

Comorbidities and COVID-19

Comorbidities are health conditions or diseases that are present alongside the primary condition being discussed.¹ For example, if a person has diabetes and then contracts COVID-19, diabetes would be considered a comorbidity.¹ The risk of severe illness from COVID-19 increases as the number of comorbid conditions increases.²

CDC 2025 List of Underlying Medical Conditions That Increase a Person’s Risk of Severe COVID-19³

<ul style="list-style-type: none">• Asthma• Cancer<ul style="list-style-type: none">- Hematologic malignancies• Cerebrovascular disease• Chronic kidney disease*<ul style="list-style-type: none">- People receiving dialysis• Chronic lung diseases limited to the following:<ul style="list-style-type: none">- Bronchiectasis- COPD (chronic obstructive pulmonary disease)- Interstitial lung disease- Pulmonary embolism- Pulmonary hypertension• Chronic liver diseases limited to the following:<ul style="list-style-type: none">- Cirrhosis- Nonalcoholic fatty liver disease	<ul style="list-style-type: none">- Alcoholic liver disease- Autoimmune hepatitis• Cystic fibrosis• Diabetes mellitus, type 1• Diabetes mellitus, type 2*• Gestational diabetes• Disabilities,[†] including Down’s syndrome• Heart conditions (such as heart failure, coronary artery disease, or cardiomyopathies)• HIV (human immunodeficiency virus)• Mental health conditions limited to the following:<ul style="list-style-type: none">- Mood disorders, including depression- Schizophrenia spectrum disorders• Neurologic conditions limited to dementia[†] and Parkinson’s disease	<ul style="list-style-type: none">• Obesity (BMI ≥30 kg/m² or ≥95th percentile in children)• Physical inactivity• Pregnancy and recent pregnancy[‡]• Primary immunodeficiencies• Heart conditions (such as heart failure, coronary artery disease, or cardiomyopathies)• Smoking, current and former• Solid-organ or blood stem-cell transplantation• Tuberculosis• Use of corticosteroids or other immunosuppressive medications
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*Indicates presence of evidence for pregnant and nonpregnant women.³
†Underlying conditions for which there is evidence in pediatric patients.³
‡As of May 27, 2025, the US Secretary of Health and Human Services, Robert F. Kennedy Jr., announced that the COVID-19 vaccine will no longer be recommended for healthy pregnant women.⁴

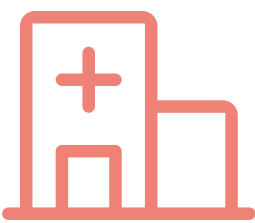
Age Is the Biggest Risk Factor

The effects of certain underlying medical conditions on COVID-19 outcomes can be compounded by age. While age itself is not a comorbidity, it is often associated with a weakened immune system and a higher prevalence of comorbid conditions, which increase the risk of severe COVID-19 outcomes.^{2,5}

Other Risk Factors²

- Physical inactivity
- Pregnancy and recent pregnancy
- Smoking, current and former


This is not a complete list of risk factors.



Hospitalization

Of adults hospitalized for COVID-19, 80% had at least 2 comorbidities.^{6*}

*Data for adults aged ≥18 years is from the CDC’s COVID-NET surveillance from October 2023 through April 2024.



Mortality

Mortality can be **as high as 1.78x greater** in patients with comorbidities such as cerebrovascular disease, chronic obstructive pulmonary disease, diabetes, respiratory diseases, heart disease, and heart failure.^{7†}

