



COVID-19

Selected Adverse Events Reported after COVID-19 Vaccination

Updated Sept. 7, 2021

[Print](#)

Safety of COVID-19 Vaccines

Some people have no side effects. Many people have reported side effects that may affect their ability to do daily activities, but they should go away within a few days.

What You Need to Know


- COVID-19 vaccines are **safe and effective**.
- Millions of people in the United States have received COVID-19 vaccines under the most intense safety monitoring in U.S. history.
- CDC recommends everyone 12 years and older get vaccinated as soon as possible to help protect against COVID-19 and the related, potentially severe complications that can occur.
- CDC, the U.S. Food and Drug Administration (FDA), and other federal agencies are monitoring the safety of COVID-19 vaccines.
- Adverse events described on this page have been reported to the Vaccine Adverse Event Reporting System (VAERS) [↗](#).
- VAERS accepts reports of any adverse event following any vaccination.
- Reports of adverse events to VAERS following vaccination, including deaths, do not necessarily mean that a vaccine caused a health problem.

Serious adverse events after COVID-19 vaccination are rare but may occur.

For public awareness and in the interest of transparency, CDC is providing timely updates on the following serious adverse events of interest:

- **Anaphylaxis after COVID-19 vaccination is rare** and has occurred in approximately 2 to 5 people per million vaccinated in the United States. Severe allergic reactions, including anaphylaxis, can occur after any vaccination. If this

occurs, vaccination providers can effectively and immediately treat the reaction. Learn more about COVID-19 vaccines and allergic reactions, including anaphylaxis.

- **Thrombosis with thrombocytopenia syndrome (TTS) after Johnson & Johnson's Janssen (J&J/Janssen) COVID-19 vaccination is rare.** As of September 1, 2021, more than 14.3 million doses of the J&J/Janssen COVID-19 Vaccine have been given in the United States. CDC and FDA identified 45 confirmed reports of people who got the J&J/Janssen COVID-19 Vaccine and later developed TTS. Women younger than 50 years old especially should be aware of the rare but increased risk of this adverse event. There are other COVID-19 vaccine options available for which this risk has not been seen. Learn more about J&J/Janssen COVID-19 Vaccine and TTS.
 - To date, two confirmed cases of TTS following mRNA COVID-19 vaccination (Moderna) have been reported to VAERS after more than 356 million doses mRNA COVID-19 vaccines administered in the United States. Based on available data, there is not an increased risk for TTS after mRNA COVID-19 vaccination.
- CDC and FDA are monitoring reports of Guillain-Barré Syndrome (GBS) in people who have received the J&J/Janssen COVID-19 Vaccine. GBS is a rare disorder where the body's immune system damages nerve cells, causing muscle weakness and sometimes paralysis. Most people fully recover from GBS, but some have permanent nerve damage. After more than 14.3 million J&J/Janssen COVID-19 Vaccine doses administered, there have been around 185 preliminary reports of GBS identified in VAERS as of September 1, 2021. These cases have largely been reported about 2 weeks after vaccination and mostly in men, many 50 years and older. CDC will continue to monitor for and evaluate reports of GBS occurring after COVID-19 vaccination and will share more information as it becomes available.
- **Myocarditis and pericarditis after COVID-19 vaccination are rare.** As of September 1, 2021, VAERS has received 1,404 reports of myocarditis or pericarditis among people ages 30 and younger who received COVID-19 vaccine. Most cases have been reported after mRNA COVID-19 vaccination (Pfizer-BioNTech or Moderna), particularly in male adolescents and young adults. Through follow-up, including medical record reviews, CDC and FDA have confirmed 817 reports of myocarditis or pericarditis. CDC and its partners are investigating these reports to assess whether there is a relationship to COVID-19 vaccination. Learn more about COVID-19 vaccines and myocarditis.
- **Reports of death after COVID-19 vaccination are rare.** More than 375 million doses of COVID-19 vaccines were administered in the United States from December 14, 2020, through September 7, 2021. During this time, VAERS received 7,439 reports of death (0.0020%) among people who received a COVID-19 vaccine. FDA requires healthcare providers to report any death after COVID-19 vaccination to VAERS, even if it's unclear whether the vaccine was the cause. **Reports of adverse events to VAERS following vaccination, including deaths, do not necessarily mean that a vaccine caused a health problem.** A review of available clinical information, including death certificates, autopsy, and medical records, has not established a causal link to COVID-19 vaccines. However, recent reports indicate a plausible causal relationship between the J&J/Janssen COVID-19 Vaccine and TTS, a rare and serious adverse event—blood clots with low platelets—which has caused deaths 
[1.4 MB, 40 pages].

Related Pages

- › [Safety of COVID-19 Vaccines](#)
- › [Vaccine Adverse Event Reporting System \(VAERS\): What Reports Mean and How VAERS Works](#)

Last Updated Sept. 7, 2021
Content source: National Center for Immunization
and Respiratory Diseases (NCIRD), Division of Viral
Diseases



COVID-19

Selected Adverse Events Reported after COVID-19 Vaccination

Updated Sept. 27, 2021

[Print](#)

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What You Need to Know


- COVID-19 vaccines are **safe and effective**.
- Millions of people in the United States have received COVID-19 vaccines under the most intense safety monitoring in U.S. history.
- CDC recommends everyone 12 years and older get vaccinated as soon as possible to help protect against COVID-19 and the related, potentially severe complications that can occur.
- CDC, the U.S. Food and Drug Administration (FDA), and other federal agencies are monitoring the safety of COVID-19 vaccines.
- Adverse events described on this page have been reported to the Vaccine Adverse Event Reporting System (VAERS) [↗](#).
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Serious adverse events after COVID-19 vaccination are rare but may occur.

