

Researchers demonstrate comparative risk of mRNA vaccinations vs. COVID-19 in teens

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Case Western Reserve University researchers have demonstrated that the risk for myocarditis/pericarditis (heart inflammation) among male teens (12-17) diagnosed with COVID-19 is nearly six times higher than their combined risk following first and second doses of an mRNA COVID-19 vaccination. The risk for myocarditis/pericarditis among girls (ages

12-17) is 21 times greater from COVID-19 than from vaccines.

"Comparative risk can complicate decisions for parents in such highly charged health debates. But our study shows that for parents concerned for their teens about myocarditis/pericarditis (heart inflammation), the safer choice is vaccination," said Mendel E. Singer, associate professor and vice chair for education in the Department of Population and Quantitative Health Sciences at Case Western Reserve University School of Medicine.

Singer and his colleagues made their paper public through medRxiv in late July. (The paper is not peer-reviewed, but is based on readily available data.)

This study is based on [electronic health records](#) pulled from aggregated data across 48 large U.S. health systems within the TriNetX Research Network. The authors pulled data to match demographics of patients highlighted in recent stories about vaccine side effects in male teens, ages 12-17, from the Vaccine Adverse Events Reporting System (VAERS) with reported mRNA vaccine adverse reactions.

Data from more than 6,800 males, ages 12-17 (diagnosed with COVID-19) matches the demographics of patients (males, ages 12-17) from VAERS reports that have caused concern. The authors also pulled data on females, ages 12-17 (diagnosed with COVID-19), with a sample size of 7,300 from the TriNetX database.

"I am a pediatrician and a father, and like many parents, I was concerned," said co-author David Kaelber, professor of internal medicine and pediatrics at the School of Medicine and chief medical information officer of the MetroHealth System.

"Even with our calculations made to qualify possible gaps in the data

from this large dataset, our findings still point to a higher risk of myocarditis/pericarditis among teens who get COVID-19," said Kaelber. "Based on our findings, on my daughter's 12th birthday, we went to get her a COVID-19 vaccination to be sure she is protected, and to protect other members of our family. With the highly contagious Delta variant going around, and the new school year around the corner, this is a good time for parents to be reassured that vaccination is safer for their kids than getting COVID-19."

Study co-author Ira B. Taub, a pediatric cardiologist with Akron Children's Hospital Heart Center, echoed his colleagues' sentiments: "I am a pediatric cardiologist and have been asked for guidance from concerned parents. Our findings point to higher risk from COVID-19, and our study only looks at one condition—[heart inflammation](#). There are other consequences from getting COVID-19, including the risk that teens can carry the disease to vulnerable family members. I emphasize as well that vaccination is safer than getting COVID-19."

More information: Mendel E. Singer et al, Risk of Myocarditis from COVID-19 Infection in People Under Age 20: A Population-Based Analysis, *medrxiv* (2021). [DOI: 10.1101/2021.07.23.21260998](https://doi.org/10.1101/2021.07.23.21260998)

Provided by Case Western Reserve University

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