Nuvaxovid™
(COVID-19 Vaccine, Adjuvanted)

FORMULARY KIT

sanofi

INDICATION AND IMPORTANT SAFETY INFORMATION FOR NUVAXOVID™ (COVID-19 VACCINE, ADJUVANTED)

INDICATION

NUVAXOVID is a vaccine indicated for active immunization to prevent coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). NUVAXOVID is approved for use in individuals who are:

- 65 years of age and older, or
- 12 years through 64 years of age with at least one underlying condition that puts them at high risk for severe outcomes from COVID-19.

IMPORTANT SAFETY INFORMATION

CONTRAINDICATION

Do not administer NUVAXOVID to individuals with a known history of severe allergic reaction (e.g., anaphylaxis) to any component of NUVAXOVID or to individuals who had a severe allergic reaction (e.g.,anaphylaxis) following a previous dose of NUVAXOVID

MANAGEMENT OF ACUTE ALLERGIC REACTIONS

Appropriate medical treatment must be immediately available to manage potential anaphylactic reactions following administration of NUVAXOVID

MYOCARDITIS AND PERICARDITIS

Clinical trials data provide evidence for increased risks of myocarditis and pericarditis following administration of NUVAXOVID. There have been post-marketing reports of myocarditis and pericarditis following administration of NUVAXOVID

SYNCOPE

Syncope (fainting) may occur in association with administration of injectable vaccines, including NUVAXOVID. Procedures should be in place to avoid injury from fainting

ALTERED IMMUNOCOMPETENCE

Immunocompromised persons, including individuals receiving immunosuppressive therapy, may have a diminished immune response to NUVAXOVID

NUVAXOVID may not protect all vaccine recipients

COMMON ADVERSE REACTIONS

The most commonly reported (>10%) solicited adverse reactions included: injection site pain/tenderness, fatigue/malaise, muscle pain, headache, nausea/vomiting, fever, and joint pain

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EXECUTIVE SUMMARY

COVID-19: AN ONGOING PUBLIC HEALTH THREAT

COVID-19 is a highly contagious viral illness caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).[1]

THE COVID-19 TIMELINE

DECEMBER 2019[2]
First COVID-19 cases detected in Wuhan, China

MARCH 11, 2020[2]
World Health Organization declares COVID-19 a global pandemic

BY NOVEMBER 2025[3]
COVID-19 led to >7 million deaths worldwide, with >1.2 million deaths in the US

COVID-19 cases have since consistently peaked in both winter and late summer.[4]

THE IMPACT OF COVID-19

Populations with elevated risk for serious outcomes from COVID-19[5,6]

- People aged ≥65 years account for >2 out of 3 COVID-19–related hospitalizations and >81% of deaths
- People with certain underlying conditions

Long COVID[7,8]

Long COVID affects 10% to 30% of nonhospitalized patients with COVID-19.

Symptoms of long COVID

- Continue ≥3 months after initial infection
- Range from mild to severe

COVID-19 hospitalization rates in context (2023-2024 and 2024-2025 seasons)[9,a]

- Cumulative COVID-19 hospitalization rates were greater than influenza hospitalization rates across 2 seasons

THE COVID-19 IMMUNIZATION GAP

Despite the demonstrated ability of COVID-19 immunization to prevent severe outcomes[10,11]

- Only 22.9% of adults aged ≥18 years and 43.8% of adults aged ≥65 years received a COVID-19 vaccine in the 2024-2025 season[10,11]
- People of certain racial and ethnic groups have lower vaccination coverage rates than White people[12]
- Most people hospitalized with COVID-19 in recent seasons were unvaccinated[5]

In a national survey, the leading reasons given by people who chose to forgo COVID-19 immunization were[13]:

- Concerns about side effects
- Distrust of vaccines in general

[a]Data for full epidemiologic year from October 2024-October 2025. Influenza data available through May 2025.[9]

Abbreviations: FDA, US Food and Drug Administration; mRNA, messenger ribonucleic acid.

OVERVIEW OF COVID-19

WHAT IS COVID-19?

Coronavirus disease 2019 (COVID-19) is a highly contagious viral illness caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).[1]

SARS-CoV-2 is an RNA virus and has a relatively high mutation rate that allows it to continually adapt and replicate in each new human host. Since the beginning of the COVID-19 pandemic, SARS-CoV-2 has evolved through random mutations in its genetic sequence, with new lineages and sublineages carrying the ability to affect clinical presentation, disease severity, and transmissibility rates.[14]

Updated COVID-19 vaccines are formulated to protect against likely variants for the upcoming year. The FDA holds decision-making authority on the strain selection for updated COVID-19 vaccines. The FDA's recommendation for 2025-2026 COVID-19 formulations is to use a monovalent JN.1-lineage–based COVID-19 vaccine, preferentially using the LP.8.1 strain.[15,16]

TRANSMISSION

SARS-CoV-2 is primarily transmitted in 3 ways[17]:

Direct or indirect contact
Direct or indirect contact with the mucous membranes of the eyes, ears, or mouth of a person with COVID-19

Aerosols
Pathogen-filled suspensions of small particles that travel through air and enter the mucous membrane of the eyes, ears, and mouth of another person

Large droplets
A cough or sneeze from a person with COVID-19 releasing large droplets harboring the SARS-CoV-2 virus

Viral shedding can occur in asymptomatic individuals, during symptomatic illness, and after symptom resolution. Presymptomatic virus shedding, which occurs not only by coughing and sneezing, but also through talking, eating, and exhaling, has been reported to cause as much as 62% of transmission (range: 9.1%-62%).[18]

Abbreviations: FDA, US Food and Drug Administration; RNA, ribonucleic acid.

WHAT IS COVID-19? (cont'd)

COVID-19 SYMPTOMS

COVID-19 symptoms may be classified as mild, moderate, or severe, and include the following[19]

- Fever or chills
- Cough
- Shortness of breath
- Sore throat
- Congestion or runny nose
- New loss of taste or smell
- Fatigue
- Muscle or body aches
- Headache
- Nausea or vomiting
- Diarrhea

Signs of severe illness include[19]

- Trouble breathing
- Persistent pain or pressure in the chest
- New confusion
- Inability to wake or stay awake
- Pale, gray, or blue lips, nail beds, and skin (depending on skin tone)

An individual who becomes infected with SARS-CoV-2 may start with mild symptoms and progress to more severe symptoms. Anyone infected with COVID-19 can subsequently develop what has become known as long COVID, defined as symptoms persisting for ≥3 months after initial infection. As new COVID-19 variants emerge, predominant symptoms may change.[8,19]

Abbreviation: SARS-CoV-2, severe acute respiratory syndrome coronavirus 2.

MECHANISM OF DISEASE

During initial infection with SARS-CoV-2, the viral spike protein gains entry after binding to angiotensin-converting enzyme 2 (ACE2) receptors on host cells. ACE2 is a widely expressed protein on the cell membranes of many vital organs.[18]

VIRAL ENTRY AND INFECTION PROCESS[18]

ATTACHMENT
The spike protein first binds to ACE2 cell receptors, such as those found on nasal cells, bronchial epithelial cells, and pneumocytes.

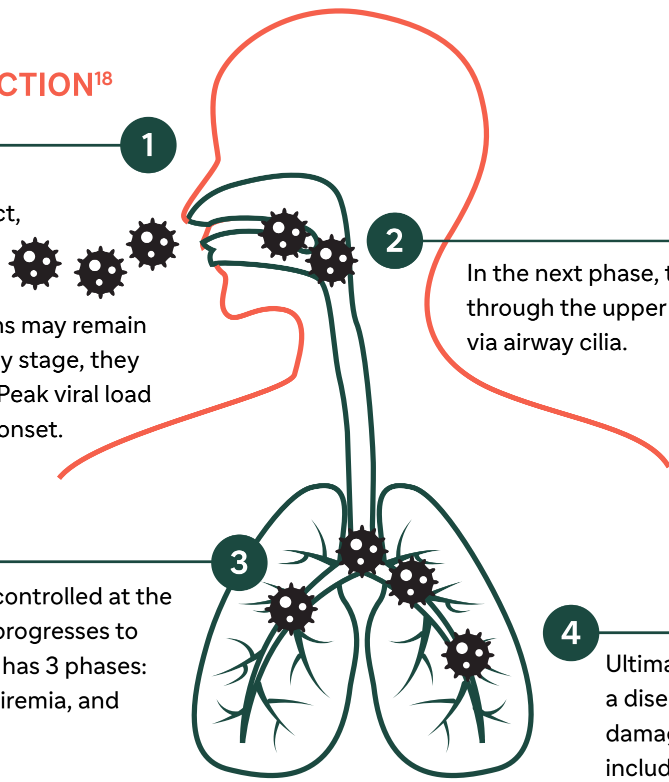
PRIMING
Once bound to ACE2, the spike protein encounters another enzyme, which changes the spike protein shape and allows it to fuse with the cell membrane.

FUSION
As the virus membrane fuses with host cells, viral RNA enters the cells.

REPLICATION
Viral RNA becomes a template for the cell to produce more viral proteins and RNA.

ASSEMBLY AND RELEASE
New viral proteins and RNA assemble as viral particles, which are subsequently released to infect other host cells.

PROGRESSION OF SARS-COV-2 INFECTION[18]



1 SARS-CoV-2 first enters the upper respiratory tract, affecting nasal passages and upper airways.

Although infected persons may remain asymptomatic at this early stage, they can be highly infectious. Peak viral load coincides with symptom onset.

2 In the next phase, the virus spreads through the upper respiratory tract via airway cilia.

3 When the virus is not controlled at the early stage, infection progresses to clinical disease, which has 3 phases: acute or pneumonia, viremia, and lethal/recovery.

4 Ultimately, SARS-CoV-2 sets off a disease cascade that can inflict damage on multiple vital organs, including the heart, kidneys, brain, liver, and gastrointestinal tract.

Abbreviations: RNA, ribonucleic acid; SARS-CoV-2, severe acute respiratory syndrome coronavirus 2.

EPIDEMIOLOGY OF COVID-19

After the first cases of this predominantly respiratory illness were reported in late December 2019, SARS-CoV-2 rapidly disseminated worldwide. By March 11, 2020, this compelled the World Health Organization to declare COVID-19 a global pandemic.[2] Since that time, COVID-19 continues to spread, resulting in >7 million deaths worldwide and, in the United States alone, >1.2 million deaths as of November 1, 2025.[3]

Preliminary US COVID-19 Burden Estimate for [2024-2025][20]
([October 1, 2024 through September 20, 2025])

[

13.8-20.3 million
Illnesses

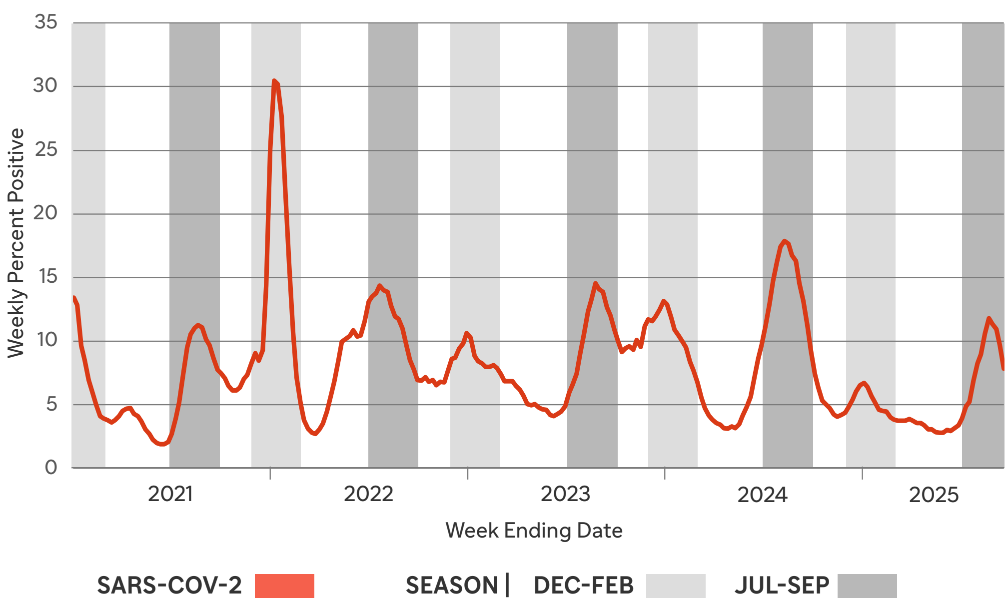
3.3-4.8 million
Outpatient visits

380,000-540,000
Hospitalizations

44,000-63,000
Deaths

]

Weekly Percentage of Tests Positive for SARS-CoV-2 Reported to NREVSS



On a weekly basis, participating US laboratories voluntarily report the total number of COVID-19 tests performed, and the percentage of tests that were positive, to the CDC. This report was last updated on December 1, 2025.[4]

