

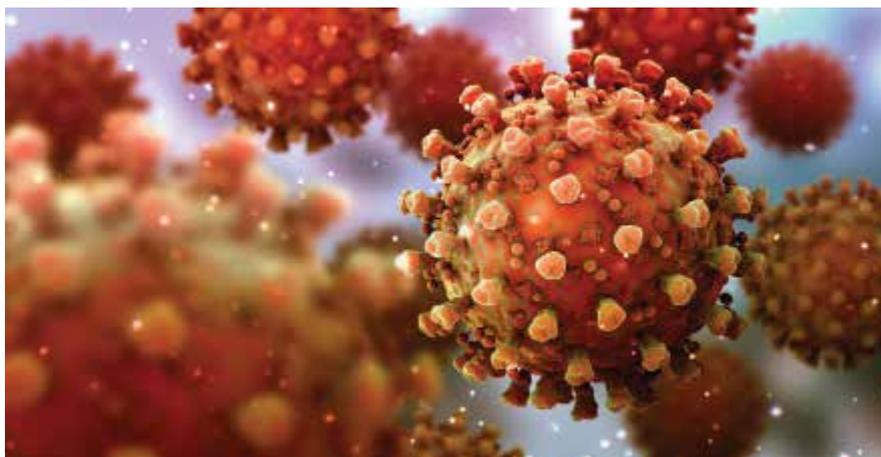
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## Is asthma a risk factor for COVID-19? Answers are evolving and likely to be complex

As the COVID-19 pandemic began, it was commonly believed that patients with asthma would be at increased risk for severe symptoms, hospitalization and mortality. Surprisingly, “a growing body of research that suggests that the link between COVID-19 and asthma is far more complex than experts might have anticipated.” A small number of studies have shown that patients with asthma are at no greater risk for COVID-19 than patients who do not have asthma. However, a more in-depth study has shown that people with non-allergic asthma may indeed be at greater risk, yet those with allergic asthma may not. This article provides brief highlights of various studies, scientific commentaries and news articles on the topic but it is not exhaustive. In addition, virtually all of the articles stated there is need for further research.

### “Asthma is absent among top COVID-19 risk factors, early data shows”

**New York Times, April 16, 2020; updated April 20, 2020.** The article includes multiple topics and indicates that in April, 2020, only about 5% of COVID-19 deaths in New York were of people who were known to also have asthma. It also notes that a commentary in *Lancet* (see below) called it “striking” that asthma appeared “to be underrepresented in the comorbidities reported for patients with COVID-19.” [www.nytimes.com/2020/04/16/health/coronavirus-asthma-risk.html](http://www.nytimes.com/2020/04/16/health/coronavirus-asthma-risk.html)



### “Do chronic respiratory diseases or their treatment affect the risk of SARS-CoV-2 infection?”

**The Lancet, April 3, 2020.** This commentary considers several possibilities for the underrepresentation of asthma and chronic obstructive pulmonary disease (COPD) as comorbidities in COVID-19 patients and mentions data from various studies. It also states that “the possibility that inhaled corticosteroids might prevent (at least partly) the development of symptomatic infection or severe presentations of COVID-19 cannot be ignored.” It further says “the potential benefits or harms of inhaled corticosteroids and other treatments...are unclear at present, and no changes to the treatment or management of chronic respiratory conditions, including COPD and asthma, should be considered at this stage.” [www.thelancet.com/action/showPdf?pii=S2213-2600%2820%2930167-3](http://www.thelancet.com/action/showPdf?pii=S2213-2600%2820%2930167-3)

### “Does asthma increase COVID-19 risk? Emerging research suggests a complicated connection”

**Stat News, July 2, 2020.** This article discusses multiple topics, including a “growing body of research that suggests the link between COVID-19 and asthma is far more complex than experts might have anticipated.” It refers to an analysis of more than 1,500 patients from Northwestern Medicine (see below) that found “COVID-19 patients with asthma were no more likely than patients without asthma to be hospitalized.” However, it also describes a study from Harvard (see below) analyzing data from 492,000+ patients in the UK Biobank that suggests asthma subtypes could result in different levels of risk of COVID-19. The article also describes results of a study that showed corticosteroid usage did not significantly increase or decrease the risk of hospitalization among asthmatics with COVID-19. [www.statnews.com/2020/07/02/asthma-Covid19-connection-research](http://www.statnews.com/2020/07/02/asthma-Covid19-connection-research)

**“Prevalence and characterization of asthma in hospitalized and nonhospitalized patients with COVID-19” and “Asthma not associated with increased risk of hospitalization among COVID-19 patients”**

