Group 4:** |
|---|---|
| **COVID shot** | **RSV shot** |

Researchers decided that these results are likely not due to chance. This means that getting the **RSV + COVID shot** combination may protect against RSV and COVID-19 illnesses **as well as** when getting the **RSV shot** and **COVID shot** separately.

## How many participants had local reactions and systemic reactions within 7 days after vaccination?

Participants recorded on their electronic diary or app in their phone if they had these reactions within 7 days after vaccination:

- **Local reactions:** Redness, swelling, or pain at the injection site on the right arm
- **Systemic reactions:** Fever, tiredness, headache, chills, vomiting, diarrhea, muscle pain, or joint pain

Participants were not asked to record any reactions to the flu shot or placebo shot given on the left arm.

Overall, across the 7 groups:

- Most of the **local reactions** and **systemic reactions** were mild or moderate in severity and lasted about 1 to 2 days.
- **Injection site pain** was the most common local reaction.
- **Tiredness** was the most common systemic reaction.

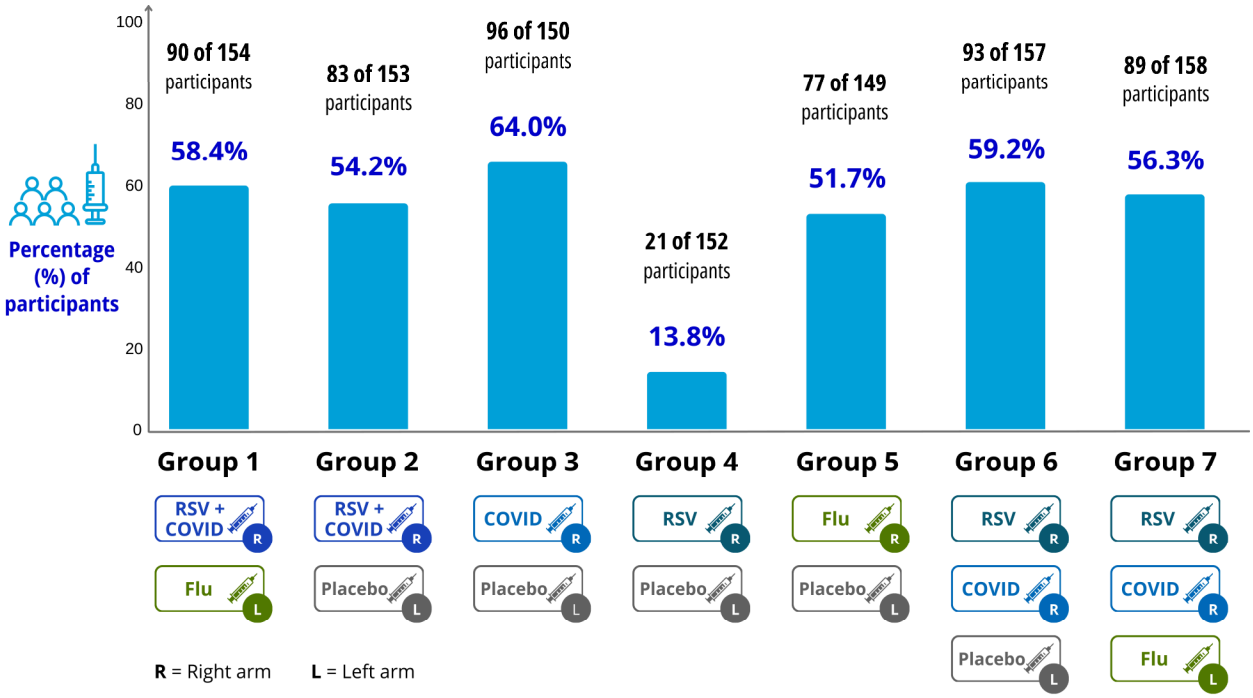
## Local reactions on the right arm:

Within 7 days after vaccination:

- The percentages of participants with local reactions in **Group 1** (**58.4%**) and **Group 2** (**54.2%**) were **similar** to those of participants in **Groups 3, 5, 6,** and **7** (ranged from **51.7%** to **64.0%**).
- Few (**13.8%**) participants in **Group 4** had local reactions.