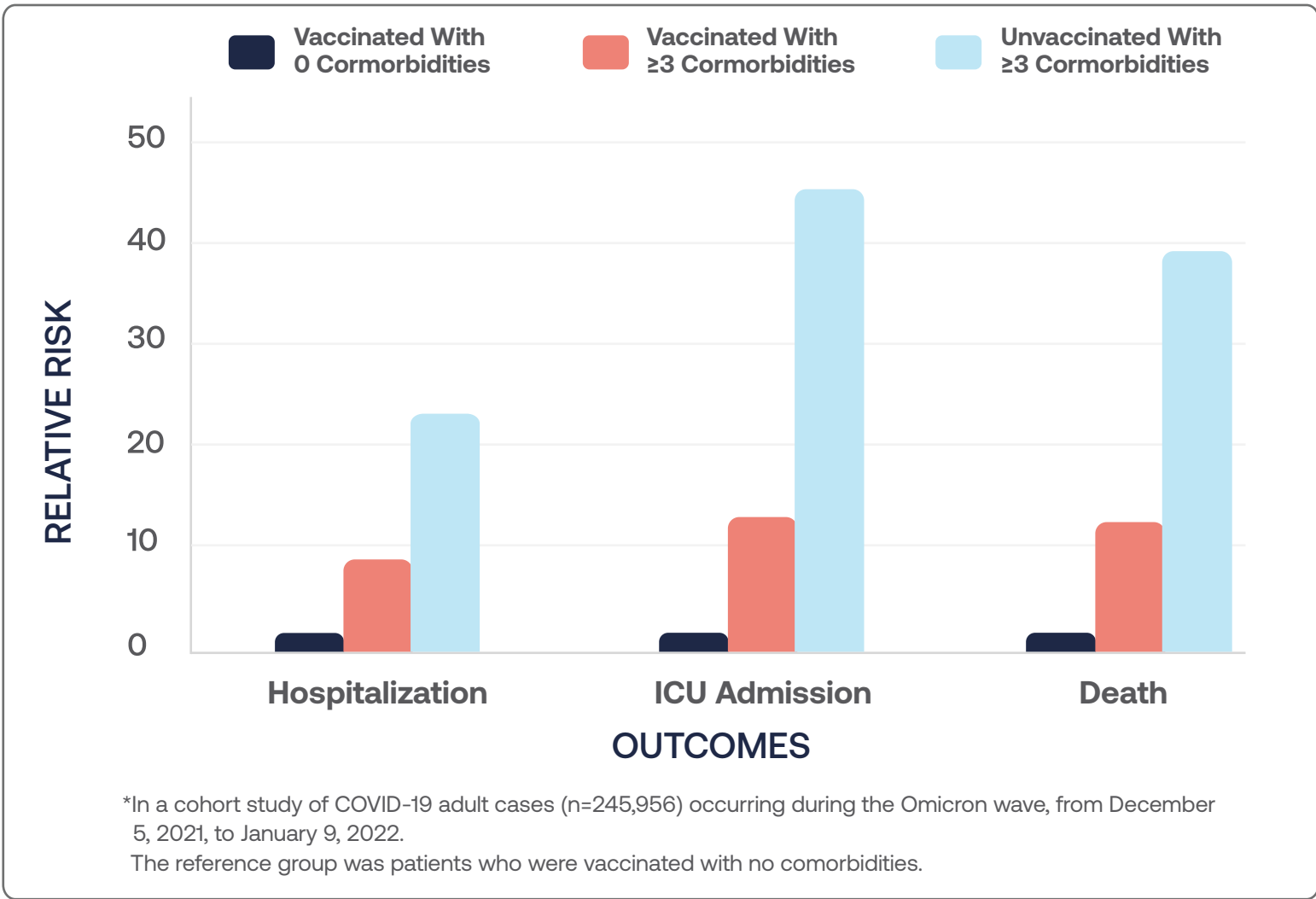
†From a meta-analysis of 72 studies published between January 2022 and March 2024 that assessed mortality and hospitalization risk from COVID-19 in individuals with comorbidities versus those without during the Omicron era.



Severe Complications

Some research shows that the risk of severe COVID-19 complications rises with each additional comorbidity.⁸

