

Animal infection may trigger diabetes

1 May 2013, by Harriet Jarlett



Type 1 diabetes may be triggered by an infectious disease carried by animals, say scientists.

The researchers wanted to better understand previous research showing cases of [type 1 diabetes](#) peak in certain years.

The new study, published in *PLoS ONE*, found that not only did diabetes cases vary in frequency over a six year cycle, they also peaked in certain seasons.

The scientists suggest that this pattern of both short and long term cycles might be caused by an infection carried by animals, which triggers diabetes in those already genetically predisposed.

'What we knew from previous studies is that there are seasonal peaks of type 1 diabetes, which ties in with the idea of an [infectious agent](#). Although, it's difficult to be sure what that agent could be,' says Dr Colin Muirhead, of Newcastle University, who led the study.

A shorter, [seasonal variation](#) with more cases in winter could be because at certain times of the year an infection is more easily being passed between people, or from animals to a people.

While the trend for cases to peak during winter was noted, it wasn't seen every year. But instead of

weakening the argument, Muirhead thinks this strengthens it.

'Diseases don't occur at the same strength every year. Influenza shows us that, yes, you do get a seasonal peak, but it doesn't occur at the same time, or to the same extent, every year. Type 1 diabetes shows a very similar pattern.'

Muirhead and colleagues believe longer cycles suggest the infection may be carried by a [wild animal](#), such as a [rodent](#).

'The multiannual patterns tell us that there's something else going on. If it were a purely human phenomenon, we wouldn't expect to see such a pattern,' says Professor Mike Begon, from the University of Liverpool, who co-authored the study.

'It might not be a virus from an animal but what else in the environment has peaks every few years? Weather doesn't do that, [environmental factors](#) don't. It tends to be things like wildlife populations and their pathogens, but we don't know for certain.'

The team also found that more cases of type 1 diabetes occurred between the ages of five and 14, which suggests children under five who are exposed to the triggering infection might develop antibodies that protect against diabetes.

Diabetes is an autoimmune disease, which means it causes the body to react as it would to an infection. But, with an autoimmune disease the immune response is turned against the body itself.

The next stage is to identify what infections may be involved so more work can be done to prevent exposure and improve treatment.

More information: Muirhead, C. et al. (2013) How Do Childhood Diagnoses of Type 1 Diabetes Cluster in Time? *PLoS ONE* 8(4): e60489. [doi:10.1371/journal.pone.0060489](https://doi.org/10.1371/journal.pone.0060489)

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