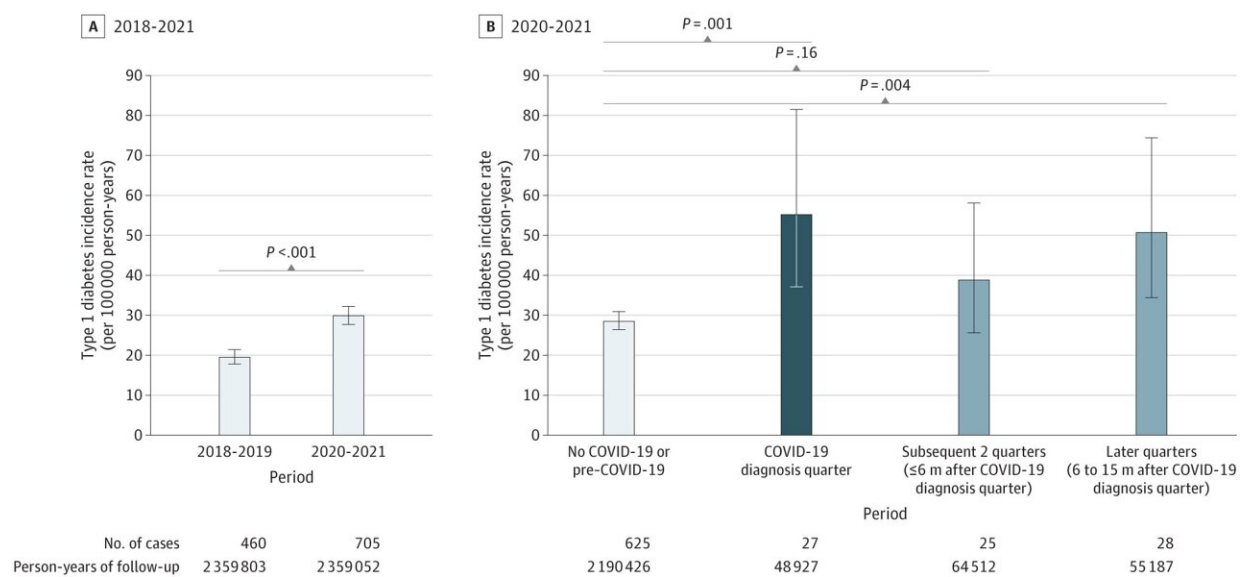


# Diagnosis of type 1 diabetes after SARS-CoV-2 infection: Researchers find possible correlation

May 22 2023, by Luisa Hoffmann



Incidence Rates for Type 1 Diabetes in Children With and Without a COVID-19 Diagnosis. A, Incidence rate of type 1 diabetes before the pandemic (2018-2019) and during the pandemic (2020-2021) for 1 181 096 children with medical insurance claims data. B, For children in the pandemic period, the incidence rate of type 1 diabetes is shown from January 2020 to December 2021 in the absence of a preceding or concurrent COVID-19 diagnosis (light blue bar), during the quarter with the COVID-19 diagnosis (dark blue bar), and for the 2 quarters (6 calendar months) and subsequent quarters (6 to 15 calendar months) after the COVID-19 diagnosis quarter (blue bars). The number of cases of type 1 diabetes and the person-years of follow-up per group are indicated. Error bars indicate 95% binomial CIs of the respective incidence rate estimate. Credit: *JAMA* (2023). DOI: 10.1001/jama.2023.8674

During the COVID-19 pandemic, an increase in the chronic autoimmune disease type 1 diabetes was observed in children. Researchers at Helmholtz Munich and TU Dresden, in cooperation with the Kassenärztliche Vereinigung Bayern (KVB), have now investigated whether there is a temporal association between infection with the SARS-CoV-2 virus and the development of type 1 diabetes. The team of researchers explored data of over 1.1 million statutorily insured children born between 2010 and 2018 in Bavaria.

Different studies have documented an increased incidence of type 1 diabetes during the COVID-19 pandemic. However, none of the studies distinguishes between children with and without SARS-CoV-2 [infection](#). Researchers were now able to gain new insights: the KVB data set provides information on whether children diagnosed with type 1 diabetes previously had COVID-19. This allows an analysis of the temporal relationship between a COVID-19 [diagnosis](#) and the diagnosis of type 1 diabetes.

Among the analyzed children without type 1 diabetes diagnosis before the start of the pandemic, 16.6 percent had a diagnosis of COVID-19 between January 2020 and December 2021.

## **SARS-CoV-2 infection was associated with an increased risk of type 1 diabetes in children**

The researchers' initial findings were consistent with data from Germany and other countries: the incidence rate of type 1 diabetes in children between the ages of 2 and 12 years was around 50 percent higher in the years 2020 to 2021 as compared to the incidence rate in 2018 to 2019. Important and novel, they found that the development of type 1 diabetes

in 2020 to 2021 was higher in the children with COVID-19.

The likelihood to develop type 1 diabetes was increased by 57 percent in children who had a confirmed SARS-CoV-2 infection compared to non-infected children. The increase in type 1 diabetes incidence occurred in the same quarter as the COVID-19 diagnosis and also in later quarters.

The new data point to a direct effect of SARS-CoV-2 infection on the development of type 1 diabetes.

"We are cautious in our interpretation, but the findings suggest that the virus could either promote initiation of the underlying autoimmunity in type 1 diabetes or accelerate the progression of the disease in children with existing autoimmunity," says Ezio Bonifacio, last author of the study. Further studies will be needed to elucidate the exact mechanism driving the increased incidence of type 1 [diabetes](#) during the COVID-19 pandemic in [young children](#).

The findings are published in the journal *JAMA*.

**More information:** Andreas Weiss et al, Type 1 Diabetes Incidence and Risk in Children With a Diagnosis of COVID-19, *JAMA* (2023). [DOI: 10.1001/jama.2023.8674](https://doi.org/10.1001/jama.2023.8674)

Provided by Helmholtz Association of German Research Centres

Citation: Diagnosis of type 1 diabetes after SARS-CoV-2 infection: Researchers find possible correlation (2023, May 22) retrieved 19 April 2024 from <https://medicalxpress.com/news/2023-05-diagnosis-diabetes-sars-cov-infection.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private

study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.