**Journal of Allergy and Clinical Immunology, June 15, 2020; and AAAAI Press Release, June 18, 2020.** A press release from The American Academy of Allergy, Asthma & Immunology (AAAAI) discusses the article, “Prevalence and characterization of asthma in hospitalized and nonhospitalized patients with COVID-19,” published in its journal, the *Journal of Allergy and Clinical Immunology*. The study of 1,526 patients in 10 hospitals affiliated with Northwestern Medicine in the Chicago, IL, US area included 220 patients (14.4%) with asthma, significantly higher than the United States national asthma prevalence of 8-9%. Patients with asthma were not more likely to be hospitalized due to COVID-19 than those without asthma. The risk of hospitalization was not significantly greater for asthmatic patients who were prescribed inhaled corticosteroid (ICS), combination inhaled corticosteroid plus long-acting beta-agonist (ICS/LABA), and/or systemic corticosteroids or a biologic. Limitations of the study included the inability to assess “the contribution of asthma severity and asthma endotypes to COVID-19 severity.” No difference in mortality rates was observed between patients with COVID-19 who had asthma and those who did not. [www.jacionline.org/article/S0091-6749\(20\)30840-X/fulltext](http://www.jacionline.org/article/S0091-6749(20)30840-X/fulltext) and [www.aaaai.org/about-aaaai/newsroom/news-releases/asthma-covid](http://www.aaaai.org/about-aaaai/newsroom/news-releases/asthma-covid)

**“Asthma among hospitalized patients with COVID-19 and related outcomes”**

**Journal of Allergy and Clinical Immunology, August 6, 2020.**

A study by researchers in the New York, NY, US area aimed to determine whether “underlying asthma was associated with poor outcomes among hospitalized patients with severe COVID-19 disease compared to patients without asthma.” A pre-publication abstract summarizes results from 1,298 patients, age less than 65 years, who did not have COPD and were hospitalized with COVID-19. Asthma prevalence was 12.6% overall but 23.6% in a subset of 55 patients less than 21 years of age. “The asthma diagnosis was not associated with worse outcomes, regardless of age, obesity, or other high-risk comorbidities.” <https://pubmed.ncbi.nlm.nih.gov/32771560>

**“Asthma and COVID: What are the important questions?” and “Asthma does not seem to increase the severity of COVID-19”**

**Journal of Allergy and Clinical Immunology: In Practice, June 22, 2020; and Rutgers Today, July 6, 2020.** A commentary from researchers at Rutgers University, published in the *Journal of Allergy and Clinical Immunology: In Practice*, discusses several COVID-19-related topics. The article states that “Controversy exists as to whether patients with asthma manifest high or elevated rates of COVID-19 incidence.” It notes that “surprisingly, limited data exist that patients with severe asthma with markedly diminished lung function and receiving monoclonal antibodies are at greater risk than those with less severe disease.” The authors summarize saying that “whether asthma represents a comorbidity associated with susceptibility to and progression of COVID-19 remains unclear.” They also call for additional research to evaluate “the characteristics of those with asthma who develop COVID-19 and how asthma therapy, including inhaled corticosteroids or biologics, modulates such risks.” The article in *Rutgers Today* discusses the commentary. [www.sci](http://www.sci)

[encedirect.com/science/article/pii/S2213219820306061?via%3Di](http://encedirect.com/science/article/pii/S2213219820306061?via%3Di) hub and [www.rutgers.edu/news/asthma-does-not-seem-increase-severity-covid-19](http://www.rutgers.edu/news/asthma-does-not-seem-increase-severity-covid-19)

**“Association of asthma and its genetic predisposition with the risk of severe COVID-19”**

**Journal of Allergy and Clinical Immunology, June 6, 2020.**

The *Stat News* article listed above also discussed a study by researchers at Harvard who pursued the question further by analyzing two asthma subtypes—allergic asthma and non-allergic asthma—as separate risk factors for COVID-19. (Allergic asthma can be triggered by allergens such as pollen, dust mites or mold, whereas non-allergic asthma can be exacerbated by exercise, stress, cold weather or other factors.) The study analyzed medical records from 492,768 people registered in the United Kingdom Biobank. The mean age was 56 ± 8 years, 55% were female, 95% were white and 65,677 (13%) had asthma. The study evaluated the relationship of asthma and its major phenotypes with the risk of developing severe COVID-19. It also examined the relations of genetic predisposition with severe COVID-19. In a letter to the editor titled, “Association of asthma and its genetic predisposition with the risk of severe COVID-19,” published in the *Journal of Allergy and Clinical Immunology*, the authors state, in part, that the study “demonstrated that adults with asthma had a higher risk of severe COVID-19, which was driven by the increased risk in patients with non-allergic asthma. In contrast, the risk of severe COVID-19 was not significantly elevated in patients with allergic asthma.” [www.jacionline.org/article/S0091-6749\(20\)30806-X/fulltext](http://www.jacionline.org/article/S0091-6749(20)30806-X/fulltext)