For public awareness and in the interest of transparency, CDC is providing timely updates on the following serious adverse events of interest:

- **Anaphylaxis after COVID-19 vaccination is rare** and has occurred in approximately 2 to 5 people per million vaccinated in the United States. Severe allergic reactions, including anaphylaxis, can occur after any vaccination. If this

occurs, vaccination providers can effectively and immediately treat the reaction. Learn more about COVID-19 vaccines and allergic reactions, including anaphylaxis.

- **Thrombosis with thrombocytopenia syndrome (TTS) after Johnson & Johnson's Janssen (J&J/Janssen) COVID-19 vaccination is rare.** As of September 22, 2021, more than 14.8 million doses of the J&J/Janssen COVID-19 Vaccine have been given in the United States. CDC and FDA identified 47 confirmed reports of people who got the J&J/Janssen COVID-19 Vaccine and later developed TTS. Women younger than 50 years old especially should be aware of the rare but increased risk of this adverse event. There are other COVID-19 vaccine options available for which this risk has not been seen. Learn more about J&J/Janssen COVID-19 Vaccine and TTS.
 - To date, two confirmed cases of TTS following mRNA COVID-19 vaccination (Moderna) have been reported to VAERS after more than 372 million doses of mRNA COVID-19 vaccines administered in the United States. Based on available data, there is not an increased risk for TTS after mRNA COVID-19 vaccination.
- CDC and FDA are monitoring reports of Guillain-Barré Syndrome (GBS) in people who have received the J&J/Janssen COVID-19 Vaccine. GBS is a rare disorder where the body's immune system damages nerve cells, causing muscle weakness and sometimes paralysis. Most people fully recover from GBS, but some have permanent nerve damage. After more than 14.8 million J&J/Janssen COVID-19 Vaccine doses administered, there have been around 210 preliminary reports of GBS identified in VAERS as of September 22, 2021. These cases have largely been reported about 2 weeks after vaccination and mostly in men, many 50 years and older. CDC will continue to monitor for and evaluate reports of GBS occurring after COVID-19 vaccination and will share more information as it becomes available.
- **Myocarditis and pericarditis after COVID-19 vaccination are rare.** As of September 22, 2021, VAERS has received 1,541 reports of myocarditis or pericarditis among people ages 30 and younger who received COVID-19 vaccine. Most cases have been reported after mRNA COVID-19 vaccination (Pfizer-BioNTech or Moderna), particularly in male adolescents and young adults. Through follow-up, including medical record reviews, CDC and FDA have confirmed 892 reports of myocarditis or pericarditis. CDC and its partners are investigating these reports to assess whether there is a relationship to COVID-19 vaccination. Learn more about COVID-19 vaccines and myocarditis.
- **Reports of death after COVID-19 vaccination are rare.** More than 390 million doses of COVID-19 vaccines were administered in the United States from December 14, 2020, through September 27, 2021. During this time, VAERS received 8,164 reports of death (0.0021%) among people who received a COVID-19 vaccine. FDA requires healthcare providers to report any death after COVID-19 vaccination to VAERS, even if it's unclear whether the vaccine was the cause. **Reports of adverse events to VAERS following vaccination, including deaths, do not necessarily mean that a vaccine caused a health problem.** A review of available clinical information, including death certificates, autopsy, and medical records, has not established a causal link to COVID-19 vaccines. However, recent reports indicate a plausible causal relationship between the J&J/Janssen COVID-19 Vaccine and TTS, a rare and serious adverse event—blood clots with low platelets—which has caused deaths  [1.4 MB, 40 pages].

Related Pages

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- › [Vaccine Adverse Event Reporting System \(VAERS\): What Reports Mean and How VAERS Works](#)

Last Updated Sept. 27, 2021

Content source: National Center for Immunization
and Respiratory Diseases (NCIRD), Division of Viral
Diseases



COVID-19

Selected Adverse Events Reported after COVID-19 Vaccination

Updated Oct. 18, 2021

[Print](#)

Safety of COVID-19 Vaccines

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- Millions of people in the United States have received COVID-19 vaccines under the most intense safety monitoring in U.S. history.
- CDC recommends everyone 12 years and older get vaccinated as soon as possible to help protect against COVID-19 and the related, potentially severe complications that can occur.
- CDC, the U.S. Food and Drug Administration (FDA), and other federal agencies are monitoring the safety of COVID-19 vaccines.
- Adverse events described on this page have been reported to the Vaccine Adverse Event Reporting System (VAERS) [↗](#).
- VAERS accepts reports of any adverse event following any vaccination.
- Reports of adverse events to VAERS following vaccination, including deaths, do not necessarily mean that a vaccine caused a health problem.

Serious adverse events after COVID-19 vaccination are rare but may occur.

For public awareness and in the interest of transparency, CDC is providing timely updates on the following serious adverse events of interest:

- **Anaphylaxis after COVID-19 vaccination is rare** and has occurred in approximately 2 to 5 people per million vaccinated in the United States. Severe allergic reactions, including anaphylaxis, can occur after any vaccination. If this

occurs, vaccination providers can effectively and immediately treat the reaction. Learn more about COVID-19 vaccines and allergic reactions, including anaphylaxis.