Figure 2 below shows these results.

## Figure 2. How many participants had at least 1 local reaction within 7 days after vaccination?



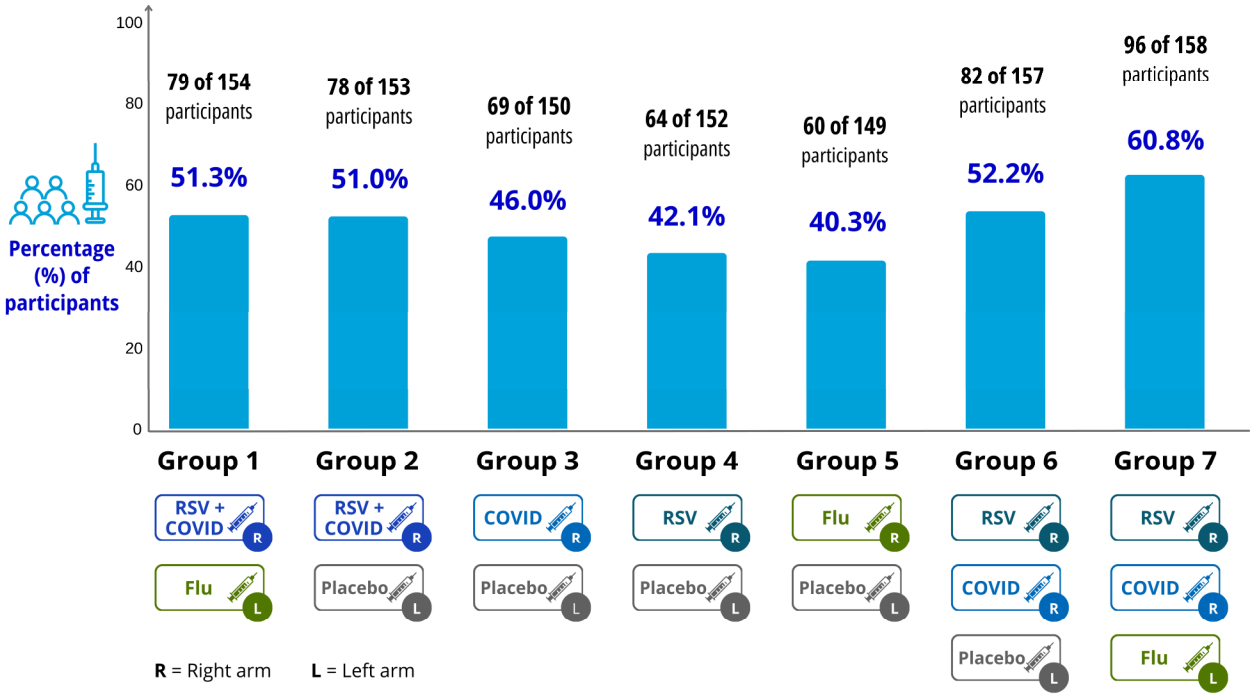
## Systemic reactions:

Within 7 days after vaccination:

- The percentages of participants with systemic reactions in **Group 1** (**51.3%**) and **Group 2** (**51.0%**) were **similar** to those of participants in **Groups 3 to 7** (ranged from **40.3%** to **60.8%**).

Figure 3 below shows these results.

## Figure 3. How many participants had at least 1 systemic reaction within 7 days after vaccination?




This does not mean that everyone in this study had these results. This is a summary of just some of the main results of this study. Other studies may have different results.

# 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 many vaccine groups in many studies, doctors try to understand what effects a study vaccine might have on a participant.