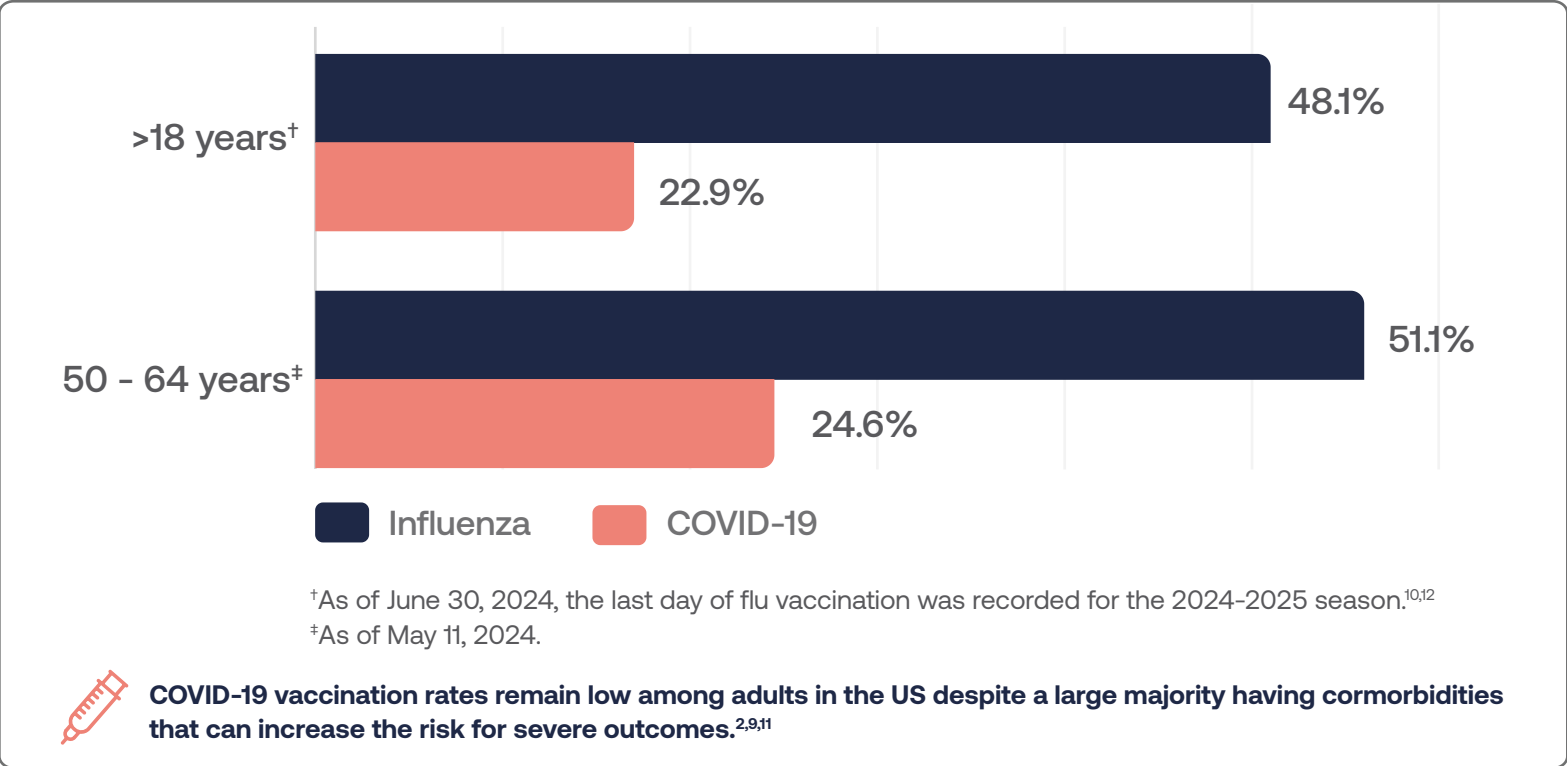
Risk Comparison for Vaccinated vs Unvaccinated Individuals With ≥3 Comorbidities Compared to Vaccinated Individuals With No Comorbidities^{8*}



Bridging the Gap: COVID-19 and Flu Vaccinations

Despite the benefits, COVID-19 vaccination rates are half that of flu vaccination in the US.^{9,10}

Cumulative Vaccination Rates for COVID-19 and Influenza Among Adult Groups (2024-2025 Season)



- According to the CDC, eligible patients can receive COVID-19 vaccines at the same time as their flu vaccine¹²
- Getting vaccinated against both COVID-19 and the flu can help provide protection against these serious illnesses this season¹²

COPD = chronic obstructive pulmonary disease; ICU = intensive care unit; IHD = ischemic heart disease; PCC = post-COVID conditions.