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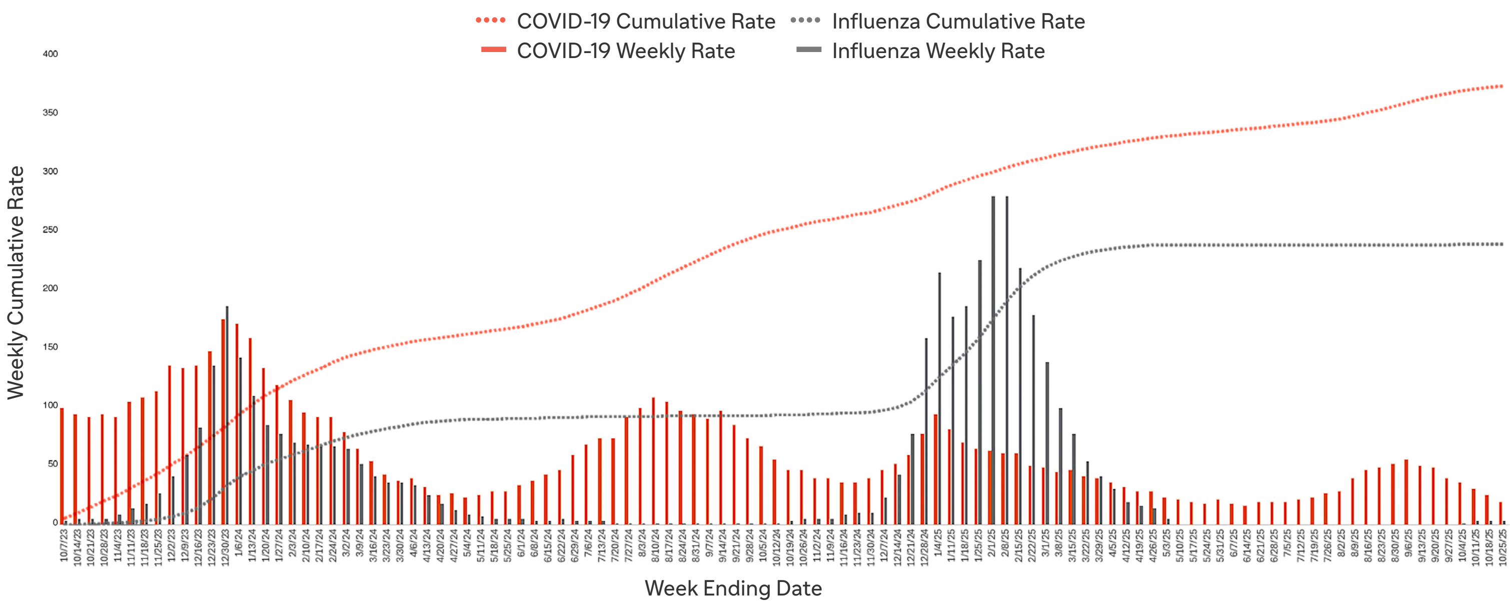
Unlike influenza and respiratory syncytial virus, COVID-19 has no distinct season. Since the start of the pandemic, COVID-19 has consistently peaked in both winter and late summer.[4]

Abbreviations: CDC, Centers for Disease Control and Prevention; NREVSS, National Respiratory and Enteric Virus Surveillance System; SARS-CoV-2, severe acute respiratory syndrome coronavirus 2.

CLINICAL BURDEN

Between 2023 and 2025, a period that included one of the worst influenza seasons on record, cumulative hospitalization rates were higher for COVID-19 than for influenza in adults aged ≥18 years.[9,a]

Weekly and Cumulative Rates of Hospitalization Due to COVID-19 and Influenza (October 2023-October 2025)



Data for full epidemiological year from October 2024-October 2025. Influenza data available through May 2025.[9]

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An analysis of Veterans Affairs health records for the 2023-2024 season showed a **35% higher risk of death** at 30 days among patients hospitalized for COVID-19 compared with those admitted for influenza.[21,a]

Adults aged ≥65 years accounted for **2 out of every 3 COVID-19 hospitalizations** and **>81% of COVID-19 deaths** between 2020 and 2025.[5,6]

[a]Retrospective analysis of US Department of Veterans Affairs electronic health records comparing those admitted to the hospital with a diagnosis of COVID-19 (n=8,625) or seasonal influenza (n=2,647) between October 1, 2023, and March 27, 2024. Patients hospitalized for COVID-19 had a higher risk of death compared with those hospitalized for seasonal influenza (adjusted death rate, 5.70% vs 4.24% at 30 days, adjusted HR 1.35 (95% CI, 1.10-1.66). Study limitations include that the Veterans Affairs population may not represent the general population, and causes of death were not examined.[21]

Abbreviations: CI, confidence interval; HR, hazard ratio.

CLINICAL BURDEN (cont'd)

INCREASED RISK OF DEATH FROM COVID-19 BY NUMBER OF COMORBIDITIES

People with comorbidities also face higher risk for severe illness and death from COVID-19. In an analysis of a large, hospital-based payer database, among adults hospitalized with COVID-19, 94.9% had ≥1 comorbid condition. Risk of death from COVID-19 increased with the number of comorbidities.[22,23]

Increased Risk of Death Compared With No Comorbidities[22]

~1.5x	~2.6x	~3.3x	~3.8x
1 comorbidity	2-5 comorbidities	6-10 comorbidities	<10 comorbidities

Results are from an analysis of a large US hospital-based payer system, Premier Health Database Special COVID-19 Release, which was dated May 11, 2021. The study included patients aged ≥18 years with an inpatient encounter for COVID-19; 11% of the 4.9 million patient records reviewed met study inclusion requirement for COVID-19 (N=540,667).[22]

Underlying Health Conditions Associated With Severe COVID-19 May Include[23]

- Asthma
- Cancer
  - Hematologic malignancies
- Cerebrovascular disease
- Chronic kidney disease
  - People receiving dialysis
- Chronic lung diseases limited to
  - Bronchiectasis
  - COPD
  - Interstitial lung disease
  - Pulmonary embolism
  - Pulmonary hypertension
- Chronic liver diseases limited to
  - Cirrhosis
  - Nonalcoholic fatty liver disease
  - Alcoholic liver disease
  - Autoimmune hepatitis
- Cystic fibrosis
- Diabetes mellitus, type 1
- Diabetes mellitus, type 2
- Disabilities,[a] including Down syndrome
- Heart conditions (such as heart failure, coronary artery disease, or cardiomyopathies)
- HIV
- Mental health conditions limited to
  - Mood disorders, including depression
  - Schizophrenia spectrum disorders
- Neurological conditions limited to dementia and Parkinson's disease
- Obesity (BMI ≥30 kg/m^2 or ≥95th percentile in children)
- Physical inactivity
- Pregnancy and recent pregnancy
- Primary immunodeficiencies
- Smoking, current and former
- Solid organ or blood stem cell transplantation
- Tuberculosis
- Use of corticosteroids or other immunosuppressive medications

[a]Attention-deficit/hyperactivity disorder; autism; cerebral palsy; Charcot foot; chromosomal disorders: chromosome 17, 18q, and 19 deletions; cognitive impairment; congenital hydrocephalus; congenital malformations; deafness/hearing loss; disability indicated by Barthel Index; Down syndrome; Fahr's syndrome; Fragile X syndrome; Gaucher disease; hand and foot disorders; learning disabilities; Leber hereditary optic neuropathy or autosomal dominant optic atrophy; Leigh syndrome; limitations with self-care or activities of daily living; maternal inherited diabetes and deafness; mitochondrial encephalopathy, lactic acidosis, and stroke-like episodes and risk markers; mobility disability; movement disorders; multiple disability (referred to in research papers as "bedridden disability"); multisystem disease; myoclonic epilepsy with ragged red fibers; myotonic dystrophy; neurodevelopmental disorders; neuromuscular disorders; neuromyelitis optica spectrum disorder; neuropathy, ataxia, and retinitis pigmentosa; perinatal spastic hemiparesis; primary mitochondrial myopathy; progressive supranuclear palsy; Senior-Løken syndrome; severe and complex disability (referred to in research papers as "polyhandicap disability"); spina bifida and other nervous system anomalies; spinal cord injury; Tourette syndrome; traumatic brain injury; visual impairment/blindness; wheelchair use.[23]

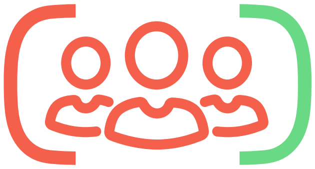
74% of all US adults had ≥1 condition that put them at higher risk for severe illness from COVID-19 as of 2025.[24]

Abbreviations: BMI, body mass index; COPD, chronic obstructive pulmonary disease; HIV, human immunodeficiency virus.

CLINICAL BURDEN (cont'd)

RACIAL AND ETHNIC DISPARITIES

Race and ethnic disparities also exist in COVID-19 illnesses, hospitalizations, and deaths. Compared with White non-Hispanic people, people from racial and ethnic minority groups were more likely to be infected with SARS-CoV-2. Once infected, they were also more likely to be hospitalized, admitted to the ICU, and die from COVID-19 at younger ages.[25]



Risk for COVID-19 Infection, Hospitalization, and Death by Race/Ethnicity[25]

	Rate ratios compared with White non-Hispanic persons			
	American Indian or Alaska Native non-Hispanic persons	Asian non-Hispanic persons	Black or African American non-Hispanic persons	Hispanic or Latino persons
Cases[a]	**1.6X**	**0.8X**	**1.1X**	**1.5X**
Hospitalizations[b]	**2.4X**	**0.7X**	**2.0X**	**1.8X**
Deaths[c]	**2.0X**	**0.7X**	**1.6X**	**1.7X**

[a]CDC case-level surveillance data from state, local, and territorial public health jurisdictions (data through April 19, 2023). Numbers are ratios of age-adjusted rates standardized to the 2019 US intercensal population estimate. Calculations use only the 65% of case reports that have race and ethnicity; this can result in inaccurate estimates of the relative risk among groups.[25]
[b]Data from COVID-NET from March 1, 2020, through May 13, 2023. Numbers are ratios of age-adjusted rates standardized to the 2020 US standard COVID-NET catchment population.[25]
[c]National Center for Health Statistics Provisional Death Counts (data through April 15, 2023). Numbers are ratios of age-adjusted rates standardized to the 2019 US intercensal population estimate.[25]

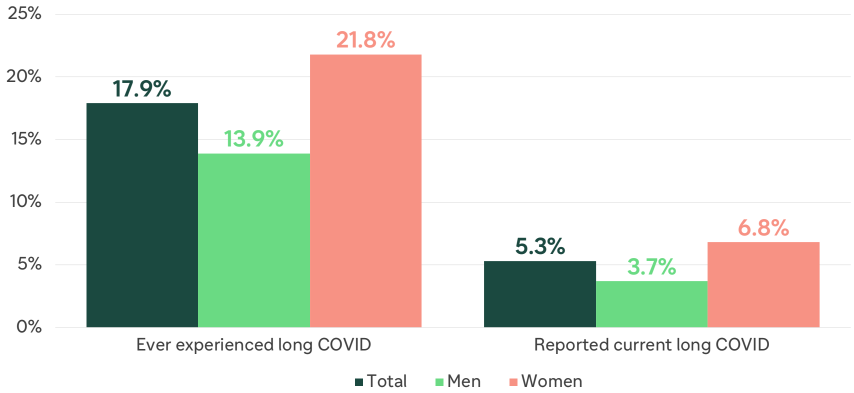
Abbreviations: CDC, Centers for Disease Control and Prevention; ICU, intensive care unit; SARS-CoV-2, severe respiratory syndrome coronavirus 2.