- **Thrombosis with thrombocytopenia syndrome (TTS) after Johnson & Johnson's Janssen (J&J/Janssen) COVID-19 vaccination is rare.** As of October 13, 2021, more than 15.2 million doses of the J&J/Janssen COVID-19 Vaccine have been given in the United States. CDC and FDA identified 47 confirmed reports of people who got the J&J/Janssen COVID-19 Vaccine and later developed TTS. Women younger than 50 years old especially should be aware of the rare but increased risk of this adverse event. There are other COVID-19 vaccine options available for which this risk has not been seen. Learn more about J&J/Janssen COVID-19 Vaccine and TTS.
 - To date, two confirmed cases of TTS following mRNA COVID-19 vaccination (Moderna) have been reported to VAERS after more than 388 million doses of mRNA COVID-19 vaccines administered in the United States. Based on available data, there is not an increased risk for TTS after mRNA COVID-19 vaccination.
- CDC and FDA are monitoring reports of Guillain-Barré Syndrome (GBS) in people who have received the J&J/Janssen COVID-19 Vaccine. GBS is a rare disorder where the body's immune system damages nerve cells, causing muscle weakness and sometimes paralysis. Most people fully recover from GBS, but some have permanent nerve damage. After more than 15.2 million J&J/Janssen COVID-19 Vaccine doses administered, there have been around 233 preliminary reports of GBS identified in VAERS as of October 13, 2021. These cases have largely been reported about 2 weeks after vaccination and mostly in men, many 50 years and older. CDC will continue to monitor for and evaluate reports of GBS occurring after COVID-19 vaccination and will share more information as it becomes available.
- **Myocarditis and pericarditis after COVID-19 vaccination are rare.** As of October 13, 2021, VAERS has received 1,638 reports of myocarditis or pericarditis among people ages 30 and younger who received COVID-19 vaccine. Most cases have been reported after mRNA COVID-19 vaccination (Pfizer-BioNTech or Moderna), particularly in male adolescents and young adults. Through follow-up, including medical record reviews, CDC and FDA have confirmed 945 reports of myocarditis or pericarditis. CDC and its partners are investigating these reports to assess whether there is a relationship to COVID-19 vaccination. Learn more about COVID-19 vaccines and myocarditis.
- **Reports of death after COVID-19 vaccination are rare.** More than 408 million doses of COVID-19 vaccines were administered in the United States from December 14, 2020, through October 18, 2021. During this time, VAERS received **8,878** reports of death (0.0022%) among people who received a COVID-19 vaccine. FDA requires healthcare providers to report any death after COVID-19 vaccination to VAERS, even if it's unclear whether the vaccine was the cause. **Reports of adverse events to VAERS following vaccination, including deaths, do not necessarily mean that a vaccine caused a health problem.** A review of available clinical information, including death certificates, autopsy, and medical records, has not established a causal link to COVID-19 vaccines. However, recent reports indicate a plausible causal relationship between the J&J/Janssen COVID-19 Vaccine and TTS, a rare and serious adverse event—blood clots with low platelets—which has caused deaths 
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Last Updated Oct. 18, 2021

Content source: National Center for Immunization
and Respiratory Diseases (NCIRD), Division of Viral
Diseases



COVID-19

Selected Adverse Events Reported after COVID-19 Vaccination

Updated Nov. 1, 2021

Safety of COVID-19 Vaccines

Some people have no side effects. Many people have reported side effects that may affect their ability to do daily activities, but they should go away within a few days.

What You Need to Know


- COVID-19 vaccines are **safe and effective**.
- Millions of people in the United States have received COVID-19 vaccines under the most intense safety monitoring in U.S. history.
- CDC recommends everyone 12 years and older get vaccinated as soon as possible to help protect against COVID-19 and the related, potentially severe complications that can occur.
- CDC, the U.S. Food and Drug Administration (FDA), and other federal agencies are monitoring the safety of COVID-19 vaccines.
- Adverse events described on this page have been reported to the Vaccine Adverse Event Reporting System (VAERS) [↗](#).
- VAERS accepts reports of any adverse event following any vaccination.
- Reports of adverse events to VAERS following vaccination, including deaths, do not necessarily mean that a vaccine caused a health problem.

Serious adverse events after COVID-19 vaccination are rare but may occur.

For public awareness and in the interest of transparency, CDC is providing timely updates on the following serious adverse events of interest:

- **Anaphylaxis after COVID-19 vaccination is rare** and has occurred in approximately 2 to 5 people per million vaccinated in the United States. Severe allergic reactions, including anaphylaxis, can occur after any vaccination. If this

occurs, vaccination providers can effectively and immediately treat the reaction. Learn more about COVID-19 vaccines and allergic reactions, including anaphylaxis.

