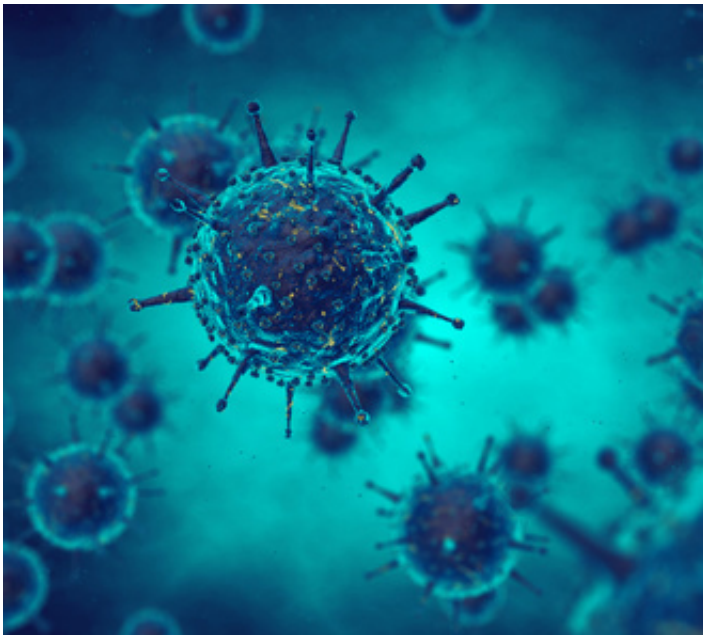


Infections can increase diabetes risk in children

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Infections (e.g. by viruses) can increase risk for type 1 diabetes in children,
Credit: nobeastsofierce / Fotolia

Neuherberg, Germany, May 4, 2016. Viral respiratory infections during the first six months of life are associated with an increased risk for type 1 diabetes. This is the conclusion reached by a team of scientists at the Helmholtz Zentrum München during a study published in the current issue of the renowned US magazine *JAMA*.

The scientists headed by Prof. Dr. Anette-Gabriele Ziegler, Director of

the Institute of Diabetes Research (IDF) at Helmholtz Zentrum München, examined anonymized data from almost 300,000 [children](#) born in Bavaria between 2005 and 2007. This represents roughly 85 percent of all newborns in Bavaria during this period. The Kassenärztliche Vereinigung Bayern (KVB - Bavarian Association of Statutory Health Insurance Physicians) provided the data material for research purposes.

Ziegler's team, which is also a partner in the German Center for Diabetes Research (DZD), systematically evaluated all available data on infections with respect to the later development of type 1 diabetes. The infections were broken down according to the localization of the symptoms (such as dermal, eye, gastrointestinal or respiratory infections), the causes (bacterial, viral or mycoses) and the age (quarter-yearly from birth).

First author Dr. Andreas Beyerlein summarizes the results as follows: "Our findings show that viral respiratory tract disorders during the first six months of life significantly increase the risk of children developing type 1 diabetes." Infections that occurred later or that involved other organs were not associated with a significantly higher risk. For the researchers, these findings are a further piece in the puzzle of understanding how type 1 diabetes develops, with the interaction of genetic and environmental factors still largely unclear.

Previously there were only relatively inconsistent indications from studies with children with a genetically higher risk of type 1 diabetes regarding the influence of infections. "Now for the first time we were able to confirm this in a population-based dataset of almost 300,000 children. In particular, we found strong indications that the first six months are an especially sensitive stage in life," explains lead scientist Ziegler. "This is also consistent with other results that we have published based on data from children with increased familial risk, which already

suggested that the first half year of life is crucial for the development of the immune system and of autoimmune diseases such as type 1 [diabetes](#) ."

In the future the scientists want to determine whether there is actually a causal relationship and if yes, exactly which pathogens are involved and how they trigger this effect. This could then serve as a basis for attempting to develop an appropriate vaccine.

More information: Andreas Beyerlein et al, Infections in Early Life and Development of Type 1 Diabetes, *JAMA* (2016). [DOI: 10.1001/jama.2016.2181](#)

Provided by Helmholtz Zentrum München - German Research Center for Environmental Health

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