CLINICAL BURDEN (cont'd)

LONG COVID

Long COVID, or symptoms continuing ≥3 months after contracting the virus, affects ~10% to 30% of nonhospitalized COVID cases. The clinical features of long COVID include a wide range of symptoms and conditions, which may be mild to severe; improve, worsen, or persist over time; and have the potential to cause disability or require comprehensive care.[7,8]

Percentage of Adults Reporting Long COVID, United States, August 20 through September 16, 2024[26]

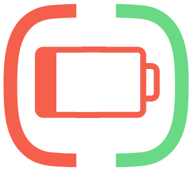


In August 2024, **17.9% of adults reported experiencing long COVID** at some point, with **5.3% reporting current long COVID.**[26]

Commonly reported symptoms of long COVID include[27]

Fatigue

Brain fog



Exhaustion
(postexertional malaise)

~1 in 4 adults with long COVID reported experiencing significant limitations in their daily activity.[28]

Although anyone who gets COVID-19 can develop long COVID, certain populations may be at higher risk.[8]

- Women
- Hispanic and Latino people
- People with underlying conditions and adults aged ≥65 years
- People who experience more severe outcomes of COVID-19
- People who did not get a COVID-19 vaccine

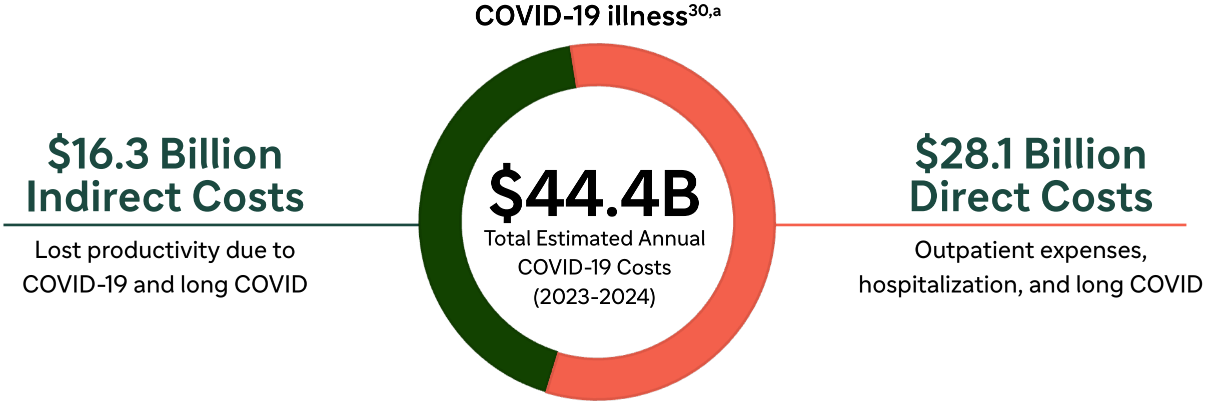
Patients are 2.6X more likely to experience **long-term COVID-19** symptoms after **≥3 infections.**[29,a]

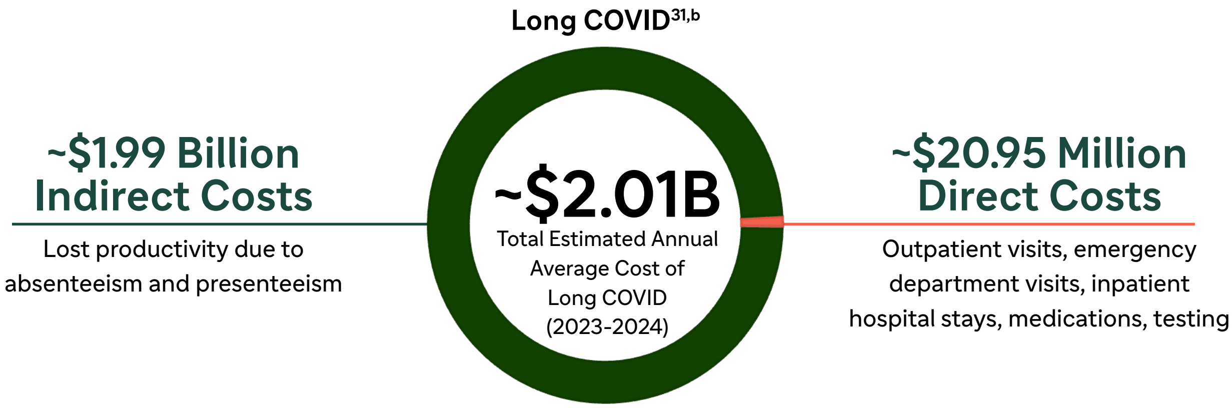
[a]Findings are from a study conducted by the Public Health Agency of Canada in partnership with Statistics Canada from May 2023 to June 2023. This follow-up study aimed to examine the ongoing impact of COVID-19 in adults who had participated in the Canadian COVID-19 Antibody and Health Survey – Cycle 2 in a national survey of adults aged ≥18 years. Respondents answered an electronic questionnaire about general health and experiences with COVID-19, including long-term symptoms. Limitations of the study included the reliance on self-reports about infections and symptoms since the beginning of the pandemic and the potential for recall bias.[29]

ECONOMIC BURDEN OF COVID-19

COST OF COVID-19 AND LONG COVID

COVID-19 adds a substantial economic burden to the overall health system.[30]





Average cost per COVID-19–associated hospitalization (February 4, 2023 to February 29, 2024)[32,c]

- **$13,069** Without ICU
- **$21,672** With ICU Without IMV
- **$49,634** With ICU and IMV

[a]According to a US population model to predict COVID-19 cases (2023-2024 season) and associated costs and outcomes for individuals in the US population meeting the eligibility criteria for a COVID-19 vaccination.[30]

[b]A computational simulation model representing costs of the clinical course, health effects, and associated costs of a person living with long COVID as defined by the CDC was used to determine the aggregate cost of long COVID care in the US from mid-2023 through February 2024. The model assumes that the probability of long COVID occurring is 6%, resulting in 136,739 new cases of long COVID in the United States. All costs and health effects are presented in 2024 net present value, with past and future values converted using a 3% discount rate.[31]

[c]Analysis of 161,824 patients in the PINC AI Healthcare Database with a hospital admission date occurring between February 4, 2023, and February 29, 2024, with a diagnosis of COVID-19.[32]

Abbreviations: CDC, Centers for Disease Control and Prevention; ICU, intensive care unit; IMV, invasive mechanical ventilation.

ECONOMIC BURDEN OF COVID-19 (cont'd)

COST OF COVID-19 VS INFLUENZA ILLNESS

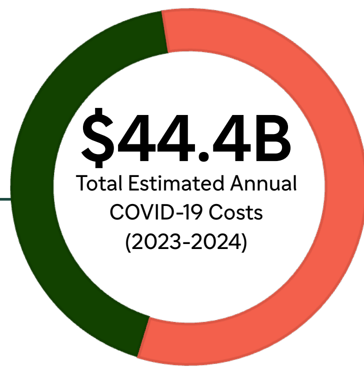
Estimated annual direct medical costs reported for COVID-19 have far exceeded direct medical costs reported for influenza.[30,33]

Dollar amounts reflect cost estimates from different years (2023-2024 for COVID-19 and 2015 for influenza). Sources are not adjusted for medical inflation, which typically outpaces the rest of the economy. Direct comparisons across years cannot be made due to this variability.

COVID-19 illness[30,a]

$16.3 Billion Indirect Costs

Lost productivity due to COVID-19 and long COVID



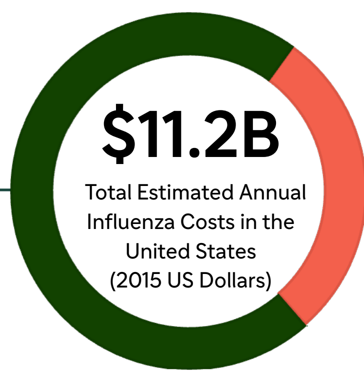
$28.1 Billion Direct Costs

Outpatient expenses, hospitalization, and long COVID

Influenza illness[33,b]

$8.0 Billion Indirect Costs

Absenteeism from paid employment



$3.2 Billion Direct Costs

Over-the-counter medicine, office-based outpatient visits, emergency department visits, and hospitalizations

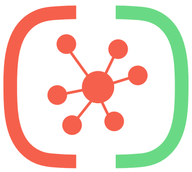
[a]According to a US population model to predict 2023-2024 COVID-19 cases and associated costs and outcomes for individuals in the US population meeting the eligibility criteria for a COVID-19 vaccination.[30]

[b]Costs are reported in 2015 US dollars. The medical care component of the US Consumer Price Index was used to inflate costs from previous years to 2015.[33]

COVID-19 IMMUNIZATION

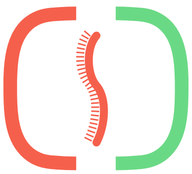
COVID-19 VACCINE OPTIONS

Vaccination can reduce the risk of severe illness and hospitalizations for those who become infected. There are 2 types of COVID-19 vaccines available in the United States: recombinant protein and mRNA.[10,34,35]



RECOMBINANT PROTEIN VACCINE

The vaccine directly provides the recombinant protein antigen needed for antibody production. The vaccine also contains an adjuvant that boosts the immune system to make antibodies and other immune cells to fight off a future COVID-19 infection.[34,35]



mRNA VACCINES

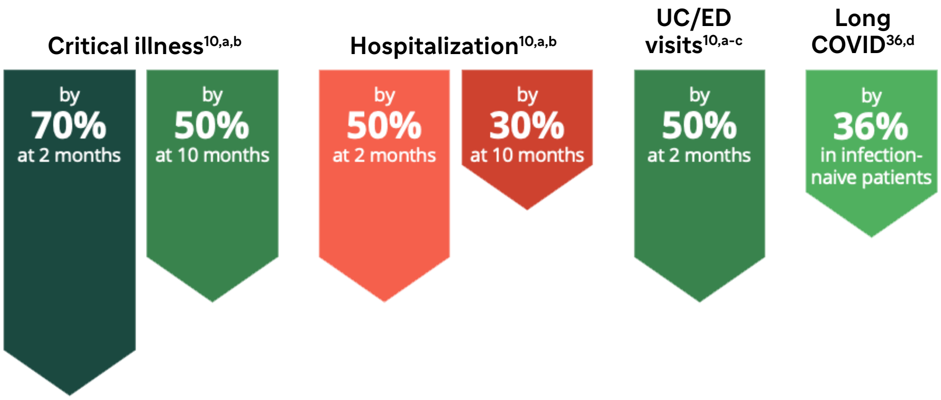
mRNA vaccines use synthesized mRNA to teach cells how to make a version of the spike protein found on the surface of the COVID-19 virus. That triggers an immune response, which results in antibodies that protect against COVID-19 infection. Over a short period of time, the cells break down the mRNA and remove it from the body as waste.[35]

Abbreviation: mRNA, messenger ribonucleic acid.

UNDERSTANDING THE COVID-19 IMMUNIZATION GAP

COVID-19 VACCINATION WAS FOUND TO REDUCE THE BURDEN OF DISEASE

COVID-19 Immunization Reduces Severe COVID-19 Outcomes

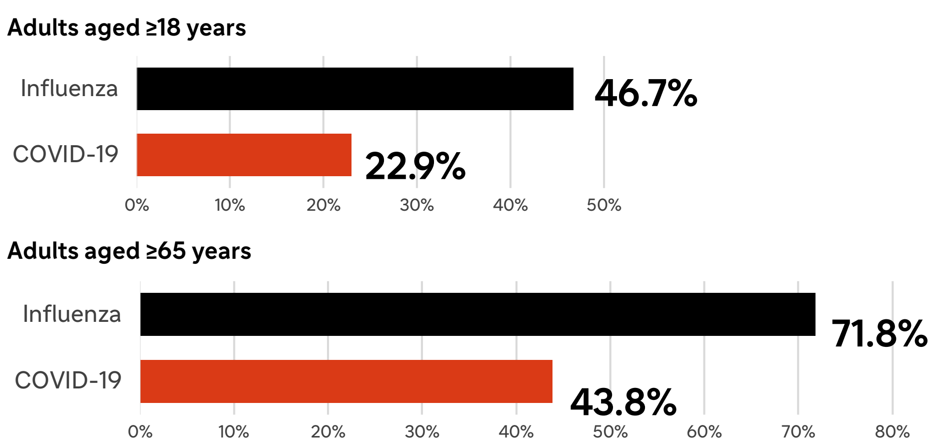


Benefits of COVID-19 Immunization: COVID-19 immunization has been found to reduce the incidence of critical illness, hospitalizations, UC/ED visits, and long COVID.[10,36]

[a]From September 2023-January 2024, in 2 multisite VE networks, vaccination with an updated 2023-2024 COVID-19 vaccine provided significant protection against COVID-19–associated ED/UC visits and hospitalization among immunocompetent adults, compared with not receiving an updated vaccine.[37]
[b]In adults aged ≥18 years.[10]
[c]Little protection remaining at 4-6 months.[10]
[d]Results from a meta-analysis of 12 studies, including 6 observational studies of COVID-19 vaccination before and after SARS-CoV-2 infection. A total of 84,603 patients were vaccinated before SARS-CoV-2 infection; 536,291 were unvaccinated. In studies investigating COVID-19 vaccination or no vaccination, the OR was 0.64 (95% CI: 0.45, 0.92), with moderate certainty.[36]

Adult COVID-19 vaccination rates are low compared with influenza coverage, despite the protective benefits.[11,38]

Influenza Vaccination Rates vs COVID-19 Vaccination Rates, 2024-2025[11,38]



Nursing home residents also have lower COVID-19 vaccination rates than influenza vaccination rates. Only 30% of nursing home residents received the 2024-2025 COVID-19 vaccine compared with 58% for the influenza vaccine.[39,d]

[d]Study assessed vaccination rates of nursing home residents for respiratory diseases, including COVID-19, influenza, and RSV, for the 2024-2025 respiratory virus season. CMS-certified nursing homes voluntarily reported data for the week of November 10, 2024. The percentage of nursing homes that reported vaccination coverage included 92.9% for COVID-19, 59.4% for influenza, and 51.8% for RSV.[39]

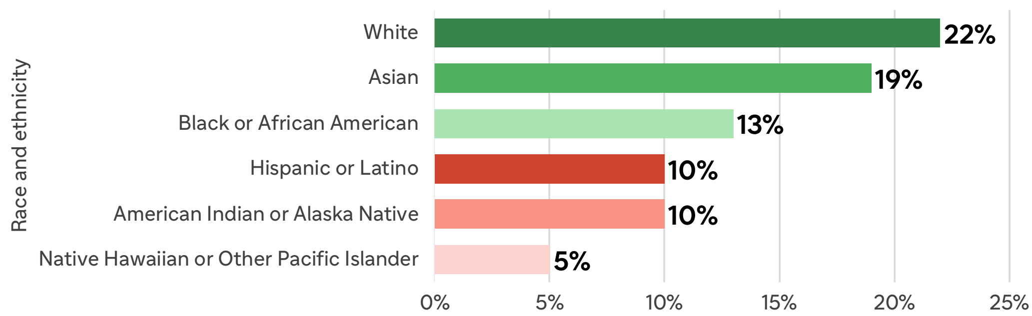
Abbreviations: CI, confidence interval; CMS, Centers for Medicare & Medicaid Services; ED, emergency department; OR, odds ratio; RSV, respiratory syncytial virus; SARS-CoV-2, severe acute respiratory syndrome coronavirus 2; UC, urgent care; VE, vaccine efficacy.

