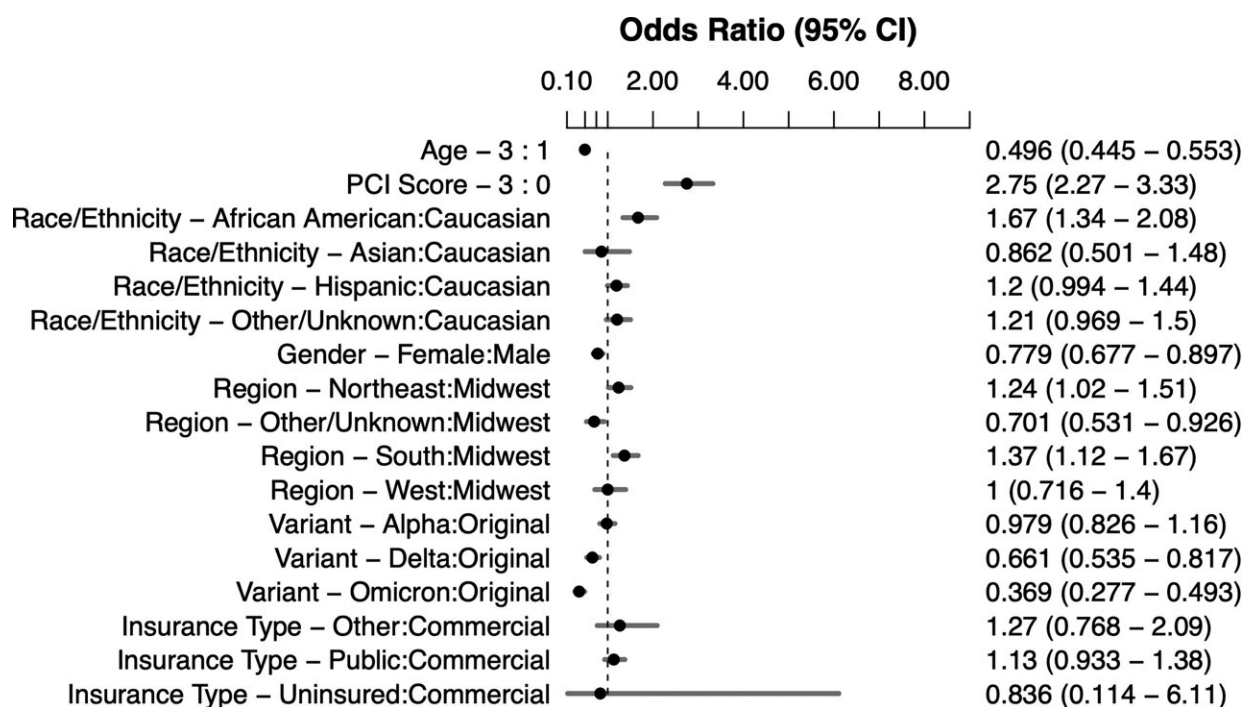


# Study finds risk factors for severe COVID-19 cases in children

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Odds ratios with 95% confidence intervals from multivariable ordinal regression model between risk factors and severe outcomes in 0- to 4-year-old patients with COVID-19. For continuous variables represented by restricted cubic splines (age and PCI score), we present adjusted odds ratios comparing the 75th to 25th percentiles. Credit: *Hospital Pediatrics* (2023). DOI: 10.1542/hpeds.2022-006833

Children who had preexisting health problems or who lived in the Southern United States had a higher risk for severe health outcomes

from acute COVID-19 infections, according to researchers at UT Southwestern Medical Center. The results, reported in the journal *Hospital Pediatrics*, also showed the importance of vaccinations in reducing the severity of illness for those who became infected.

"While receiving the COVID-19 vaccines did not mean that our little patients would not get sick from the virus, vaccines did protect them from more severe outcomes such as death and intensive care admissions. Protecting your children by immunizing them is a good thing, especially if your child has a [preexisting condition](#), such as heart disease or asthma," said one of the study's authors, Christoph Lehmann, M.D., Professor of Pediatrics and in the Lyda Hill Department of Bioinformatics.

The [national study](#) analyzed records from 165,437 children age 18 and younger who tested positive for COVID-19 between January 2020 and January 2022. About 1.8% were hospitalized without complication, 1.8% were admitted to intensive care or needed intensive respiratory support, and 31 children died.

The researchers found that children in the Southern United States were more than three times as likely to have more severe complications compared with other areas of the country.

"It matters where you live," Dr. Lehmann noted. "While we do not know what causes children in the South to have worse outcomes, our findings call for an exploration of possible causes—such as weather and climate, immunization rates, public health or government messaging, mandates, and closures."

The study also found that among children under age 5, those younger than 2 years old were at the highest risk for severe outcomes. This finding contradicts initial anecdotal observations suggesting that infants

were not as prone to [severe disease](#) with COVID-19 as they were from other respiratory viruses such as respiratory syncytial virus (RSV).

"While this wasn't surprising to us—smaller airways are disproportionately affected by respiratory illness—it does mean that we have to be more vigilant when the little ones acquire COVID-19," Dr. Lehmann added.

Finally, the study found that those with multiple chronic medical conditions, such as [heart disease](#) and [lung disease](#), were more than twice as likely to have severe complications following COVID-19 infection, and the more chronic conditions they had, the higher the risk.

**More information:** Milan Ho et al, Incidence and Risk Factors for Severe Outcomes in Pediatric Patients With COVID-19, *Hospital Pediatrics* (2023). [DOI: 10.1542/hpeds.2022-006833](https://doi.org/10.1542/hpeds.2022-006833)

Provided by UT Southwestern Medical Center

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