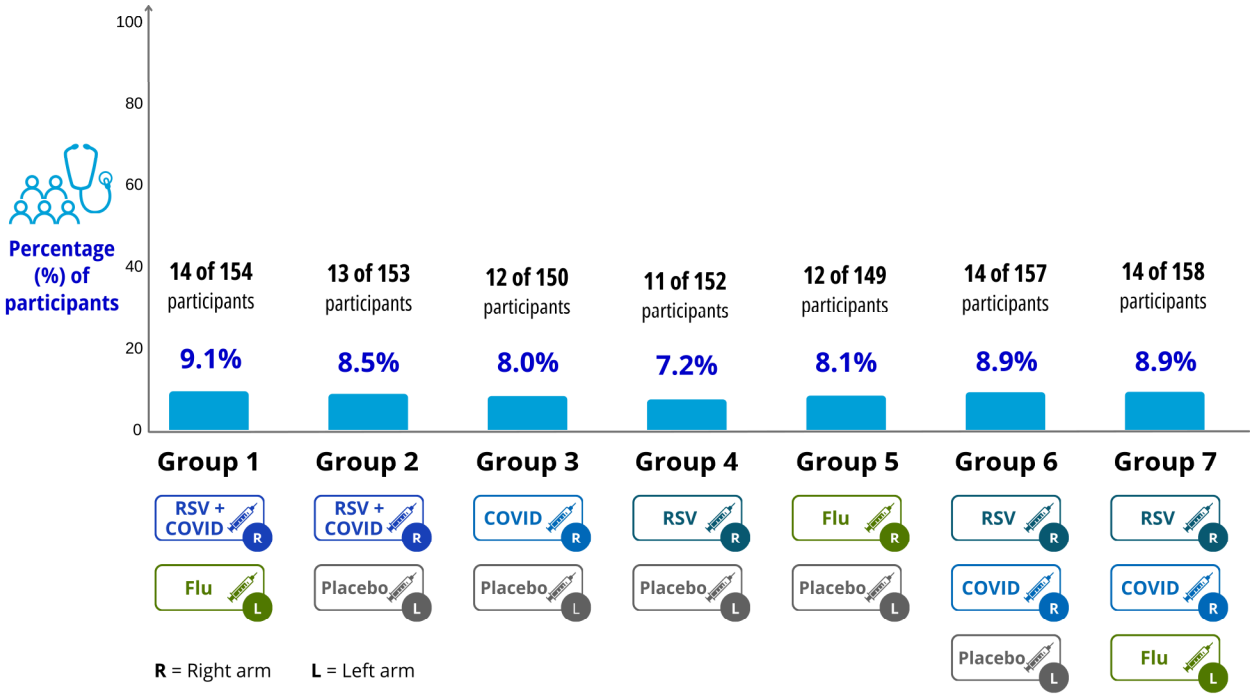
Overall, study results showed that the following vaccinations were safe and well tolerated by participants:

- **RSV + COVID shot** given as a combination at the same time as the **flu shot** or **placebo shot**
- **RSV shot** and **COVID shot** given separately at the same time as the **flu shot** or **placebo shot**

## How many participants had medical problems within 1 month after vaccination?

Figure 4 below shows that few (**7.2% to 9.1%**) participants across the 7 groups had at least 1 medical problem within 1 month after vaccination in this study.

## Figure 4. Number of participants who reported medical problems within 1 month after vaccination



The list below shows the most common medical problems – those reported by at least 1% of participants in any of the 7 groups – within 1 month after vaccination.

- **Rash** among 3 out of 154 (**1.9%**) participants in **Group 1**
- **COVID-19 infection** among a total of 7 participants:
  - 3 out of 150 (**2.0%**) participants in **Group 3**
  - 3 out of 157 (**1.9%**) participants in **Group 6**
  - 1 out of 158 (**0.6%**) participants in **Group 7**
- **Diarrhea** among 2 out of 149 (**1.3%**) participants in **Group 5**

**During the study:**
(from vaccination through 6 months after vaccination)

- No participant left the study because of medical problems.
- No participant had myocarditis or pericarditis.

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**Myocarditis** is an inflammation (or swelling) of the heart muscle. This heart condition can make it harder for the heart to pump blood.