UNDERSTANDING THE COVID-19 IMMUNIZATION GAP (cont'd)

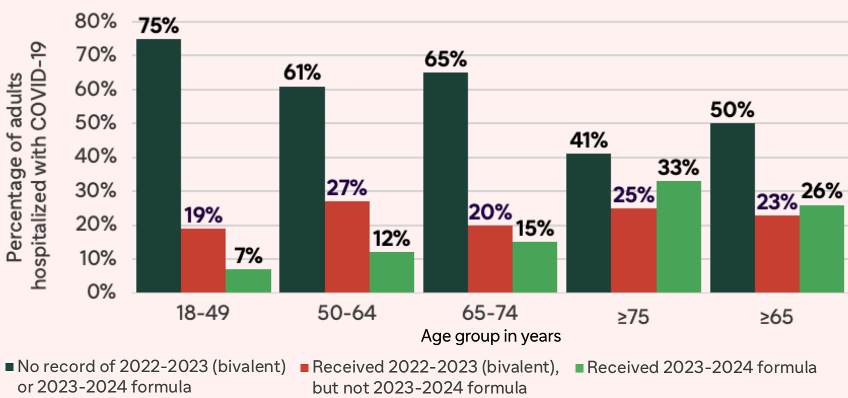
COVID-19 VACCINATION COVERAGE

In the fall of 2024, COVID-19 vaccination coverage was significantly lower for certain racial and ethnic groups compared with White adults.[12]

Self-reported COVID-19 vaccination coverage in a survey of adults by race and ethnicity, November 3, 2024, through November 9, 2024

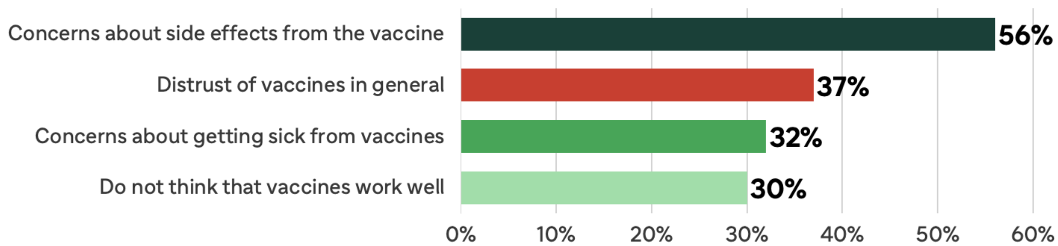


Vaccination status among adults hospitalized with COVID-19, by age group–COVID-NET, October 2023 through September 2024



In the 2023-2024 season, most adults hospitalized for COVID-19 were unvaccinated, with the lowest rates of hospitalization observed among those who had received that year's updated COVID-19 formula.[5]

Among Those Who Did Not Plan to Get an Updated COVID-10 Vaccine in 2024, Top Reasons Included[13,a]



In a 2024 national survey, concerns about side effects was a top barrier reported by survey participants (56%).[13]

[a]Data from an annual survey of US adults aged ≥18 years conducted by the National Foundation for Infectious Diseases to better understand current attitudes and behaviors about influenza, COVID-19, respiratory syncytial virus, and pneumococcal disease. The survey was conducted from August 8, 2024, to August 12, 2024, and included 1,160 complete responses (1,130 online and 30 by telephone).[13]

ABOUT NUVAXOVID

INDICATION[34,a]

Nuvaxovid (COVID-19 Vaccine, Adjuvanted) is a vaccine indicated for active immunization to prevent coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Nuvaxovid is approved for use in individuals who are:

- 65 years of age and older, or
- 12 years through 64 years of age with at least one underlying condition that puts them at high risk for severe outcomes from COVID-19

CONTRAINDICATIONS[34]

Do not administer Nuvaxovid to individuals with a known history of severe allergic reaction (eg, anaphylaxis) to any component of Nuvaxovid or to individuals who had a severe allergic reaction (eg, anaphylaxis) following a previous dose of Nuvaxovid.

NUVAXOVID DOSING SCHEDULE[34]

For patients aged ≥65 years or aged 12 to 64 years with ≥1 underlying condition that puts them at high risk for severe outcomes from COVID-19:

Never vaccinated with any COVID-19 vaccine:	Previously vaccinated with any COVID-19 vaccine:
Nuvaxovid is administered intramuscularly as a single 0.5-mL dose	Nuvaxovid is administered intramuscularly as a single 0.5-mL dose at least 2 months after the last dose of COVID-19 vaccine

[a]Nuvaxovid was initially studied and approved as Novavax COVID-19 Vaccine, Adjuvanted.[34]

HOW SUPPLIED, STORAGE, AND HANDLING[34]

- Nuvaxovid is available as a fridge-stable prefilled syringe. It arrives **ready-to-use, with no dilution, mixing, or thawing** required
- Nuvaxovid prefilled syringes should be stored in a standard refrigerator at a temperature between 2 °C and 8 °C (36 °F and 46 °F). **Do not freeze**
- Each carton of Nuvaxovid contains 10 single-dose prefilled syringes, each containing a 0.5-mL dose. Prefilled syringes should be kept in the outer carton **to protect from light**

MECHANISM OF ACTION[34,40-42]

Nuvaxovid contains purified, full-length recombinant spike protein and elicits an immune response to the recombinant spike protein, which protects against COVID-19. Nuvaxovid is the only FDA-approved, non-mRNA COVID-19 vaccine.

DESCRIPTION[34]

Nuvaxovid is a colorless to slightly yellow, clear to mildly opalescent sterile suspension for intramuscular use that is free from visible particles. Each 0.5-mL dose of Nuvaxovid (2025-2026 Formula) contains 5 mcg of recombinant spike (rS) protein of the SARS-CoV-2 Omicron variant lineage JN.1 and 50 mcg Matrix-M adjuvant. The Matrix-M adjuvant is composed of Fraction-A (42.5 mcg) and Fraction-C (7.5 mcg) of saponin extracts from the soapbark tree, *Quillaja saponaria* Molina. The rS protein is produced by recombinant DNA technology using a baculovirus expression system in the Sf9 insect cell line that is derived from the *Spodoptera frugiperda* species.

Nuvaxovid is the only FDA-approved, protein-based, non-mRNA COVID-19 vaccine, with efficacy and safety established in clinical trials.[34,43]

Abbreviations: FDA, US Food and Drug Administration; mRNA, messenger ribonucleic acid; SARS-CoV-2, severe acute respiratory syndrome coronavirus 2.

USE IN SPECIFIC POPULATIONS[34]

PREGNANCY

Risk Summary

All pregnancies have a risk of birth defect, loss, or other adverse outcomes. In the US general population, the estimated background risk of major birth defects and miscarriage in clinically recognized pregnancies is 2% to 4% and 15% to 20%, respectively. Available data on NUVAXOVID administered to pregnant women are insufficient to inform vaccine-associated risks in pregnancy.

A developmental toxicity study was performed in female rats administered a vaccine formulation containing the same quantity of SARS-CoV-2 recombinant spike protein and one-fifth the quantity of adjuvant and formulation buffer inactive ingredients included in Novavax COVID-19 Vaccine, Adjuvanted (Original monovalent) on four occasions, twice prior to mating and twice during gestation. The study revealed no evidence of harm to the fetus due to the vaccine (see *Animal Data*).

Clinical Considerations

Disease-Associated Maternal and/or Embryo/Fetal Risk
Pregnant women infected with SARS-CoV-2 are at increased risk of severe COVID-19 compared with non-pregnant individuals.

Data

Animal Data
In a developmental toxicology study, 0.1 mL of a vaccine formulation containing the same quantity of SARS-CoV-2 rS protein (5 mcg), one-fifth the quantity of adjuvant (10 mcg), and inactive ingredients which comprise the formulation buffer [25 mM sodium phosphate, 300 mM sodium chloride, and 0.01% (w/v) polysorbate 80] contained in a single dose of the Novavax COVID-19 Vaccine, Adjuvanted (Original monovalent) was administered to female rats by the intramuscular route on four occasions: 27 and 13 days prior to mating, and on gestational days 7 and 15. No vaccine-related adverse effects on female fertility, fetal development, or postnatal development were reported in this study.

LACTATION

Risk Summary

It is not known whether NUVAXOVID is excreted in human milk. Data are not available to assess the effects of NUVAXOVID on the breastfed infant or on milk production/excretion. The developmental and health benefits of breastfeeding should be considered along with the mother's clinical need for NUVAXOVID and any potential adverse effects on the breastfed child from NUVAXOVID or from the underlying maternal condition. For preventive vaccines, the underlying maternal condition is susceptibility to disease otherwise prevented by the vaccine.

Abbreviation: SARS-CoV-2, severe acute respiratory syndrome coronavirus 2.

USE IN SPECIFIC POPULATIONS (cont'd)[34]

PEDIATRIC USE

The safety and effectiveness of NUVAXOVID in adolescents 12 through 17 years of age with at least one underlying condition that puts them at high risk for severe outcomes from COVID-19 is based on safety and effectiveness data in this age group and in adults.

The safety and effectiveness of NUVAXOVID in individuals younger than 12 years of age have not been established.

GERIATRIC USE

In a clinical study (Study 1), out of 19,735 subjects who received primary vaccination with Novavax COVID-19 Vaccine, Adjuvanted (Original monovalent), 12.6% (n=2,480) were 65 years of age and older and 1.8% (n=361) were 75 years of age and older. Overall, there were no notable differences in the safety profiles observed between participants 65 years of age and older and younger participants. Study 1 did not include sufficient numbers of participants aged 65 years and older to determine whether they respond differently from younger participants.

In this study, among subjects who received a booster dose of Novavax COVID-19 Vaccine, Adjuvanted (Original monovalent) (n=13,353), 15.5% (n=2,064) of participants were 65 years of age and older and 2.5% (n=334) of participants were 75 years of age and older. Overall, there were no notable differences in the safety profiles observed between participants 65 years of age and older and younger participants. The effectiveness of the booster dose in participants aged 65 years and older was consistent with that observed in participants 18 years through 64 years.

Studies 6 and 7 did not include sufficient numbers of patients 65 years of age and older to determine whether they respond differently from younger adult patients.

IMMUNOCOMPROMISED INDIVIDUALS

The Centers for Disease Control and Prevention has published considerations related to COVID-19 vaccination for individuals who are moderately to severely immunocompromised (https://www.cdc.gov/vaccines/covid-19/clinical-considerations/covid-19-vaccines-us.html).