- **Thrombosis with thrombocytopenia syndrome (TTS) after Johnson & Johnson's Janssen (J&J/Janssen) COVID-19 vaccination is rare.** As of October 27, 2021, more than 15.5 million doses of the J&J/Janssen COVID-19 Vaccine have been given in the United States. CDC and FDA identified 48 confirmed reports of people who got the J&J/Janssen COVID-19 Vaccine and later developed TTS. Women younger than 50 years old especially should be aware of the rare but increased risk of this adverse event. There are other COVID-19 vaccine options available for which this risk has not been seen. Learn more about J&J/Janssen COVID-19 Vaccine and TTS.
 - To date, two confirmed cases of TTS following mRNA COVID-19 vaccination (Moderna) have been reported to VAERS after more than 401 million doses of mRNA COVID-19 vaccines administered in the United States. Based on available data, there is not an increased risk for TTS after mRNA COVID-19 vaccination.
- CDC and FDA are monitoring reports of Guillain-Barré Syndrome (GBS) in people who have received the J&J/Janssen COVID-19 Vaccine. GBS is a rare disorder where the body's immune system damages nerve cells, causing muscle weakness and sometimes paralysis. Most people fully recover from GBS, but some have permanent nerve damage. After more than 15.5 million J&J/Janssen COVID-19 Vaccine doses administered, there have been around 244 preliminary reports of GBS identified in VAERS as of October 27, 2021. These cases have largely been reported about 2 weeks after vaccination and mostly in men, many 50 years and older. CDC will continue to monitor for and evaluate reports of GBS occurring after COVID-19 vaccination and will share more information as it becomes available.
- **Myocarditis and pericarditis after COVID-19 vaccination are rare.** As of October 27, 2021, VAERS has received 1,784 reports of myocarditis or pericarditis among people ages 30 and younger who received COVID-19 vaccine. Most cases have been reported after mRNA COVID-19 vaccination (Pfizer-BioNTech or Moderna), particularly in male adolescents and young adults. Through follow-up, including medical record reviews, CDC and FDA have confirmed 1,005 reports of myocarditis or pericarditis. CDC and its partners are investigating these reports to assess whether there is a relationship to COVID-19 vaccination. Learn more about COVID-19 vaccines and myocarditis.
- **Reports of death after COVID-19 vaccination are rare.** More than 423 million doses of COVID-19 vaccines were administered in the United States from December 14, 2020, through November 1, 2021. During this time, VAERS received **9,367** reports of death (0.0022%) among people who received a COVID-19 vaccine. FDA requires healthcare providers to report any death after COVID-19 vaccination to VAERS, even if it's unclear whether the vaccine was the cause. **Reports of adverse events to VAERS following vaccination, including deaths, do not necessarily mean that a vaccine caused a health problem.** A review of available clinical information, including death certificates, autopsy, and medical records, has not established a causal link to COVID-19 vaccines. However, recent reports indicate a plausible causal relationship between the J&J/Janssen COVID-19 Vaccine and TTS, a rare and serious adverse event—blood clots with low platelets—which has caused deaths  [1.4 MB, 33 pages].

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Last Updated Nov. 1, 2021

Content source: National Center for Immunization
and Respiratory Diseases (NCIRD), Division of Viral
Diseases



COVID-19

Selected Adverse Events Reported after COVID-19 Vaccination

Updated Nov. 10, 2021

NOTICE: CDC now recommends that children between the ages of 5 and 11 years receive the Pfizer-BioNTech pediatric COVID-19 Vaccine. Learn more about vaccines for children and teens.

Safety of COVID-19 Vaccines

Some people have no side effects. Many people have reported side effects that are generally mild to moderate and should go away within a few days.


What You Need to Know

- COVID-19 vaccines are **safe and effective**.
- Millions of people in the United States have received COVID-19 vaccines under the most intense safety monitoring in U.S. history.
- CDC recommends everyone ages 5 years and older get vaccinated as soon as possible to help protect against COVID-19 and the related, potentially severe complications that can occur.
- CDC, the U.S. Food and Drug Administration (FDA), and other federal agencies are monitoring the safety of COVID-19 vaccines.
- Adverse events described on this page have been reported to the Vaccine Adverse Event Reporting System (VAERS) [↗](#).
- VAERS accepts reports of any adverse event following any vaccination.
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Serious adverse events after COVID-19 vaccination are rare but may occur.

For public awareness and in the interest of transparency, CDC is providing timely updates on the following serious adverse events of interest:

- **Anaphylaxis, a severe type of allergic reaction, following administration of COVID-19 vaccination is rare** and has occurred in approximately 2 to 5 people per million vaccinated in the United States. Anaphylaxis can occur after any kind of vaccination. If it happens, healthcare providers can effectively and immediately treat the reaction. Learn more about COVID-19 vaccines and allergic reactions, including anaphylaxis.
- **Thrombosis with thrombocytopenia syndrome (TTS) occurring after Johnson & Johnson's Janssen (J&J/Janssen) COVID-19 vaccination is rare.** As of November 4, 2021, more than 15.7 million doses of the J&J/Janssen COVID-19 vaccine have been given in the United States. CDC and FDA have identified 50 confirmed reports of people who got the J&J/Janssen COVID-19 vaccine and later developed TTS, including 5 confirmed reports of death. Women ages 18-49, especially, should be aware of the rare but increased risk of this adverse event. There are other COVID-19 vaccine options available for which this risk has not been seen. Learn more about J&J/Janssen COVID-19 vaccine and TTS.
 - To date, two confirmed cases of TTS following mRNA COVID-19 vaccination (Moderna) have been reported to VAERS after more than 409 million doses of mRNA COVID-19 vaccines administered in the United States. Based on available data, there is not an increased risk for TTS after mRNA COVID-19 vaccination.
- CDC and FDA are monitoring reports of Guillain-Barré Syndrome (GBS) in people who have received the J&J/Janssen COVID-19 vaccine. GBS is a rare disorder where the body's immune system damages nerve cells, causing muscle weakness and sometimes paralysis. Most people fully recover from GBS, but some have permanent nerve damage. After more than 15.7 million J&J/Janssen COVID-19 vaccine doses administered, there have been around 250 preliminary reports of GBS identified in VAERS as of November 4, 2021. These cases have largely been reported about 2 weeks after vaccination and mostly in men, many ages 50 years and older. CDC will continue to monitor for and evaluate reports of GBS occurring after COVID-19 vaccination and will share more information as it becomes available.
- **Myocarditis and pericarditis occurring after COVID-19 vaccination are rare.** As of November 4, 2021, VAERS has received 1,783 reports of myocarditis or pericarditis among people ages 12–29 years who received COVID-19 vaccines. Most cases have been reported after mRNA COVID-19 vaccination (Pfizer-BioNTech or Moderna), particularly in male adolescents and young adults after the second dose. Through follow-up, including medical record reviews, CDC and FDA have confirmed 1,031 reports of myocarditis or pericarditis. Learn more about myocarditis and pericarditis after mRNA COVID-19 vaccination.
- **Reports of death after COVID-19 vaccination are rare.** More than 432 million doses of COVID-19 vaccines were administered in the United States from December 14, 2020, through November 8, 2021. During this time, VAERS received 9,549 reports of death (0.0022%) among people who received a COVID-19 vaccine. FDA requires healthcare providers to report any death after COVID-19 vaccination to VAERS, even if it's unclear whether the vaccine was the cause. **Reports of adverse events to**

