# COVID-19

This material covers a brief overview of two distinct COVID-19 aspects:

1. Identifying patients who are at high risk for progression to severe COVID-19, including hospitalization or death 2. Clinical symptom severity spectrum



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# The CDC provides a list of underlying medical conditions associated with higher risk of severe COVID-19<sup>1</sup>

- Evidence was determined by CDC reviewers based on available literature about COVID-19
- Literature includes:
  - published reports
  - scientific articles in press
  - unreviewed pre-prints, and
  - data from CDC-led investigations
  - The methods used to assess the conditions have changed during the pandemic as the amount of literature and types of studies increased
    - Initially the list was based on descriptive data
    - As the research expanded, literature was categorized by study design
- Since May 2021, the process includes a CDC-led review process that uses rigorous systematic review methods

# A person with severe illness from COVID-19 is more likely to...<sup>2</sup>



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1. CDC COVID-19 People with Certain Medical Conditions. Available at; <u>www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-with-medical-conditions.html</u>. Accessed: April 2022;

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CDC Science Brief: Evidence Used to Update the List of Underlying Medical Conditions Associated with Higher Risk for Severe COVID-19.
Available at: https://www.cdc.gov/coronavirus/2019-ncov/science/science-briefs/underlying-evidence-table.html. Accessed: April 2022.

## Summary of risk factors for progression to severe COVID-19



#### **Older adults**

- Older adults are at highest risk of getting very sick from COVID-19
- More than 81 % of COVID-19 deaths occur in people over age 65 years
  - The number of deaths in those >65 years is 97 times higher than among those aged 18–29 years



#### Comorbidities

The risk of severe COVID-19 increases as the number of underlying medical conditions a person has increases

#### Racial/ethnic minority or disabilities

- Risk increases with increase in likelihood of comorbidities, reduced healthcare access and increased likelihood of living in a congregate setting
- People with certain disabilities are more likely to get COVID-19 and have worse outcomes



#### Vaccination status

• Staying up to date with COVID-19 vaccines (getting primary series and booster) and following preventive measures for COVID-19 are especially important if you are older or have severe health conditions or more than one health condition



#### Pregnancy

• Pregnant and recently pregnant people (for at least 42 days following end of pregnancy) are more likely to get very sick from COVID-19 compared with non-pregnant people

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# Underlying medical conditions\* may increase likelihood for progression to severe COVID-19<sup>1</sup>

An estimated 176.1 million individuals representing 75.4% of U.S. adults had at least one increased-risk condition,  $40.3\% \ge 2$  and,  $18.5\% \ge 3$  conditions<sup>2</sup>

Disabilities	Chronic kidney disease	HIV			Substance use disorders		BMI >25 kg/m²		
Chronic liver disease Chronic lung disease		isease				Physical inactiv	vity Co	ncer	Pregnancy
Cystic fibrosis	Mental health conc	litions				Tuberculosis	Smoking, current or former		
Neurologic conditions limited to dementia						Solid organ o	or blood st	em cell	transplant
Heart condition	s Diabetes (type 1 or t	type 2)	Stroke or cerebrovascular disease						
Immunocompromised condition or weakened immune system		kened				Sickle ce	ll disease c	or thala	ssemia

\*This list was last updated on 26 February 2022, and does not include all medical conditions that place a person at higher risk of severe illness from COVID-19; ongoing reviews of additional underlying conditions are being conducted. The conditions listed are not in order of risk.

HIV, human immunodeficiency virus

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CDC COVID-19 People with Certain Medical Conditions. Available at; <u>https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-with-medical-conditions.html</u>. Accessed: April 2022.
Ajufo, E., Rao, S., Navar, A. M., Pandey, A., Ayers, C. R., & Khera, A. (2021). U.S. population at increased risk of severe illness from COVID-19. *American journal of preventive cardiology*, 6, 100156. <u>https://doi.org/10.1016/i.aipc.2021</u>.100156



#### 1. Identifying patients who are at high risk for progression to severe COVID-19, including hospitalization or death

# Key Findings from One Large Cross-Sectional Study

Underlying Medical Conditions and Severe Illness Among 540,667 Adults Hospitalized With COVID-19, March 2020–March 2021



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Underlying Medical Conditions Associated with Higher Risk for Severe COVID-19: Information for Healthcare Professionals. Accessed from: <u>https://www.cdc.gov/coronavirus/2019-ncov/hcp/clinical-care/underlyingconditions.html</u> on 27 Apr 2022.



# **COVID-19 Disease Course**



Adapted from the Report of the WHO-China Joint Mission on Coronavirus Disease 2019 \*mean; † median; ‡ unknown average type

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World Health Organization. Report of the WHO-China Joint Mission on Coronavirus Disease 2019 (COVID-19): 16–24 February 2020 [online] Available at <u>https://www.who.int/docs/default-source/</u> coronaviruse/who-china-joint-mission-on-covid-19-final-report.pdf [Accessed August 2021]



## NIH Guidelines: The COVID-19 Severity Spectrum

Stage	Characteristics					
Asymptomatic or pre-symptomatic	Positive test for SARS-CoV-2 but no symptoms					
Mild illness	Varied symptoms (e.g., fever, cough, sore throat, malaise, headache, muscle pain) but no shortness of breath, dyspnea or abnormal imaging					
Moderate illness	SpO <sub>2</sub> $\ge$ 94% and evidence of lower respiratory disease during clinical assessment or imaging					
Severe illness	SpO <sub>2</sub> <94 % , PaO <sub>2</sub> /FiO <sub>2</sub> <300mmHg, respiratory rate >30 breaths/min, or lung infiltrates >50 % on imaging					
Critical illness	Respiratory failure, septic shock, and/or multiorgan dysfunction					

Visit the NIH website for the most up-to-date clinical spectrum information.

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NIH, National Institutes of Health; PaO<sub>2</sub>/FiO<sub>2</sub>, ratio of arterial partial pressure of oxygen to fraction of inspired oxygen; SpO<sub>2</sub>, oxygen saturation. NIH COVID-19 Treatment Guidelines. Clinical Spectrum of SARS-CoV-2 Infection. Available from: <u>https://</u>www.covid19treatmentguidelines.nih.gov/overview/clinical-spectrum/ [Accessed 30 July 2021].



# **Additional COVID-19 Education Resources**

Pfizer Medical Portal – Infectious Disease

### Explore topics such as:





SARS-CoV-2 Viral Replication

SARS-CoV-2 Virology



COVID-19 Clinical Presentation



COVID-19 Clinical Overview



COVID-19 Testing and Diagnosis





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