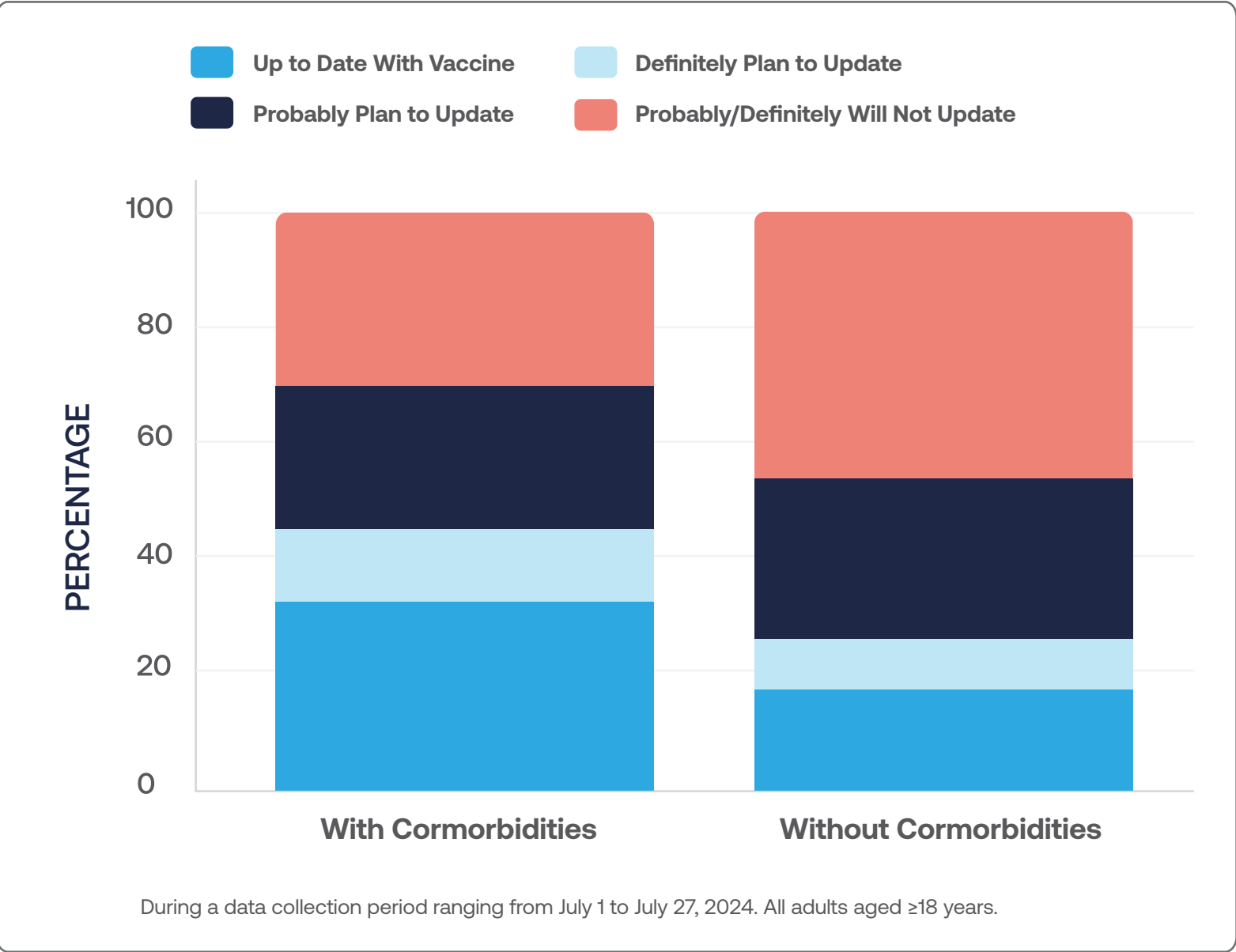


Higher Risks in Unvaccinated Individuals

Being unvaccinated or not being up to date on COVID-19 vaccinations appears to increase a person’s risk of severe COVID-19 outcomes.²

Providers should assess a patient’s age, underlying medical conditions, other risk factors, and vaccination status to determine their risk of severe COVID-19 outcomes.²

Comparison of Vaccination and Vaccine Intent Among Americans With and Without Any Medical Conditions Associated With Higher Risk for COVID-19¹³



In one qualitative analysis, people with poorly controlled chronic conditions worried that the COVID-19 vaccine might complicate their care, leading to vaccine hesitancy.¹⁴



