

Early respiratory infection may double type 1 diabetes risk: study

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Researchers looked at children who had first-degree relatives with the autoimmune disease.

(HealthDay)— What may seem like a harmless cold during the first six months of life may more than double a child's chances of developing antibodies that often lead to type 1 diabetes, new German research suggests.

Infections that occur later don't seem to pose as high as risk. When infants between 6 and 12 months had a respiratory illness, their risk only increased by 32 percent, the study found.

The researchers noted that these findings probably don't apply to all [youngsters](#), because this study was done with children who have a high risk of developing the disease because they have a first-degree relative who has type 1 [diabetes](#).

"In general, the early immune system is still in a phase of development, and may therefore be particularly susceptible for challenges by infectious agents. However, we cannot explain yet why specifically respiratory infections might be relevant in this phase," said study author Andreas Beyerlein, head of the working group on [epidemiology](#) at the Institute of Diabetes Research in Munich.

Results of the study were published online July 1 in *JAMA Pediatrics*.

Infections have long been suspected as potential triggers of type 1 diabetes. Type 1 diabetes is an [autoimmune condition](#) that causes the body's [immune system](#) to mistakenly attack and destroy [insulin](#)-producing [beta cells](#) in the [pancreas](#), according to background information in the study. Insulin is a hormone needed to metabolize the carbohydrates in foods so that they can be used as fuel for the body and brain.

Substances called islet autoantibodies appear in the blood before the development of type 1 diabetes, sometimes years before diabetes is evident. These autoantibodies help researchers predict whether or not someone will develop type 1 diabetes.

In the current study, the researchers followed 148 children who were under 3 months old when they started the study. All of the babies had a first-degree relative with type 1 diabetes.

When the children were 3 months old, the parents were asked to complete a detailed questionnaire that included information about their baby's history of infections, fever and medication use. They were asked to detail the types of symptoms their child had. They were also asked about family history of diabetes, and questions about lifestyle factors, such as whether the mother smoked during pregnancy.

Parents were then asked to record information about any illnesses or diseases that occurred until the child was 3 years old. The children also had their blood tested every three months to look for evidence that they had developed islet autoantibodies.

Over the three-year study, there were 1,245 infectious "events." Most—669—were respiratory infections that affected the upper respiratory tract, including the ear, nose, throat or eye. Infections that affected the digestive system totaled 257, and another 319 cases were classified as "other" infections, such as skin infections.

Children who had a [respiratory infection](#) during the first six months of life had more than twice the odds of developing islet autoantibodies compared to those who didn't have an infection. The researchers also found that having more respiratory infections during the first six months of life was tied to an increased likelihood of a youngster developing islet autoantibodies.

Beyerlein said these findings suggest—but don't prove—that it's not just the cumulative number of infections, but also that the timing of infections is quite important as well.

"Parents of high-risk children might possibly decrease their children's [type 1 diabetes](#) risk by reducing exposure to respiratory infections in very early life," Beyerlein said.

However, reducing exposure to infections may be easier said than done, explained Dr. Spyros Mezitis, an endocrinologist at Lenox Hill Hospital in New York City. "We don't yet know what infectious agent causes this, so we can't yet recommend a vaccine or target the development of a vaccine. The only thing parents can do right now is not expose infants to crowded areas," he said, adding that more studies to identify exactly which infections increase the risk would be helpful.

Dr. Rubina Heptulla, chief of the division of pediatric endocrinology and diabetes at the Children's Hospital at Montefiore in New York City, agreed that more research needs to be done to identify which [infectious agents](#) may be most responsible for the increased risk.

"This study is a good start. But, there are so many viruses circulating. I've always thought that every child who gets sick with an infection should be tested, and now we know that there may be long-term implications even to simple infections. A respiratory illness may be a harbinger to other, more serious problems down the road," she noted, adding that these findings likely only apply to those who have a higher-than-average risk of developing the disease because of their family history.

More information: Learn more about type 1 diabetes from the [U.S. National Library of Medicine](#).

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