CLINICAL STUDIES[34,44-46]

	Study 1: Adults[14,44]	Study 1: Post hoc analysis[14,45]	Study 1: Adolescent expansion[14,46]
Phase	**Phase 3**	**Phase 3**	**Phase 3**
Vaccine version	Original monovalent	Original monovalent	Original monovalent
Study population	**Primary efficacy analysis:** Vaccine-naive adults aged ≥18 years with no history of COVID-19 **Booster dose phase:** Vaccine-experienced adults who received a primary series in the primary efficacy analysis	Vaccine-naive adults aged ≥18 years with no history of COVID-19	Vaccine-naive adolescents aged 12-17 years with no history of COVID-19
Number of subjects	**Primary efficacy analysis:** N=25,510 Per-Protocol Efficacy Analysis Set (Nuvaxovid, n=17,184; placebo, n=8,326)	N=25,852 Per-Protocol Efficacy Analysis Set (Nuvaxovid, n=17,312; placebo, n=8,140)	N=2,247 (Nuvaxovid, n=1,491; placebo, n=756)
Randomized, double blind	2:1 Nuvaxovid: placebo	2:1 Nuvaxovid: placebo	2:1 Nuvaxovid: placebo
Crossover	Yes	Yes	Yes
Nuvaxovid dosage	**Primary efficacy analysis (primary series):** 0.5 mL Nuvaxovid IM (2 doses 21 days apart) **Booster dose phase:** 0.5 mL Nuvaxovid IM (1 dose, ≥6 months following primary series)	0.5 mL Nuvaxovid IM (Primary series: 2 doses 21 days apart)	0.5 mL Nuvaxovid IM (Primary series: 2 doses 21 days apart)
Primary endpoint	**Primary efficacy analysis:** The first PCR-positive symptomatic mild, moderate, or severe COVID-19 illness diagnosed ≥7 days after completion of the second dose of the primary series **Booster dose phase:** Immunogenicity (antibody titers) and seroconversion rates		The first PCR-positive symptomatic mild, moderate, or severe COVID-19 illness diagnosed ≥7 days after completion of the second dose of the primary series
Secondary endpoint	**Primary efficacy analysis:** Vaccine efficacy against moderate and severe COVID-19		
Post hoc analysis		Impact on the risk of COVID-19–associated hospitalization	

Abbreviations: IM, intramuscular; mRNA, messenger ribonucleic acid; PCR, polymerase chain reaction; SARS-CoV-2, severe acute respiratory syndrome coronavirus 2.

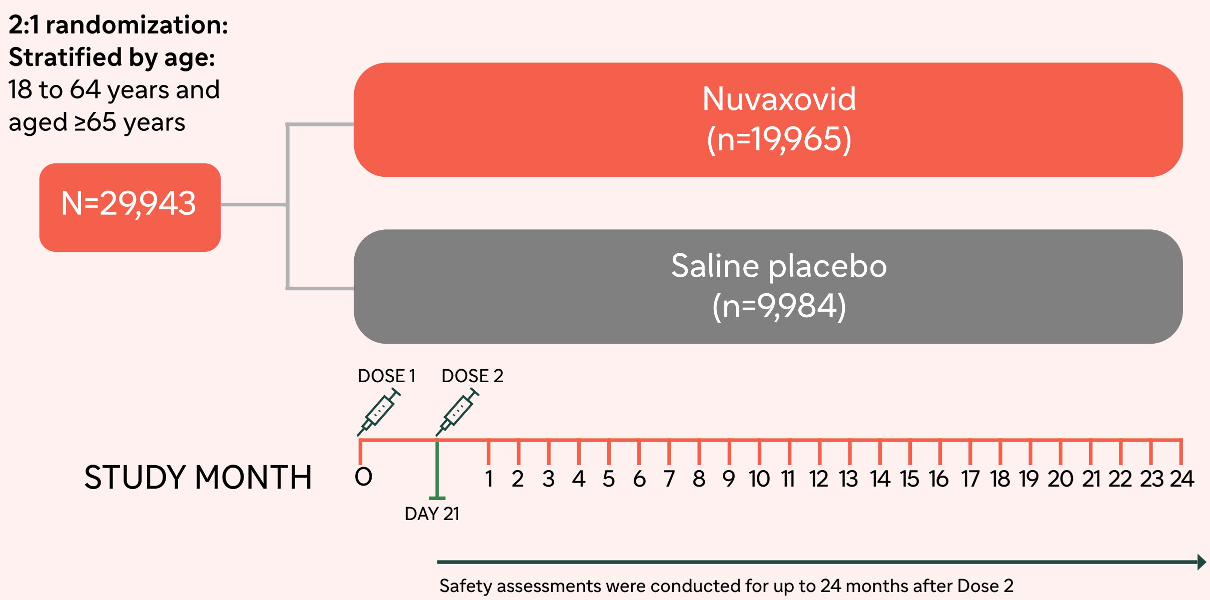
CLINICAL STUDIES (cont'd)

STUDY 1

The vaccine efficacy of a 2-dose Nuvaxovid series (Original monovalent) was studied in a Phase 3, multicenter, randomized, observer-blinded, placebo-controlled, crossover study in 29,943 vaccine-naive adults aged ≥18 years.[34]

STUDY DESIGN[44]

- Data based on strains circulating at time of study
- Moderate disease was defined as fever and evidence of lower respiratory tract infection. Severe disease was defined as clinically significant tachypnea, tachycardia, or hypoxia; receipt of intensive respiratory support; major dysfunction of 1 or more organ systems; admission to an intensive care unit; or death



PRIMARY ENDPOINT: The first PCR-positive symptomatic mild, moderate, or severe COVID-19 illness diagnosed ≥7 days after completion of the second dose of the primary series.[34]

Abbreviation: PCR, polymerase chain reaction.

CLINICAL STUDIES (cont'd)

STUDY 1: EFFICACY RESULTS

PRIMARY EFFICACY ANALYSIS

89.6%

efficacy in preventing COVID-19[34,44]

PRIMARY ENDPOINT: Efficacy in preventing PCR-confirmed symptomatic mild, moderate, or severe COVID-19 from 7 days after the second dose. (95% CI: 82.5, 93.8; *P*<0.001); N=25,510

91.0%

efficacy in preventing COVID-19 in high-risk patients[34,44]

SUBGROUP ANALYSIS: Efficacy in protection against COVID-19 in high-risk patients (95% CI: 83.6, 95.0); Nuvaxovid: n=16,493; placebo: n=7,737[a]

Of the study participants in the PP-EFF Analysis Set, 95.2% were at high risk for COVID-19 due to living or working conditions involving known frequent exposure to SARS CoV-2, comorbidities (chronic lung disease, cardiovascular disease, chronic liver disease, severe obesity, and diabetes), or age (≥65 years).

100%

protection from moderate-to-severe COVID-19[34,44]

SECONDARY ENDPOINT: Efficacy in preventing moderate-to-severe disease from then-circulating strains of virus (95% CI: 87.0, 100.0); N=25,452

The Nuvaxovid COVID-19 vaccine may not protect all vaccine recipients.

BOOSTER DOSE PHASE

Immune response in 222 participants who received a booster dose of Nuvaxovid COVID-19 Vaccine, Adjuvanted (Original monovalent) was compared with a subset of 222 participants who received the primary series in Phase 1. Antibody response was measured as geometric titers (GMT) and seroconversion rates as percentage of participants achieving a ≥4-fold increase in neutralizing antibodies. The GMT following the booster dose compared with GMT following the primary series met the noninferiority criteria for booster dose response (GMT ratio).[34]

[a]Participants at overall high risk for COVID-19 included those aged ≥65 years and those of any age with chronic health conditions or an increased risk of COVID-19 because of working or living conditions.[34]

Abbreviations: CI, confidence interval; PCR, polymerase chain reaction; PP-EFF, Per-Protocol Efficacy; SARS-CoV-2, severe acute respiratory syndrome coronavirus 2.

CLINICAL STUDIES (cont'd)

STUDY 1: POST HOC ANALYSIS

POST HOC ANALYSIS

In the per-protocol efficacy analysis of the Phase 3 trial including 25,482 participants, 4 hospitalizations were identified: 0 among Nuvaxovid COVID-19 vaccine recipients and 4 among placebo recipients.[45]

100%

protection from COVID-19 hospitalization[45]

POST HOC ANALYSIS: Protection against hospitalization due to then-circulating strains of virus (95% CI: 28.8, 100.0); N=25,482

The Nuvaxovid COVID-19 vaccine may not protect all vaccine recipients.

LIMITATIONS: Vaccine efficacy estimates impacted by a low number of events (ie, hospitalizations); pandemic-era restrictions may have reduced infections and hospitalizations during the study; exclusion of key demographics, such as participants with certain underlying health conditions (ie, some immunocompromised populations) may not have fully reflected the general population; and the limited duration of the study window did not permit assessment of long-term vaccine efficacy.[45]

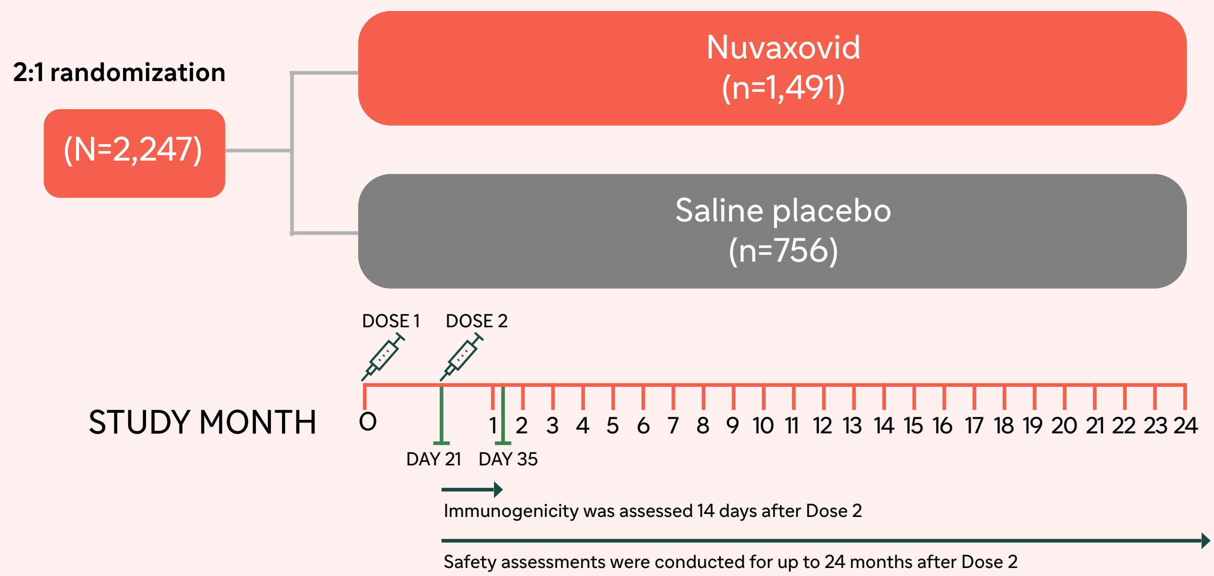
Abbreviation: CI, confidence interval.

CLINICAL STUDIES (cont'd)

STUDY 1: ADOLESCENT EXPANSION

STUDY DESIGN[34,46]

The immunogenicity and vaccine efficacy of a 2-dose Nuvaxovid series (Original monovalent) was studied in a Phase 3, multicenter, randomized, observer-blinded, placebo-controlled, crossover study in 2,247 vaccine-naive adolescents aged 12 through 17 years. Immunogenicity in the study population was compared to adults aged 18 through 25 years in the pivotal adult trial. Vaccine efficacy was measured against placebo in a descriptive efficacy analysis. The definitions for mild, moderate, and severe COVID-19 disease used for the analysis of efficacy in adolescents aged 12 through 17 years were the same as those used for the assessment of efficacy in adults aged 18 years and older, with the exception of the inclusion of Multisystem Inflammatory Syndrome in Children (MIS-C) in the definition of severe COVID-19 disease for adolescents.



IMMUNOGENICITY ASSESSMENT

Noninferiority analysis of neutralizing antibody titers 14 days after Dose 2 compared with that observed in participants aged 18 to 25 years from the adult main study.[34]

EFFICACY ASSESSMENT

Primary endpoint: The first PCR-positive symptomatic mild, moderate, or severe COVID-19 illness diagnosed ≥7 days after completion of the second dose of the primary series.[34]

Abbreviation: PCR, polymerase chain reaction.

CLINICAL STUDIES (cont'd)

STUDY 1: ADOLESCENT EXPANSION (cont'd)

STUDY RESULTS

IMMUNOGENICITY[34]

The study met all noninferiority criteria based the ratio of neutralizing antibody responses to SARS-CoV-2 wild-type virus at Day 35 compared with observed in participants aged 18-25 years from the pivotal adult study.

VACCINE EFFICACY[34]

79.8%

efficacy in preventing COVID-19

PRIMARY ENDPOINT: Efficacy in preventing PCR-confirmed symptomatic mild, moderate, or severe COVID-19 from 7 days after the second dose (95% CI: 47.5, 92.2); N=1,788

Abbreviations: CI, confidence interval; PCR, polymerase chain reaction; SARS-CoV-2, severe acute respiratory syndrome coronavirus 2.