causal link to COVID-19 vaccines. However, recent reports indicate a plausible causal relationship between the J&J/Janssen COVID-19 vaccine and TTS, a rare and serious adverse event that causes blood clots with low platelets, which has caused 5 deaths  [1,438 KB, 33 pages].

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Last Updated Nov. 10, 2021

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and Respiratory Diseases (NCIRD), Division of Viral
Diseases



COVID-19

Selected Adverse Events Reported after COVID-19 Vaccination

Updated Nov. 16, 2021

NOTICE: CDC now recommends that children between the ages of 5 and 11 years receive the Pfizer-BioNTech pediatric COVID-19 Vaccine. Learn more about vaccines for children and teens.

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- **Anaphylaxis, a severe type of allergic reaction, following administration of COVID-19 vaccination is rare** and has occurred in approximately 2 to 5 people per million vaccinated in the United States. Anaphylaxis can occur after any kind of vaccination. If it happens, healthcare providers can effectively and immediately treat the reaction. Learn more about COVID-19 vaccines and allergic reactions, including anaphylaxis.
- **Thrombosis with thrombocytopenia syndrome (TTS) occurring after Johnson & Johnson's Janssen (J&J/Janssen) COVID-19 vaccination is rare.** As of November 10, 2021, more than 16 million doses of the J&J/Janssen COVID-19 vaccine have been given in the United States. CDC and FDA have identified 50 confirmed reports of people who got the J&J/Janssen COVID-19 vaccine and later developed TTS, including 5 confirmed reports of death. Women ages 18-49, especially, should be aware of the rare but increased risk of this adverse event. There are other COVID-19 vaccine options available for which this risk has not been seen. Learn more about J&J/Janssen COVID-19 vaccine and TTS.
 - To date, two confirmed cases of TTS following mRNA COVID-19 vaccination (Moderna) have been reported to VAERS after more than 418 million doses of mRNA COVID-19 vaccines administered in the United States. Based on available data, there is not an increased risk for TTS after mRNA COVID-19 vaccination.
- CDC and FDA are monitoring reports of Guillain-Barré Syndrome (GBS) in people who have received the J&J/Janssen COVID-19 vaccine. GBS is a rare disorder where the body's immune system damages nerve cells, causing muscle weakness and sometimes paralysis. Most people fully recover from GBS, but some have permanent nerve damage. After more than 16 million J&J/Janssen COVID-19 vaccine doses administered, there have been around 258 preliminary reports of GBS identified in VAERS as of November 10, 2021. These cases have largely been reported about 2 weeks after vaccination and mostly in men, many ages 50 years and older. CDC will continue to monitor for and evaluate reports of GBS occurring after COVID-19 vaccination and will share more information as it becomes available.
- **Myocarditis and pericarditis occurring after COVID-19 vaccination are rare.** As of November 10, 2021, VAERS has received 1,793 reports of myocarditis or pericarditis among people ages 12-29 years who received COVID-19 vaccines. Most cases have been reported after mRNA COVID-19 vaccination (Pfizer-BioNTech or Moderna), particularly in male adolescents and young adults after the second dose. Through follow-up, including medical record reviews, CDC and FDA have confirmed 1,049 reports of myocarditis or pericarditis. Learn more about myocarditis and pericarditis after mRNA COVID-19 vaccination.
- **Reports of death after COVID-19 vaccination are rare.** More than 442 million doses of COVID-19 vaccines were administered in the United States from December 14, 2020, through November 15, 2021. During this time, VAERS received 9,810 reports of death (0.0022%) among people who received a COVID-19 vaccine. FDA requires healthcare providers to report any death after COVID-19 vaccination to VAERS, even if it's unclear whether the vaccine was the cause. **Reports of adverse events to VAERS following vaccination, including deaths, do not necessarily mean that a vaccine caused a health problem.** A review of available clinical information, including death certificates, autopsy, and medical records has not

established a causal link to COVID-19 vaccines. However, recent reports indicate a plausible causal relationship between the J&J/Janssen COVID-19 vaccine and TTS, a rare and serious adverse event that causes blood clots with low platelets, which has caused 5 deaths  [1,438 KB, 33 pages].