Comorbidities and Long COVID

Preexisting comorbidities, including anxiety and/or depression, asthma, COPD, diabetes, IHD, and immunosuppression, were found to be significantly associated with a higher risk of PCC, aka Long COVID.¹⁵

References: 1. Valderas JM, Starfield B, Sibbald B, Salisbury C, Roland M. Defining comorbidity: implications for understanding health and health services. *Ann Fam Med*. 2009;7(4):357-363. doi:10.1370/afm.983 2. Centers for Disease Control and Prevention. Underlying conditions and the higher risk for severe COVID-19. Updated February 6, 2025. Accessed July 14, 2025. <https://www.cdc.gov/covid/hcp/clinical-care/underlying-conditions.html> 3. Prasad V, et al. *N Engl J Med*. Published online May 20, 2025. doi:10.1056/NEJMs2506929 4. Schwartz JL. *N Engl J Med*. Published online June 18, 2025. doi:10.1056/NEJMp2507766 5. Panagiotakopoulos L, Godfrey M, Moulia DL, et al. Use of an additional updated 2023-2024 COVID-19 vaccine dose for adults aged ≥65 years: recommendations of the Advisory Committee on Immunization Practices—United States, 2024. *MMWR Morb Mortal Wkly Rep*. 2024;73(16):377-381. doi:10.15585/mmwr.mm7316a4 6. Taylor CA, Patel K, Pham H, et al. COVID-19–associated hospitalizations among U.S. adults aged ≥18 years—COVID-NET, 12 states, October 2023–April 2024. *MMWR Morb Mortal Wkly Rep*. 2024;73:869–875. doi:10.15585/mmwr.mm7339a2 7. Chapman A, Barouch DH, Lip GYH, et al. Risk of severe outcomes from COVID-19 in comorbid populations in the Omicron era: a systematic review and meta-analysis. *Int J Infect Dis*. doi:10.1016/j.ijid.2025.107958 8. Simard M, Boiteau V, Fortin É, et al. Impact of chronic comorbidities on hospitalization, intensive care unit admission and death among adult vaccinated and unvaccinated COVID-19 confirmed cases during the Omicron wave. *J Multimorb Comorb*. 2023;13:26335565231169567. doi:10.1177/26335565231169567 9. Centers for Disease Control and Prevention. Weekly COVID-19 Vaccination Dashboard. COVIDVaxView. Updated May 7, 2025. Accessed July 14, 2025. <https://www.cdc.gov/covidvaxview/weekly-dashboard/index.html> 10. Centers for Disease Control and Prevention. Weekly Flu Vaccination Dashboard. Updated May 7, 2025. Accessed July 14, 2025. <https://www.cdc.gov/fluview/dashboard/index.html> 11. Watson KB, Wiltz JL, Nhim K, Kaufmann RB, Thomas CW, Greenlund KJ. Trends in multiple chronic conditions among US adults, by life stage, behavioral risk factor surveillance system, 2013-2023. *Prev Chronic Dis*. 2025;22:E15. doi:10.5888/pcd22.240539 12. Centers for Disease Control and Prevention. Getting a flu vaccine and other recommended vaccines at the same time. Influenza (Flu). Updated September 17, 2024. Accessed July 14, 2025. <https://www.cdc.gov/flu/vaccines/coadministration.html> 13. Centers for Disease Control and Prevention. COVID-19 vaccination coverage and vaccine confidence among adults. COVIDVaxView. Updated November 15, 2024. Accessed July 14, 2025. <https://www.cdc.gov/covidvaxview/interactive/adults.html> 14. Choi T, Chan B, Grech L, et al; CANVACCS, DIABVACCS, and MSVACCS Investigators. Factors influencing COVID-19 vaccine hesitancy among patients with serious chronic illnesses during the initial Australian vaccine rollout: a multi-centre qualitative analysis using the health belief model. *Vaccines (Basel)*. 2023;11(2):239. doi:10.3390/vaccines11020239 15. Tsampasian V, Elghazaly H, Chattopadhyay R, et al. Risk factors associated with post-COVID-19 condition: a systematic review and meta-analysis. *JAMA Intern Med*. 2023;183(6):566-580. doi:10.1001/jamainternmed.2023.0750