

Children help reveal diabetes trigger

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(Medical Xpress)—Cases of type 1 diabetes in children mirror the spread of flu – suggesting it is triggered by an infection carried by wild animals.

Newcastle University researchers suggest [Type 1 diabetes](#) could be infectious and are looking to recruit more [children](#) in the North East and North West affected by the condition to help with further research.

Comparing cases of Type 1 diabetes in North East children with those of [flu](#), the researchers found similar distribution patterns. This suggests that like flu or [chicken pox](#), type 1 diabetes may in part be infectious and display similar "mini-epidemics".

Over a six year cycle, they found that cases not only varied in frequency but also peaked at certain times of the year. This pattern, of both short and long-term cycles, could be caused by an infection carried by a wild animal, which then triggers diabetes Type 1 in those already genetically predisposed to the disease.

Now the team say this kind of research can only be continued with the help of children in the North West and North East.

Dr Richard McNally, Reader in [Epidemiology](#) at Newcastle University said: "There is a growing body of evidence that supports the idea that while children may be genetically predisposed to develop type 1 diabetes, it could be triggered by infection.

"Our research builds on this by comparing how and where flu occurred and we saw a similar pattern with type 1 diabetes.

"We don't want to cause parents undue concern but it is important that we explore this as it opens up new avenues for research and may provide a new way to prevent the condition even starting."

The study published in *PLOS ONE* involved data from 468 children under the age of 14 in the North East who had been diagnosed with type 1 diabetes. Using established [statistical methods](#) for identifying clusters of cases, the team saw evidence that over periods of a few months there were more cases. This pattern was also seen in the distribution of flu in California and the similarities suggest that type 1 diabetes may also be an infectious disease.

The researchers also noted an increase in some years of new cases of type 1 diabetes during the winter months, which could be because infections are more easily passed between people or from animals to people during the cold season.

Previous research by the same team based on information from clinics in Newcastle, and North Tyneside has shown that every six years there is a peak in the number of children with diabetes in this region – although researchers have yet to discover why this pattern exists.

This change in distribution during the year and as the years go by, known as clustering, suggests that there is an infectious trigger for type 1 diabetes which can lead to "mini-epidemics".

The research was only made possible because the team had access to data about the number and location of children who had diabetes – something which is essential for accurate research to take place. Dr Tim Cheetham, Consultant Paediatrician within the Newcastle Hospitals NHS

Foundation Trust and Senior Lecturer at Newcastle University explains: "I think many people will be surprised to learn that in 2013 we are still unable to count precisely how many children have diabetes. By establishing a register we are starting to address this problem so in future we will have a much clearer idea of where people with diabetes were when they are diagnosed and the area where they live now.

"We are now helping to set up the North West registry as well and need young patients and their parents to help us to ensure that we can be at the cutting edge of research into diabetes in the years to come. Importantly, this information can also be used to plan and organise medical services more appropriately."

Children under 18 attending their regular diabetes clinics across North East and now North West England will be asked whether they want their parents or guardians to grant permission for them to be on the registry - which will not involve any extra tests or samples. The information is kept under conditions of strict security and anonymous data is provided for researchers and health providers.

Dr Cheetham explains: "Thanks to the registry we now know that there are about 1500 patients living with [diabetes](#) in the North East under the age of 18. Over 80% of these patients have agreed to be on the register and we expect most of the remaining young people to agree as well.

"We've been struck by how enthusiastic the young people and their families have been to be part of it.

"Just three years ago we didn't even have this information and it's invaluable data for taking us forward – not only for ensuring that we have enough specialists and clinics in the right places but also for helping researchers track underlying patterns which may explain in greater detail why the condition develops in the first place."

More information: Muirhead, C. et al. How Do Childhood Diagnoses of Type 1 Diabetes Cluster in Time? *PLOS ONE*.

www.plosone.org/article/info

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Provided by Newcastle University

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