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Last Updated Nov. 16, 2021

Content source: National Center for Immunization
and Respiratory Diseases (NCIRD), Division of Viral
Diseases



COVID-19

Selected Adverse Events Reported after COVID-19 Vaccination

Updated Nov. 30, 2021

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a severe type of allergic reaction, can occur after any kind of vaccination. If it happens, healthcare providers can effectively and immediately treat the reaction. Learn more about COVID-19 vaccines and allergic reactions, including anaphylaxis.

- **Thrombosis with thrombocytopenia syndrome (TTS) after Johnson & Johnson's Janssen (J&J/Janssen) COVID-19 Vaccination is rare.** As of November 24, 2021, more than 16.4 million doses of the J&J/Janssen COVID-19 Vaccine have been given in the United States. CDC and FDA identified 54 confirmed reports of people who got the J&J/Janssen COVID-19 Vaccine and later developed TTS. Women younger than 50 years old especially should be aware of the rare but increased risk of this adverse event. There are other COVID-19 vaccine options available for which this risk has not been seen. Learn more about J&J/Janssen COVID-19 Vaccine and TTS.
 - To date, two confirmed cases of TTS following mRNA COVID-19 vaccination (Moderna) have been reported to VAERS after more than 437 million of mRNA COVID-19 vaccines administered in the United States. Based on available data, there is not an increased risk for TTS after mRNA COVID-19 vaccination.
- **CDC and FDA are monitoring reports of Guillain-Barré Syndrome (GBS) in people who have received the J&J/Janssen COVID-19 Vaccine.** GBS is a rare disorder where the body's immune system damages nerve cells, causing muscle weakness and sometimes paralysis. Most people fully recover from GBS, but some have permanent nerve damage. After more than 16.4 million J&J/Janssen COVID-19 Vaccine doses administered, there have been around 268 preliminary reports of GBS identified in VAERS as of November 24, 2021. These cases have largely been reported about 2 weeks after vaccination and mostly in men, many 50 years and older. CDC will continue to monitor for and evaluate reports of GBS occurring after COVID-19 vaccination and will share more information as it becomes available.
- **Myocarditis and pericarditis after COVID-19 vaccination are rare.** As of November 24, 2021, VAERS has received 1,949 reports of myocarditis or pericarditis among people ages 30 and younger who received COVID-19 vaccine. Most cases have been reported after mRNA COVID-19 vaccination (Pfizer-BioNTech or Moderna), particularly in male adolescents and young adults. Through follow-up, including medical record reviews, CDC and FDA have confirmed 1,071 reports of myocarditis or pericarditis. CDC and its partners are investigating these reports to assess whether there is a relationship to COVID-19 vaccination. Learn more about COVID-19 vaccines and myocarditis.
- **Reports of death after COVID-19 vaccination are rare.** More than 459 million doses of COVID-19 vaccines were administered in the United States from December 14, 2020, through November 29, 2021. During this time, VAERS received 10,128 reports of death (0.0022%) among people who received a COVID-19 vaccine. FDA requires healthcare providers to report any death after COVID-19 vaccination to VAERS, even if it's unclear whether the vaccine was the cause. **Reports of adverse events to VAERS following vaccination, including deaths, do not necessarily mean that a vaccine caused a health problem.** CDC clinicians review reports of death to VAERS including death certificates, autopsy, and medical records. A review of reports indicates a causal relationship between the J&J/Janssen COVID-19 Vaccine and TTS, a rare and serious adverse event—that causes blood clots with low platelets—which has caused or directly contributed to six confirmed deaths [↗](#).

Related Pages

- › [Safety of COVID-19 Vaccines](#)
- › [Vaccine Adverse Event Reporting System \(VAERS\): What Reports Mean and How VAERS Works](#)

Last Updated Nov. 30, 2021

Content source: National Center for Immunization
and Respiratory Diseases (NCIRD), Division of Viral
Diseases



COVID-19

Selected Adverse Events Reported after COVID-19 Vaccination

Updated Dec. 16, 2021

CDC has updated its recommendations for COVID-19 vaccines with a preference for people to receive an mRNA COVID-19 vaccine (Pfizer-BioNTech and Moderna). Read CDC's media statement.

Safety of COVID-19 Vaccines

Some people have no side effects. Many people have reported side effects that are generally mild to moderate and should go away within a few days.

What You Need to Know

- COVID-19 vaccines are **safe and effective**.
- CDC recommends everyone ages 5 years and older get vaccinated as soon as possible to help protect against COVID-19 and the related, potentially severe complications that can occur.
- Millions of people in the United States have received COVID-19 vaccines under the most intense safety monitoring in U.S. history.
- CDC, the U.S. Food and Drug Administration (FDA), and other federal agencies are monitoring the safety of COVID-19 vaccines.
- Adverse events described on this page have been reported to the Vaccine Adverse Event Reporting System (VAERS) [↗](#).
- VAERS accepts reports of any adverse event following vaccination.
- Reports of adverse events to VAERS following vaccination, including deaths, do not necessarily mean that a vaccine caused a health problem.

Serious adverse events after COVID-19 vaccination are rare but may occur.