Adverse Reaction Grade Definitions

SAFETY PROFILE

STUDY 1

The safety of Nuvaxovid was assessed in a clinical study conducted in the US and Mexico (NCT04611802; Study 1). In this study, 26,106 participants aged ≥18 years received at least 1 primary series dose of Nuvaxovid.[34]

In all studied patients[34]

- The overall frequency of unsolicited adverse events in the precrossover period was similar in the Nuvaxovid group (11.8%) and the placebo group (11.0%)
- Serious adverse events were reported by 1.2% of participants in the Nuvaxovid group and 1.2% of participants in the placebo group

PRIMARY SERIES

ADULTS AGED ≥65 YEARS[34]

In participants aged ≥65 years, the most commonly reported (>10%) solicited adverse reactions following administration of any dose of Nuvaxovid were injection site tenderness (57.8%), injection site pain (44.1%), fatigue (36.3%), muscle pain (33.8%), headache (31.3%), malaise (24.3%), and joint pain (15.5%).

Most Frequently Solicited Adverse Reactions After 2-Dose Primary Series in Adults Aged ≥65 Years (n=2,217)

Event	Grade 1 or 2 (%)	Grade 3 (%)	Grade 4 (%)
Local Adverse Reactions			
Tenderness	51.4	1.5	0.0
Pain	39.5	0.6	0.0
Redness (erythema)	4.3	0.3	0.0
Swelling	5.0	0.2	0.0
Systemic Adverse Reactions			
Muscle pain (myalgia)	27.8	1.4	0.0
Headache	24.1	0.8	<0.1
Fatigue	23.0	6.2	0.0
Malaise	19.4	1.8	0.0
Joint pain (arthralgia)	12.0	0.7	0.0
Nausea/vomiting	6.0	<0.1	0.0
Fever	2.0	<0.1	0.0

The clinical trial included patients with and without underlying conditions. Underlying conditions included chronic lung disease, cardiovascular disease, chronic liver disease, severe obesity, and diabetes.

The analysis included 2,293 (Dose 1) and 2,217 (Dose 2) participants in the Novavax COVID-19 Vaccine, Adjuvanted (Original monovalent) group and 1,138 (Dose 1) and 1,057 (Dose 2) participants in the placebo group who received at least 1 dose and completed at least 1 day of the vaccination reactogenicity diary, reported an unsolicited adverse event that was mapped to a reactogenicity term within 7 days of the dose, reported a symptom in the Daily Illness Symptoms Diary that was mapped to a reactogenicity term within 7 days of the dose, or reported a temperature in the Daily Illness Symptoms Diary within 7 days of the dose. Seven days included day of vaccination and the subsequent 6 days. Solicited reactogenicity events and use of antipyretic or pain medication were collected by the participant in the electronic diary.

SAFETY PROFILE (cont'd)

Adverse Reaction Grade Definitions

PRIMARY SERIES (cont'd)

ADULTS AGED 18-64 YEARS[34]

In participants aged 18 through 64 years, the most commonly reported (>10%) solicited adverse reactions following administration of any dose of Nuvaxovid were injection site tenderness (76.5%), injection site pain (64.3%), muscle pain (57.4%), fatigue (56.4%), headache (54.6%), malaise (43.2%), joint pain (25.1%), and nausea/vomiting (16.4%).

Most Frequent Solicited Adverse Reactions Within 7 Days After 2-Dose Primary Series in Adults Aged 18-64 Years (n=16,106)

Event	Grade 1 or 2 (%)	Grade 3 (%)	Grade 4 (%)
Local Adverse Reactions			
Tenderness	66.7	5.0	<0.1
Pain	56.8	1.8	<0.1
Redness (erythema)	5.8	0.7	0.0
Swelling	5.5	0.4	0.0
Systemic Adverse Reactions			
Muscle pain (myalgia)	47.6	5.1	<0.1
Headache	44.3	3.1	<0.1
Fatigue	34.8	15.7	<0.1
Malaise	32.4	6.5	<0.1
Nausea or vomiting	19.7	2.5	<0.1
Joint pain (arthralgia)	11.9	2.5	<0.1
Fever	6.1	0.5	<0.1

The clinical trial included patients with and without underlying conditions. Underlying conditions included chronic lung disease, cardiovascular disease, chronic liver disease, severe obesity, and diabetes.

The analysis included 16,041 (Dose 1) and 16,106 (Dose 2) participants in the Novavax COVID-19 Vaccine, Adjuvanted (Original monovalent) group and 7,968 (Dose 1) and 7,859 (Dose 2) participants in the placebo group who received at least 1 dose and completed at least 1 day of the vaccination reactogenicity diary, reported an unsolicited adverse event that was mapped to a reactogenicity term within 7 days of the dose, reported a symptom in the Daily Illness Symptoms Diary that was mapped to a reactogenicity term within 7 days of the dose, or reported a temperature in the Daily Illness Symptoms Diary within 7 days of the dose. Seven days included day of vaccination and the subsequent 6 days. Solicited reactogenicity events and use of antipyretic or pain medication were collected by the participant in the electronic diary.

SAFETY PROFILE (cont'd)

Adverse Reaction Grade Definitions

PRIMARY SERIES (cont'd)

ADOLESCENTS AGED 12-17 YEARS[34]

In participants aged 12 through 17 years, the most commonly reported (>10%) solicited adverse reactions following administration of any dose of Nuvaxovid were injection site tenderness (71.3%), injection site pain (67.1%), muscle pain (56.9%), fatigue (54.0%), malaise (43.0%), nausea/vomiting (23.1%), joint paint (19.4%), and fever (16.5%).

Most Frequent Solicited Adverse Reactions Within 7 Days After 2-Dose Primary Series in Adolescents Aged 12-17 Years (n=1,394)

Event	Grade 1 or 2 (%)	Grade 3 (%)	Grade 4 (%)
Local Adverse Reactions			
Tenderness	58.5	6.7	0.0
Pain	58.3	2.7	0.0
Swelling	7.4	0.6	0.0
Redness	6.8	0.7	0.0
Systemic Adverse Reactions			
Muscle pain (myalgia)	41.6	7.5	0.0
Headache	50.7	6.2	<0.1
Fatigue	36.3	13.6	0.0
Malaise	31.2	9.0	0.0
Nausea/vomiting	18.9	1.0	<0.1
Joint pain (arthralgia)	13.2	2.9	0.0
Fever	14.7	2.2	0.0

The analysis included 1,448 (Dose 1) and 1,394 (Dose 2) participants in the Novavax COVID-19 Vaccine, Adjuvanted (Original monovalent) group and 726 (Dose 1) and 686 (Dose 2) participants in the placebo group who received at least one dose and completed at least one day of the vaccination reactogenicity diary, reported an unsolicited adverse event that was mapped to a reactogenicity term within 7 days of the dose, reported a symptom in the paper memory aid of COVID-19 symptoms that was mapped to a reactogenicity term within 7 days of the dose, or reported a temperature in the paper memory aid of COVID-19 symptoms within 7 days of the dose. Seven days included day of vaccination and the subsequent 6 days. Solicited reactogenicity events and use of antipyretic or pain medicine was collected by the participant in the electronic diary).

SAFETY PROFILE (cont'd)

Adverse Reaction Grade Definitions

BOOSTER DOSE

ADULTS AGED ≥65 YEARS[34]

In participants aged ≥65 years, the most commonly reported (>10%) solicited adverse reactions following administration of a booster dose of Nuvaxovid were injection site tenderness (54.4%), injection site pain (41.7%), muscle pain (32.1%), fatigue (34.2%), headache (26.1%), malaise (22.5%), and joint pain (14.9%).

Most Frequent Solicited Adverse Reactions Within 7 Days After Booster Dose in Adults Aged ≥65 Years Who Had Previously Received a Nuvaxovid Primary Series (n=1,630)

Event	Grade 1 or 2 (%)	Grade 3 (%)	Grade 4 (%)
Local Adverse Reactions			
Tenderness	52.3	2.1	<0.1
Pain	40.5	1.1	0.1
Redness (erythema)	5.9	0.8	0.0
Swelling	6.1	0.5	0.0
Systemic Adverse Reactions			
Muscle pain (myalgia)	29.6	2.5	<0.1
Headache	24.3	1.8	0.0
Malaise	19.4	3.1	0.0
Fatigue	26.2	8.0	0.0
Joint pain (arthralgia)	13.2	1.7	<0.1
Nausea/vomiting	5.9	0.1	0.0
Fever	3.9	0.3	<0.1

The analysis included 9,817 participants aged 18 through 64 years and 1,630 participants aged ≥65 years who received the booster dose and completed at least 1 day of the vaccination reactogenicity diary, reported an unsolicited adverse event that was mapped to a reactogenicity term within 7 days of the dose, reported a symptom in the Daily Illness Symptoms Diary that was mapped to a reactogenicity term within 7 days of the dose, or reported a temperature in the Daily Illness Symptoms Diary within 7 days of the dose. Seven days included day of vaccination and the subsequent 6 days. Solicited reactogenicity events and use of antipyretic or pain medication were collected by the participant in the electronic diary.

SAFETY PROFILE (cont'd)

Adverse Reaction Grade Definitions

BOOSTER DOSE (cont'd)

ADULTS AGED 18-64 YEARS[34]

In participants aged 18 through 64 years, the most commonly reported (>10%) solicited adverse reactions following administration of a booster dose of Nuvaxovid COVID-19 Vaccine, Adjuvanted (Original monovalent) were injection site tenderness (69.4%), injection site pain (58.8%), muscle pain (54.3%), fatigue (52.5%), headache (47.3%), malaise (40.2%), joint pain (25.7%), and nausea/vomiting (12.5%).

Most Frequent Solicited Adverse Reactions Within 7 Days After Booster Dose in Adults Aged 18-64 Years Who Received a Nuvaxovid Primary Series (n=9,817)

Event	Grade 1 or 2 (%)	Grade 3 (%)	Grade 4 (%)
Local Adverse Reactions			
Tenderness	62.5	6.9	<0.1
Pain	55.8	3.0	<0.1
Redness (erythema)	6.9	1.7	0.0
Swelling	6.8	1.0	0.0
Systemic Adverse Reactions			
Muscle pain (myalgia)	45.5	8.7	0.1
Fatigue	33.7	18.7	0.1
Headache	41.8	5.5	<0.1
Malaise	30.6	9.5	0.1
Joint pain (arthralgia)	20.7	5.0	<0.1
Nausea/vomiting	12.0	0.5	<0.1
Fever	7.6	1.2	<0.1

The analysis included 9,817 participants aged 18 through 64 years and 1,630 participants aged ≥65 years who received the booster dose and completed at least 1 day of the vaccination reactogenicity diary, reported an unsolicited adverse event that was mapped to a reactogenicity term within 7 days of the dose, reported a symptom in the Daily Illness Symptoms Diary that was mapped to a reactogenicity term within 7 days of the dose, or reported a temperature in the Daily Illness Symptoms Diary within 7 days of the dose. Seven days included day of vaccination and the subsequent 6 days. Solicited reactogenicity events and use of antipyretic or pain medication were collected by the participant in the electronic diary.

SAFETY PROFILE (cont'd)

Adverse Reaction Grade Definitions

BOOSTER DOSE (cont'd)

ADOLESCENTS AGED 12-17 YEARS[34]

In participants aged 12 through 17 years, the most commonly reported (>10%) solicited adverse reactions following administration of a booster dose of Nuvaxovid COVID-19 Vaccine, Adjuvanted (Original monovalent) were injection site tenderness (65.9%), injection site pain (64.6%), headache (62.9%), muscle pain (60.4%), fatigue (57.1%), malaise (45.1%), nausea/vomiting (23.6%), joint pain (21.9%), fever (16.8%), and injection site redness (10.3%).

Most Frequent Solicited Adverse Reactions Within 7 Days After Booster Dose in Adolescents Aged 12-17 Years Who Had Previously Received a Nuvaxovid Primary Series (n=1,256)

Event	Grade 1 or 2 (%)	Grade 3 (%)	Grade 4 (%)
Local Adverse Reactions			
Tenderness	56.7	9.2	<0.1
Pain	59.7	4.9	0.0
Redness (erythema)	8.0	2.3	0.0
Swelling	8.1	1.4	0.0
Systemic Adverse Reactions			
Headache	50.4	12.3	0.2
Muscle pain (myalgia)	49	11.4	<0.1
Fatigue	39.9	17.2	<0.1
Malaise	31.6	13.5	<0.1
Nausea/vomiting	22.0	1.6	0
Joint pain (arthralgia)	17.9	4.0	<0.1
Fever	13.1	3.5	0.2

The analysis included a total of 1,256 participants who received the booster dose and completed ≥1 day of the reactogenicity diary, reported an unsolicited adverse event that was mapped to a reactogenicity term within 7 days of the dose, reported a symptom in the paper memory aid of COVID-19 symptoms that was mapped to a reactogenicity term within 7 days of the dose, or reported a temperature in the paper memory aid of COVID-19 symptoms within 7 days of the dose. Seven days included day of vaccination and the subsequent 6 days. Solicited reactogenicity events and use of antipyretic or pain medicine was collected by the participant in the electronic diary.