**Pericarditis** is an inflammation of the lining around the heart (called the pericardium).

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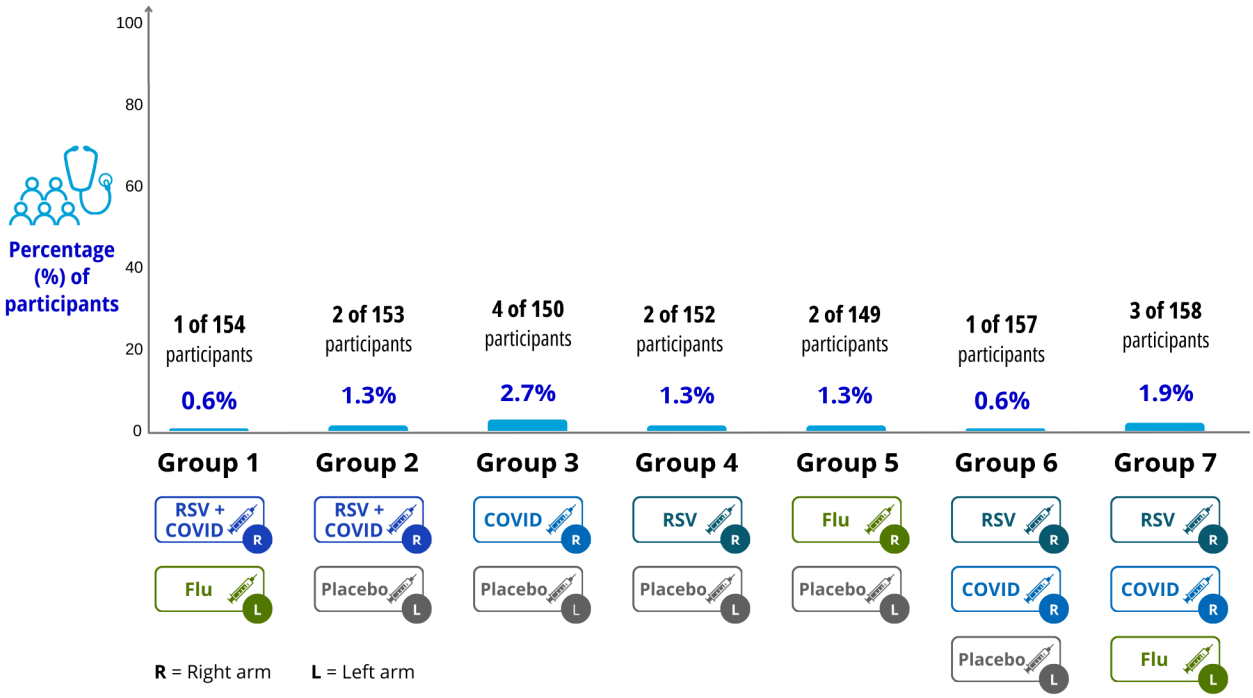
# Did study participants have any serious medical problems?

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

## How many participants had serious medical problems within 6 months after vaccination?

Figure 5 below shows that few (**0.6% to 2.7%**) participants across the 7 groups had at least 1 serious medical problem within 6 months after vaccination in this study.

## Figure 5. Number of participants who reported serious medical problems within 6 months after vaccination



**During the study:**
(from vaccination through 6 months after vaccination)

- The most common serious medical problem – reported by at least 2 participants in the overall group – was **chest pain**. In total, 1 out of 152 (**0.7%**) participants in **Group 4** and 1 out of 149 (**0.7%**) participants in **Group 5** reported chest pain.
- The other serious medical problems happened in 1 participant each in the overall group.
- Researchers did not think any of the serious medical problems were related to the study vaccines.
- No participant died.

## 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.

For more details on your study protocol, please visit:

| | |
|---|---|
| www.pfizer.com/research/research_clinical_trials/trial_results | Use the protocol number **C5481001 Substudy A** |

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

| | |
|---|---|
| www.clinicaltrials.gov | Use the study identifier **NCT05886777** |

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

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