For public awareness and in the interest of transparency, CDC is providing timely updates on the following serious adverse events of interest:

- **Anaphylaxis after COVID-19 vaccination is rare** and has occurred in approximately 2 to 5 people per one million vaccinated in the United States. Anaphylaxis, a severe type of allergic reaction, can occur after any kind of vaccination. If it happens, healthcare providers can effectively and immediately treat the reaction. Learn more about COVID-19 vaccines and allergic reactions, including anaphylaxis.
- **Thrombosis with thrombocytopenia syndrome (TTS) after Johnson & Johnson's Janssen (J&J/Janssen) COVID-19 Vaccination is rare.** TTS is a serious, but rare, adverse event that causes blood clots with low platelets. As of December 8, 2021, more than 16.9 million doses of the J&J/Janssen COVID-19 Vaccine have been given in the United States. CDC and FDA identified 57 confirmed reports of people who got the J&J/Janssen COVID-19 Vaccine and later developed TTS. VAERS reports have identified nine deaths that have been caused by or were directly attributed to TTS following J&J/Janssen COVID-19 Vaccination. Women ages 18-49 years, especially, should be aware of the rare but increased risk of this adverse event. There are other COVID-19 vaccine options available for which this risk has not been seen.
 - To date, three confirmed cases of TTS following mRNA COVID-19 vaccination (Moderna) have been reported to VAERS after more than 458 million doses of mRNA COVID-19 vaccines administered in the United States. Based on available data, there is not an increased risk for TTS after mRNA COVID-19 vaccination.
- **Guillain-Barré Syndrome (GBS) in people who have received the J&J/Janssen COVID-19 Vaccine is rare.** GBS is a rare disorder where the body's immune system damages nerve cells, causing muscle weakness and sometimes paralysis. Most people fully recover from GBS, but some have permanent nerve damage. CDC and FDA are monitoring reports of GBS after J&J/Janssen COVID-19 Vaccination. After more than 16.9 million J&J/Janssen COVID-19 Vaccine doses administered, there have been around 278 preliminary reports of GBS identified in VAERS as of December 8, 2021. These cases have largely been reported about 2 weeks after vaccination and mostly in men, many ages 50 years and older. CDC will continue to monitor for and evaluate reports of GBS occurring after COVID-19 vaccination and will share more information as it becomes available.
- **Myocarditis and pericarditis after COVID-19 vaccination are rare.** Myocarditis is inflammation of the heart muscle, and pericarditis is inflammation of the outer lining of the heart. Most patients with myocarditis or pericarditis who received care responded well to medicine and rest and felt better quickly. As of December 8, 2021, VAERS has received 1,908 reports of myocarditis or pericarditis among people ages 12-29 years who received COVID-19 vaccines. Most cases have been reported after mRNA COVID-19 vaccination (Pfizer-BioNTech or Moderna), particularly in male adolescents and young adults. Through follow-up, including medical record reviews, CDC and FDA have confirmed 1,106 reports of myocarditis or pericarditis. CDC and its partners are investigating these reports to assess whether there is a relationship to COVID-19 vaccination. Learn more about myocarditis and pericarditis, including clinical considerations, after mRNA COVID-19 vaccination.
- **Reports of death after COVID-19 vaccination are rare.** FDA requires healthcare providers to report any death after COVID-19 vaccination to VAERS, even if it's unclear whether the vaccine was the cause. **Reports of adverse events to VAERS**

following vaccination, including deaths, do not necessarily mean that a vaccine caused a health problem. More than 485 million doses of COVID-19 vaccines were administered in the United States from December 14, 2020, through December 13, 2021. During this time, VAERS received 10,483 reports of death (0.0022%) among people who received a COVID-19 vaccine. CDC clinicians review reports of death to VAERS including death certificates, autopsy, and medical records.

A review of reports indicates a causal relationship between the J&J/Janssen COVID-19 Vaccine and TTS. On November 14, 2021, CDC scientists released a comprehensive review [\[link\]](#) of reported U.S. cases through August. Continued monitoring has identified additional deaths for a total of nine deaths causally associated with J&J COVID-19 Vaccination. CDC and FDA continue to review reports of death following COVID-19 vaccination and update information as it becomes available.

Related Pages

- › [Safety of COVID-19 Vaccines](#)
- › [Vaccine Adverse Event Reporting System \(VAERS\): What Reports Mean and How VAERS Works](#)

Last Updated Dec. 16, 2021
Content source: National Center for Immunization
and Respiratory Diseases (NCIRD), Division of Viral
Diseases



COVID-19

Selected Adverse Events Reported after COVID-19 Vaccination

Updated Dec. 28, 2021

CDC has updated its recommendations for COVID-19 vaccines with a preference for people to receive an mRNA COVID-19 vaccine (Pfizer-BioNTech and Moderna). Read CDC's media statement.

Safety of COVID-19 Vaccines

Some people have no side effects. Many people have reported side effects that are generally mild to moderate and go away within a few days.

What You Need to Know

- COVID-19 vaccines are **safe and effective**.
- CDC recommends everyone ages 5 years and older get vaccinated as soon as possible to protect against COVID-19 and its potentially severe complications. CDC has updated its recommendation for COVID-19 vaccines with a preference for mRNA vaccines (Pfizer-BioNTech and Moderna).
- Millions of people in the United States have received COVID-19 vaccines under the most intense safety monitoring program in U.S. history.
- CDC, the U.S. Food and Drug Administration (FDA), and other federal agencies continue to monitor the safety of COVID-19 vaccines.
- Adverse events described on this page have been reported to the Vaccine Adverse Event Reporting System (VAERS) [↗](#).
- VAERS accepts reports of any adverse event following vaccination.

