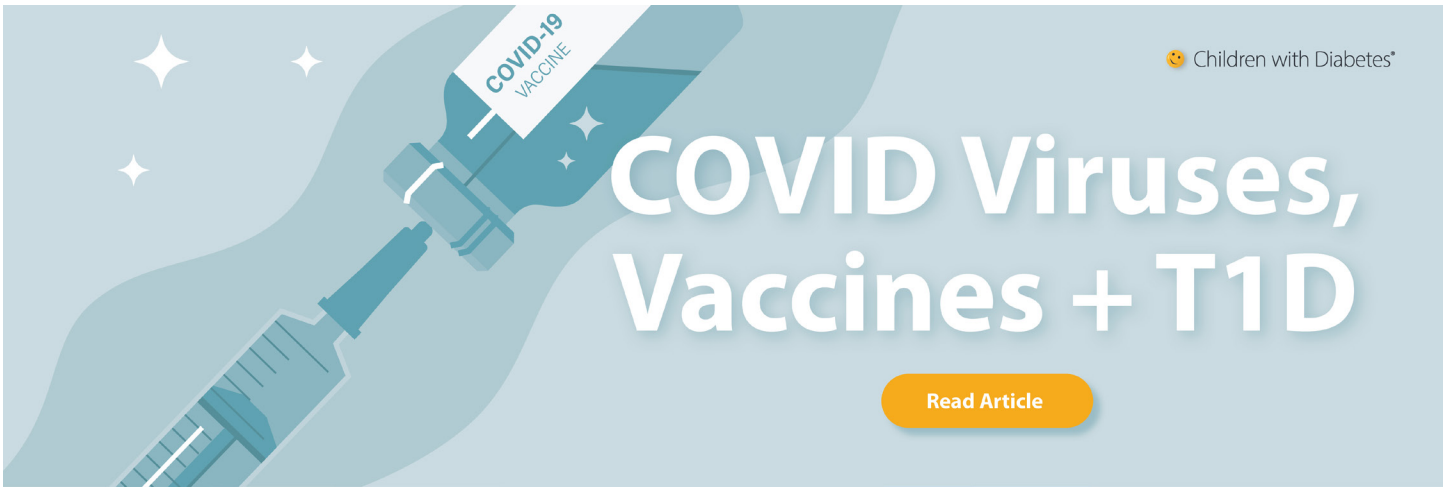

COVID Viruses, Vaccines + T1D

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Although we do not know the cause of type 1 diabetes, scientists believe that there is an environmental trigger that kick-starts the autoimmune process. When the body has the added stress of something like a virus, for example, it may cause the body to start attacking itself. For type 1 diabetes, the islet cells are the target of the body's autoimmune attack.

Viruses and Auto Immunity

Recent data was presented at the European Association for the Study of Diabetes conference in September 2022 that showed people who had recently been diagnosed with type 1 diabetes were more likely to have been diagnosed with enterovirus prior to diagnosis.[1] The data also showed that people who had islet autoimmunity, meaning they were positive for islet autoantibodies and likely to progress to type 1 diabetes, were twice as likely to have had an enterovirus infection.

The coxsackie viruses, which are a type of enterovirus, have been identified as a possible culprit for triggering islet cell destruction. The coxsackie virus has adapted its receptors to fit directly onto the beta cells inside islets, which are the makers of insulin.[2] Other studies, such as The Environmental Determinants of Diabetes in the Young, tested stool samples from people with diabetes, and it also showed that children were more likely to have been exposed to enteroviruses.

It should be noted that the studies are not suggesting that the virus itself is causing type 1 diabetes, but that it is a triggering event. The theory is that someone was already predisposed to getting type 1 diabetes, and the virus was the straw that broke the camel's back, as the saying goes. More research is ongoing, and only time will tell.

SARS-COV-2, also known as Coronavirus, also known as COVID-19 and T1D Diagnosis

There is still a lot of debate in the scientific community on whether the virus of our recent pandemic is increasing diagnoses of type 1 diabetes around the world. There were a lot of studies that showed that the rate of diabetic ketoacidosis (DKA) at diagnosis of type 1 diabetes increased during the pandemic, likely due to people delaying medical care and coming in with more severe symptoms.[3,4]

There were some studies that showed many children and adults who were diagnosed with type 1 diabetes previously tested positive for COVID-19.[5] But there were others that did not find the same association. Even for the studies that found an association, the authors usually mention that it's unclear whether there is a causal relationship or just an association between COVID-19 infection and type 1 diabetes diagnosis. Authors of the recent study published in JAMA Pediatrics state that although they saw an increase in new diagnosis of T1D and DKA in the San Diego area, there were still many limits to the study data and more research should still be completed.[6]

COVID-19 Vaccination and T1D Diagnosis

There have been some case reports of people diagnosed with type 1 diabetes after receiving the COVID-19 vaccination, but the reports are usually about a very small number of patients, often about only one patient, in fact. [7] In a letter to the editor of Diabetes Metabolism, the authors discuss how the patients presented in the article, "Fulminant type 1 diabetes (T1DM) after COVID-19 vaccination," were positive for islet autoantibodies and it was not clear how the vaccine may have induced onset of type 1 diabetes.[8]

Dr. Daniel DeSalvo, pediatric endocrinologist in Houston, acknowledges the immense benefit of COVID-19 vaccinations in the fight against the global pandemic, but suggests that if a child has increased risk of developing type 1 diabetes with multiple positive autoantibodies, it may be beneficial to consider holding off on the vaccine or additional boosters. However, discussing this with your healthcare provider and weighing the risks and benefits to your individual health is his key recommendation.

In Summary

As we have all seen throughout the pandemic, science is ever-changing and evolving based on new data. The relationship between COVID-19 infection and vaccinations is complex and still not fully understood. We also have an article from January 2022 about the risks of COVID-19 to people who already have type 1 diabetes. More research is still underway, and only time will tell if either the virus or the vaccine increase peoples' risk of getting type 1 diabetes.

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