SAFETY PROFILE (cont'd)

Adverse Reaction Grade Definitions

SUPPORTIVE SAFETY DATA[34]

Additional supportive safety data are available from 5 other clinical trials conducted in adults aged ≥18 years:

STUDY 2: A 2-dose primary series of Novavax COVID-19 vaccine (manufactured by a different process than Novavax [Original monovalent[a]] administered in Study 1) in adults aged 18-84 years; 10,795 were randomized to receive Nuvaxovid and 10,864 were randomized to receive placebo.

- A serious event of Guillain-Barré syndrome was reported 9 days following administration of the vaccine. No events of Guillain-Barré syndrome were reported following administration of placebo
- Serious events of myocarditis in a 19-year-old male and pericarditis in a 60-year-old female were reported 3 days following Dose 2 and 11 days following Dose 1, respectively. No events of myocarditis or pericarditis were reported following the administration of placebo

STUDY 3: A 2-dose primary series of Novavax COVID-19 vaccine (manufactured by a different process than Novavax [Original monovalent[a]] administered in Study 1) and a first booster dose in adults aged 18-84 years: 4,104 participants received a primary series and 1,898 received a first booster dose[b]

STUDY 4: A 2-dose primary series of Novavax COVID-19 vaccine (manufactured by a different process than Novavax [Original monovalent][a] administered in Study 1[a]) or a first or second booster dose: in adults aged 18-59 years, 29 participants received a primary series; in adults 18-84 years, 514 participants received a primary series; 105 received a first booster dose[b]; and 45 received a second booster dose[b]

- In Study 3 and Study 4, ~5,500 participants received ≥1 dose of the vaccine. No serious adverse events considered related to vaccination were reported in these studies

STUDY 5: A first or second booster dose of Novavax COVID-19 vaccine Novavax COVID-19 vaccine, Adjuvanted (Original monovalent)[a]: in adults aged 18-49 years, 905 received a first or second booster dose[c]

- Participants were monitored for medically attended unsolicited adverse events through 28 days after the booster dose. The overall frequency of these events was 4.3% and was similar for those previously vaccinated with either Pfizer-BioNTech or Moderna COVID-19 vaccines
- Serious adverse events were reported by 2 (0.2%) participants, with no events of myocarditis or pericarditis

STUDY 6, PART 1: Participants aged 18-64 years were randomized to receive a second booster dose containing 1 of 3 different formulations of Novavax COVID-19 Vaccine: 274 received Novavax COVID-19 Vaccine Adjuvanted (Original monovalent[a]; 286 received Novavax Monovalent Vaccine (Omicron BA.1 lineage)[c]; 269 received Novavax Bivalent Vaccine (Original monovalent and Omicron BA.1).[d] All participants had received ≥3 doses of an mRNA COVID-19 vaccine prior to study inclusion.

- Participants were monitored for 28 days after the booster dose for unsolicited adverse events and through the end of study (median follow-up: 244 days) for serious adverse events

[a]Vaccine containing a recombinant spike of SARS-CoV-2 Wuhan-Hu 1 strain (Original) authorized as Novavax COVID-19 Vaccine, adjuvant (Original monovalent).
[b]Booster dose population is a subset of those who received a primary series.
[c]Vaccine containing a recombinant spike of SARS-CoV-2 Omicron BA.1 lineage strain, not authorized or approved in the US.
[d]Vaccine containing a recombinant spike of SARS-CoV-2 Wuhan-Hu 1 strain and Omicron BA.1 lineage strain, not authorized or approved in the US.
Abbreviations: mRNA, messenger ribonucleic acid; SARS-CoV-2, severe acute respiratory syndrome coronavirus 2.

SAFETY PROFILE (cont'd)

Adverse Reaction Grade Definitions

SUPPORTIVE SAFETY DATA (cont'd)[34]

STUDY 6, PART 1 (cont'd)

- In the 28 days after vaccination unsolicited adverse events were reported in 32.2% of patients who received the Monovalent Vaccine (Omicron BA.1); 38.3% of those who received the Original monovalent vaccine; and 33.5% of those who received the Bivalent Vaccine. No unsolicited adverse events were severe and considered related to vaccine
- Serious adverse events were reported by 8 participants (8/286, 2.8%) in the Monovalent Vaccine (Omicron BA.1) group, 4 participants (4/274, 1.5%) each in the Original monovalent vaccine and Bivalent Vaccine groups

STUDY 6, PART 2: Participants aged 18-64 years were randomized to receive a second booster dose containing one of 3 different Novavax COVID-19 Vaccine formulations: 251 received Novavax COVID-19 (Original monovalent[a]; 254 received Monovalent Vaccine (Omicron BA.5 lineage)[b]; and 259 received Bivalent Vaccine (Original monovalent and Omicron BA.5).[c] All participants had received ≥3 doses of an mRNA COVID-19 vaccine prior to study inclusion. Median time since last vaccination was 352.5 days.

- **Solicited Adverse Reactions:** Local and systemic adverse reactions were solicited within 7 days following vaccination with Novavax COVID-19 Vaccine, Adjuvanted (Original monovalent), the Monovalent Vaccine (Omicron BA.5), or the Bivalent Vaccine (Original monovalent and Omicron BA.5) using an electronic diary. In Study 6, the percentages and types of reported solicited local and systemic adverse reactions were consistent with those reported by participants following administration of the Original Monovalent vaccine as presented in the booster safety analysis from Study 1
- **Unsolicited Adverse Events:** Participants were monitored for 28 days after the booster dose for unsolicited adverse events and through the end of study (median follow-up: 220 days) for AESIs, serious adverse events, and treatment-related medically adverse events
  - In the 28 days after vaccination unsolicited adverse events were reported in 19.7% of patients who received the Monovalent Vaccine (Omicron BA.5); 25.9% of those who received the Original monovalent vaccine; and 20.8% of those who received the Bivalent Vaccine. One (1) unsolicited severe and vaccine-related adverse event of diarrhea was reported
  - Serious adverse events were reported by 7 participants (7/254, 2.8%) in the Monovalent Vaccine (Omicron BA.5) group, 10 participants (10/251, 4.0%) in the Original monovalent vaccine group, and 3 participants (3/259, 1.2%) in the Bivalent vaccine group
  - Two participants reported serious adverse events of cranial nerve palsy, including a serious adverse event of fourth cranial nerve palsy with onset of symptoms 7 days post vaccination and a serious adverse event of sixth cranial nerve palsy with onset of symptoms 14 days post vaccination. Both participants had predisposing risk factors, including diabetes, hypertension, and hypercholesterolemia. Currently available information on oculomotor cranial palsies is insufficient to determine a causal relationship with the vaccine.
  - One participant reported a serious adverse event of vestibular neuronitis (eighth cranial nerve), which occurred twice (11 days after Dose 1 and 16 days after Dose 2 of study vaccine), and was assessed as related to the vaccine

[a]Vaccine containing a recombinant spike of SARS-CoV-2 Wuhan-Hu 1 strain (Original) authorized as Novavax COVID-19 Vaccine, adjuvant (Original monovalent).
[b]Vaccine containing a recombinant spike protein of SARS-CoV-2 Omicron BA.5 variant lineage, not authorized or approved in the US.
[c]Vaccine containing a recombinant spike protein of SARS-CoV-2 Wuhan-Hu 1 strain and Omicron variant lineage BA.5, not authorized or approved in the US.

Abbreviations: AESI, adverse event of special interest; mRNA, messenger ribonucleic acid; SARS-CoV-2, severe acute respiratory syndrome coronavirus 2.

Please see full Prescribing Information.

SUMMARY

The COVID-19 disease burden remains, with disease peaks in both winter and late summer[4,20]

US COVID-19 burden estimate for 2024-2025 (October 1, 2024-September 20, 2025):

- 13.8 million-20.3 million cases
- 3.3 million-4.8 million outpatient visits
- 380,000-540,000 hospitalizations
- 44,000-63,000 deaths

Nuvaxovid (COVID-19 Vaccine, Adjuvanted) contains purified, full-length recombinant spike protein and is the only FDA-approved non-mRNA COVID-19 vaccine[16,34]

- The vaccine elicits an immune response to the recombinant spike protein, which protects against COVID-19
- COVID-19 vaccines may be updated to target likely variants for the upcoming year as determined by the healthcare authorities/FDA
- Each 0.5-mL dose of the Nuvaxovid [2025-2026 Formula] contains 5 mcg of recombinant spike protein of the [SARS-CoV2 Omicron variant lineage JN.1] and 50 mcg Matrix-M adjuvant

In a randomized clinical trial of >25,000 patients, Nuvaxovid demonstrated efficacy in preventing COVID-19 and protecting against serious outcomes[34,44,45]

In the pivotal trial of previously unvaccinated patients aged ≥18 years:

- Nuvaxovid demonstrated 89.6% efficacy in preventing COVID-19 (primary endpoint)
- 91% efficacy in preventing COVID-19 in high-risk patients (subgroup analysis)
- 100% protection from moderate-to-severe COVID-19 (secondary endpoint)
- No reported COVID-19 hospitalizations in a post hoc analysis

In the adolescent expansion trial of previously unvaccinated patients aged 12 to 17 years:

- Nuvaxovid demonstrated 79.8% efficacy in preventing COVID-19 (primary endpoint)

INDICATION

NUVAXOVID is a vaccine indicated for active immunization to prevent coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). NUVAXOVID is approved for use in individuals who are:

- 65 years of age and older, or
- 12 years through 64 years of age with at least one underlying condition that puts them at high risk for severe outcomes from COVID-19.

Abbreviations: FDA, US Food and Drug Administration; mRNA, messenger ribonucleic acid; SARS-CoV-2, severe acute respiratory syndrome coronavirus 2.

SUMMARY (cont'd)

In clinical trials, Nuvaxovid helped protect patients against COVID-19 with low reactogenicity and minimally disruptive side effects[34]

Primary series:

- In participants aged ≥65 years (n=2,217), the most commonly reported (>10%) solicited adverse reactions following administration of any dose of Nuvaxovid were injection site tenderness (57.8%), injection site pain (44.1%), fatigue (36.3%), muscle pain (33.8%), headache (31.3%), malaise (24.3%), and joint pain (15.5%)
- In participants aged 18 through 64 years (n=16,106), the most commonly reported (>10%) solicited adverse reactions following administration of any dose of Nuvaxovid were injection site tenderness (76.5%), injection site pain (64.3%), muscle pain (57.4%), fatigue (56.4%), headache (54.6%), malaise (43.2%), joint pain (25.1%), and nausea/vomiting (16.4%)
- In participants aged 12 through 17 years (n=1,394), the most commonly reported (>10%) solicited adverse reactions following administration of any dose of Nuvaxovid were injection site tenderness (71.3%), injection site pain (67.1%), headache (68.3%), muscle pain (56.9%), fatigue (54.0%), malaise (43.0%), nausea/vomiting (23.1%), joint pain (19.4%), and fever (16.5%)

Booster Dose:

- In participants aged ≥65 years (n=1,630), the most commonly reported (>10%) solicited adverse reactions following administration of a booster dose of Nuvaxovid were injection site tenderness (54.4%), injection site pain (41.7%), muscle pain (32.1%), fatigue (34.2%), headache (26.1%), malaise (22.5%), and joint pain (14.9%)
- In participants aged 18 through 64 years (n=9,817), the most commonly reported (>10%) solicited adverse reactions following administration of a booster dose of Novavax COVID-19 Vaccine, Adjuvanted (Original monovalent) were injection site tenderness (69.4%), injection site pain (58.8%), muscle pain (54.3%), fatigue (52.5%), headache (47.3%), malaise (40.2%), joint pain (25.7%), and nausea/vomiting (12.5%)
- In participants aged 12 through 17 years (n=1,256), the most commonly reported (>10%) solicited adverse reactions following administration of a booster dose of Novavax COVID-19 Vaccine, Adjuvanted (Original monovalent) were injection site tenderness (65.9%), injection site pain (64.6%), headache (62.9%), muscle pain (60.4%), fatigue (57.1%), malaise (45.1%), nausea/vomiting (23.6%), joint pain (21.9%), fever (16.8%), and injection site redness (10.3%)

Adverse Reaction Grade Definitions[34]:

	Grade 1	Grade 2	Grade 3	Grade 4
Tenderness	Mild discomfort to touch	Discomfort with movement	Significant discomfort at rest	Emergency room (ER) visit or hospitalization
Pain	Does not interfere with activity	Repeated use of non-narcotic pain reliever for >24 hours or interferes with activity	Any use of narcotic pain reliever or prevents daily activity	ER visit or hospitalization
Redness (erythema)	2.5–5 cm	5.1–10 cm	>10 cm	Necrosis or exfoliative dermatitis
Swelling	2.5–5 cm and does not interfere with activity	5.1–10 cm or interferes with activity	>10 cm or prevents daily activity	Necrosis
Fatigue, malaise, muscle pain, or joint pain (arthralgia)	No interference with activity	Some interference with activity	Significant; prevents daily activity	ER visit or hospitalization
Headache	No interference with activity	Repeated use of non-narcotic pain reliever for >24 hours or some interference with activity	Significant; any use of narcotic pain reliever or prevents daily activity	ER visit or hospitalization
Nausea/vomiting	No interference with activity or 1–2 episodes/24 hours	Some interference with activity or >2 episodes/24 hours	Prevents daily activity, requires outpatient IV hydration	ER visit or hospitalization for hypotensive shock
Fever	38.0–38.4 °C (100.4–101.1 °F)	38.5–38.9 °C (101.2–102.0 °F)	39.0–40 °C (102.1–104 °F)	>40 °C (>104 °F)

Abbreviation: IV, intravenous.