Serious adverse events after COVID-19 vaccination are rare but may occur.

CDC is providing timely updates on the following serious adverse events of interest:

Anaphylaxis after COVID-19 vaccination is rare and has occurred in

- approximately 5 people per one million vaccinated in the United States. Anaphylaxis, a severe type of allergic reaction, can occur after any kind of vaccination. If it happens, healthcare providers can effectively and immediately treat the reaction. Learn more about COVID-19 vaccines and allergic reactions, including anaphylaxis.
- **Thrombosis with thrombocytopenia syndrome (TTS) after Johnson & Johnson's Janssen (J&J/Janssen) COVID-19 vaccination is rare.** TTS is a rare but serious adverse event that causes blood clots in large blood vessels and low platelets (blood cells that help form clots). As of December 16, 2021, more than 17.2 million doses of the J&J/Janssen COVID-19 vaccine have been given in the United States. CDC and FDA identified 57 confirmed reports of people who got the J&J/Janssen COVID-19 vaccine and later developed TTS.

CDC has also identified nine deaths that have been caused by or were directly attributed to TTS following J&J/Janssen COVID-19 vaccination. Women ages 30-49 years, especially, should be aware of the increased risk of this rare adverse event. There are other COVID-19 vaccine options available for which this risk has not been seen.

- To date, three confirmed cases of TTS following mRNA COVID-19 vaccination (Moderna) have been reported to VAERS after more than 470 million doses of mRNA COVID-19 vaccines administered in the United States. Based on available data, there is not an increased risk for TTS after mRNA COVID-19 vaccination.
- **Guillain-Barré Syndrome (GBS) in people who have received the J&J/Janssen COVID-19 vaccine is rare.** GBS is a rare disorder where the body's immune system damages nerve cells, causing muscle weakness and sometimes paralysis. Most people fully recover from GBS, but some have permanent nerve damage. After more than 17.2 million J&J/Janssen COVID-19 vaccine doses administered, there have been around 283 preliminary reports of GBS identified in VAERS as of December 16, 2021. These cases have largely been reported about 2 weeks after vaccination and mostly in men, many in those ages 50 years and older.

Based on the data, the rate of GBS within the first 21 days following J&J/Janssen COVID-19 vaccination was found to be 21 times higher than after Pfizer-BioNTech or Moderna (mRNA COVID-19 vaccines). After the first 42 days, the rate of GBS was 11 times higher following J&J/Janssen COVID-19 vaccination. Analysis found no increased risk of GBS after Pfizer-BioNTech or Moderna (mRNA COVID-19 vaccines). CDC and FDA will continue to monitor for and evaluate reports of GBS occurring after COVID-19 vaccination and will share more information as it becomes available.




- **Myocarditis and pericarditis after COVID-19 vaccination are rare.** Myocarditis is inflammation of the heart muscle, and pericarditis is inflammation of the outer lining of the heart. Most patients with myocarditis or pericarditis after COVID-19 vaccination responded well to medicine and rest and felt better quickly. As of December 16, 2021, VAERS has received 1,947 preliminary reports of myocarditis or pericarditis among people ages 30 years and younger who received COVID-19 vaccines.

Most cases have been reported after receiving Pfizer-BioNTech or Moderna, (mRNA COVID-19 vaccines) particularly in male adolescents and young adults. Through follow-up, including medical record reviews, CDC and FDA have verified 1,124 reports

of myocarditis or pericarditis. Learn more about myocarditis and pericarditis, including clinical considerations, after mRNA COVID-19 vaccination.

- **Reports of death after COVID-19 vaccination are rare.** FDA requires healthcare providers to report any death after COVID-19 vaccination to VAERS, even if it's unclear whether the vaccine was the cause. **Reports of adverse events to VAERS following vaccination, including deaths, do not necessarily mean that a vaccine caused a health problem.** More than 496 million doses of COVID-19 vaccines were administered in the United States from December 14, 2020, through December 20, 2021. During this time, VAERS received 10,688 reports of death (0.0022%) among people who received a COVID-19 vaccine. CDC and FDA clinicians review reports of death to VAERS including death certificates, autopsy, and medical records.

A review of reports indicates a causal relationship between the J&J/Janssen COVID-19 vaccine and TTS. CDC scientists have conducted detailed reviews of TTS cases and made the information available to healthcare providers and the public:

- [US Case Reports of Cerebral Venous Sinus Thrombosis With Thrombocytopenia After Ad26.COVS.2.S Vaccination, March 2 to April 21, 2021](#) 
- [Case Series of Thrombosis with Thrombocytopenia Syndrome following COVID-19 vaccination—United States, December 2020–August 2021](#) 
- [Updates on Thrombosis with Thrombocytopenia Syndrome \(TTS\)](#)  [1.3 MB, 39 Pages]

Continued monitoring has identified nine deaths causally associated with J&J/Janssen COVID-19 vaccination. CDC and FDA continue to review reports of death following COVID-19 vaccination and update information as it becomes available.

Related Pages

- › [Safety of COVID-19 Vaccines](#)
- › [Vaccine Adverse Event Reporting System \(VAERS\): What Reports Mean and How VAERS Works](#)

Last Updated Dec. 28, 2021

Content source: National Center for Immunization and Respiratory Diseases (NCIRD), Division of Viral Diseases