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CODING AND BILLING INFORMATION

Vaccine and Administration Current Procedural Terminology (CPT) Codes[1,2]		
CPT Code	**Code Description**	**Suggested Use**
91304	Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) (coronavirus disease [COVID-19]) vaccine, recombinant spike protein nanoparticle, saponin-based adjuvant, 5 mcg/0.5 mL dosage, for intramuscular use	—
90480	Immunization administration by intramuscular injection of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) (coronavirus disease [COVID-19]) vaccine, single dose	Appropriate coding for administration of a COVID-19 vaccine, for all age patients, with or without qualified counseling, is 1 unit of CPT 90480

Nuvaxovid™ (COVID-19 Vaccine, Adjuvanted) National Drug Codes (NDCs)[3]		
NDC: Carton	**NDC: Unit-of-use**	**Description**
80631-207-10 ML0.5	80631-207-01 ML0.5	Package of 10 single-dose syringes (10 x 1)

Diagnosis Codes[4]		
ICD-10-CM Code	**Code Description**	**Suggested Use**
Z23	Encounter for immunization	When a dose of Nuvaxovid is administered
ICD-10 code specific to condition	To be determined by practitioner	When administered because of a diagnosis

This Coding and Billing information is provided for informational purposes only. Every reasonable effort has been made to verify the accuracy of the information; however, this quick reference is not intended to provide specific guidance on how to utilize, code, bill, or charge for any product or service. Health care providers should make the ultimate decision as to when to use a specific product based on clinical appropriateness for a particular patient. Third-party payment for medical products and services is affected by numerous factors, and Sanofi cannot guarantee success in obtaining insurance payments.

Abbreviation: ICD-10-CM, International Classification of Diseases, Tenth Revision, Clinical Modification.

INDICATION AND IMPORTANT SAFETY INFORMATION FOR NUVAXOVID™ (COVID-19 VACCINE, ADJUVANTED)

INDICATION

NUVAXOVID is a vaccine indicated for active immunization to prevent coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). NUVAXOVID is approved for use in individuals who are:

- 65 years of age and older, or
- 12 years through 64 years of age with at least one underlying condition that puts them at high risk for severe outcomes from COVID-19.

IMPORTANT SAFETY INFORMATION

CONTRAINDICATION

Do not administer NUVAXOVID to individuals with a known history of severe allergic reaction (e.g., anaphylaxis) to any component of NUVAXOVID or to individuals who had a severe allergic reaction (e.g.,anaphylaxis) following a previous dose of NUVAXOVID

MANAGEMENT OF ACUTE ALLERGIC REACTIONS

Appropriate medical treatment must be immediately available to manage potential anaphylactic reactions following administration of NUVAXOVID

MYOCARDITIS AND PERICARDITIS

Clinical trials data provide evidence for increased risks of myocarditis and pericarditis following administration of NUVAXOVID. There have been post-marketing reports of myocarditis and pericarditis following administration of NUVAXOVID

SYNCOPE

Syncope (fainting) may occur in association with administration of injectable vaccines, including NUVAXOVID. Procedures should be in place to avoid injury from fainting

ALTERED IMMUNOCOMPETENCE

Immunocompromised persons, including individuals receiving immunosuppressive therapy, may have a diminished immune response to NUVAXOVID

NUVAXOVID may not protect all vaccine recipients

COMMON ADVERSE REACTIONS

The most commonly reported (>10%) solicited adverse reactions included: injection site pain/tenderness, fatigue/malaise, muscle pain, headache, nausea/vomiting, fever, and joint pain

REFERENCES

1. CPT codes mapped to CVX codes. Centers for Disease Control and Prevention. September 24, 2024. Accessed November 20, 2025. https://www2a.cdc.gov/vaccines/iis/iisstandards/vaccines.asp?rpt=cpt **2.** Coding for COVID-19 vaccine shots. Centers for Medicare & Medicaid Services. January 2, 2025. Accessed November 20, 2025. https://www.cms.gov/medicare/payment/covid-19/coding-covid-19-vaccine-shots **3.** Nuvaxovid. Prescribing information. Novavax, Inc. **4.** National Center of Health Statistics – ICD-10-CM. Encounter for immunization. October 1, 2025. Accessed November 20, 2025.https://icd10cmtool.cdc.gov/?fy=FY2026&query=z23

COVID-19 VACCINE 2025-2026 RECOMMENDATIONS

PATIENTS AGED 12 TO 18 YEARS

CDC Centers for Disease Control & Prevention's Advisory Committee on Immunization Practices	AAP American Academy of Pediatrics	AAFP American Academy of Family Physicians
Shared clinical decision-making: Vaccination is based on individual decision-making with the consideration that vaccination is most beneficial for individuals who are at an increased risk for severe COVID-19 disease according to the CDC list of COVID-19 risk factors[1,2]	An age-appropriate vaccine is recommended for children and adolescents who[3,4] • Are at high risk for severe COVID-19 • Are living in long-term care or other congregate settings • Have never been vaccinated against COVID-19 • Live with those who are at high risk for severe COVID-19 • Are requested by their parent or guardian to be vaccinated	

PATIENTS AGED 19 TO 64 YEARS

CDC Centers for Disease Control & Prevention's Advisory Committee on Immunization Practices	AAFP American Academy of Family Physicians	ACC American College of Cardiology
Shared clinical decision-making: Vaccination is based on individual decision-making with the consideration that vaccination is most beneficial for individuals who are at an increased risk for severe COVID-19 disease according to the CDC list of COVID-19 risk factors[5]	Vaccination is recommended for all adults[6]	Vaccination is recommended for all adults with heart disease[7]

Abbreviation: CDC, Centers for Disease Control and Prevention.

COVID-19 VACCINE 2025-2026 RECOMMENDATIONS (cont'd)

PATIENTS AGED ≥65 YEARS

CDC Centers for Disease Control & Prevention's Advisory Committee on Immunization Practices	AAFP American Academy of Family Physicians
Shared clinical decision-making: Vaccination is based on individual decision-making with the consideration that vaccination is most beneficial for individuals who are at an increased risk for severe COVID-19 disease according to the CDC list of COVID-19 risk factors[5] Patients should receive an additional dose of any COVID-19 vaccine 6 months after the previous dose (minimum interval of 2 months)[8]	Vaccination is recommended for all adults, especially people who[6] • Are aged ≥65 years • Are at increased risk for severe COVID-19 infection • Have never received a COVID-19 vaccine Patients should receive an additional dose of any COVID-19 vaccine 6 months after the previous dose (minimum interval of 2 months)[9]

MODERATELY OR SEVERELY IMMUNOCOMPROMISED PATIENTS AGED ≥12 YEARS

CDC Centers for Disease Control & Prevention's Advisory Committee on Immunization Practices	AAP American Academy of Pediatrics	AAFP American Academy of Family Physicians
Shared clinical decision-making: Vaccination is based on individual decision-making with the consideration that vaccination is most beneficial for individuals who are at an increased risk for severe COVID-19 disease according to the CDC list of COVID-19 risk factors[5]	Vaccination with an age-appropriate vaccine is recommended for children, depending on previous vaccination status[3]	Routine vaccination is recommended for patients, depending on vaccination status[4,9]

The recommendation for this group is complex. Consult the organization's guidelines for full recommendation.

This resource summarizes current COVID-19 vaccination recommendations as of October 8, 2025, for select populations by public health authorities and professional healthcare organizations. Please refer to each organization's website for the most up-to-date recommendations as well as recommendations for populations not covered here.

These recommendations are nonpreferential and do not constitute an endorsement or recommendation of specific commercial products.

INDICATION AND IMPORTANT SAFETY INFORMATION FOR NUVAXOVID™ (COVID-19 VACCINE, ADJUVANTED)

INDICATION

NUVAXOVID is a vaccine indicated for active immunization to prevent coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). NUVAXOVID is approved for use in individuals who are:

- 65 years of age and older, or
- 12 years through 64 years of age with at least one underlying condition that puts them at high risk for severe outcomes from COVID-19.

IMPORTANT SAFETY INFORMATION

CONTRAINDICATION

Do not administer NUVAXOVID to individuals with a known history of severe allergic reaction (e.g., anaphylaxis) to any component of NUVAXOVID or to individuals who had a severe allergic reaction (e.g.,anaphylaxis) following a previous dose of NUVAXOVID

MANAGEMENT OF ACUTE ALLERGIC REACTIONS

Appropriate medical treatment must be immediately available to manage potential anaphylactic reactions following administration of NUVAXOVID

MYOCARDITIS AND PERICARDITIS

Clinical trials data provide evidence for increased risks of myocarditis and pericarditis following administration of NUVAXOVID. There have been post-marketing reports of myocarditis and pericarditis following administration of NUVAXOVID

SYNCOPE

Syncope (fainting) may occur in association with administration of injectable vaccines, including NUVAXOVID. Procedures should be in place to avoid injury from fainting

ALTERED IMMUNOCOMPETENCE

Immunocompromised persons, including individuals receiving immunosuppressive therapy, may have a diminished immune response to NUVAXOVID

NUVAXOVID may not protect all vaccine recipients

COMMON ADVERSE REACTIONS

The most commonly reported (>10%) solicited adverse reactions included: injection site pain/tenderness, fatigue/malaise, muscle pain, headache, nausea/vomiting, fever, and joint pain

REFERENCES

1. Child immunization schedule notes. Centers for Disease Control and Prevention. Updated October 7, 2025. Accessed November 10, 2025. https://www.cdc.gov/vaccines/hcp/imz-schedules/child-adolescent-notes.html#note-covid-19 **2.** Childhood immunization schedule by recommendation group. US Department of Health and Human Services. Accessed February 2, 2026. https://www.hhs.gov/childhood-immunization-schedule/index.html **3.** Recommended child and adolescent immunization schedule for ages 18 years or younger. American Academy of Pediatrics. Updated September 17, 2025. Accessed October 9, 2025. https://downloads.aap.org/AAP/PDF/AAP-Immunization-Schedule.pdf **4.** Birth through age 18 immunization schedule. American Academy of Family Physicians. August 28, 2025. Accessed October 20, 2025. https://www.aafp.org/family-physician/patient-care/prevention-wellness/immunizations-vaccines/immunization-schedules/birth-through-age-18-immunization-schedule.html? **5.** Recommended adult immunization schedule for ages 19 years or older. Centers for Disease Control and Prevention. Updated October 7, 2025. Accessed October 8, 2025. https://www.cdc.gov/vaccines/hcp/imz-schedules/downloads/adult/adult-combined-schedule.pdf **6.** AAFP announces fall immunization recommendations, reaffirming commitment to vaccine safety and public health. News release. American Academy of Family Physicians; September 8, 2025. Accessed October 8, 2025. https://www.aafp.org/news/media-center/statements/aafp-announces-fall-immunization-recommendations-reaffirming-commitment-to-vaccine-safety-and-public-health.html **7.** Heidenreich PA, Bhatt A, Nazir NT, Schaffner W, Vardeny O. 2025 concise clinical guidance: an ACC Expert Consensus Statement on adult immunizations as part of cardiovascular care. *J Am Coll Cardiol*. 2025;86(21):2085-2098. doi:10.1016/j.jacc.2025.07.003 **8.** Interim clinical considerations for use of COVID-19 vaccines in the United States. Centers for Disease Control and Prevention. Updated November 4, 2025. Accessed November 25, 2025. https://www.cdc.gov/covid/downloads/hcp/interim-clinical-considerations.pdf **9.** Recommended adult immunization schedule. American Academy of Family Physicians. Updated August 28, 2025. Accessed October 17, 2025. https://www.aafp.org/dam/AAFP/documents/patient_care/immunizations/2025%20adult%20Schedule.pdf

Abbreviation: CDC, Centers for Disease Control and Prevention.

Nuvaxovid™

(COVID-19 Vaccine, Adjuvanted)

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