Medical Xpress

Vallo Tillman: The hygiene hypothesis is not yet a theory

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A new study in Northern Europe is specifically designed to verify whether children need be in contact with pathogens in their early years to help them develop a strong immune system.

The so-called hygiene hypothesis claims young children need to get in contact with a number of relatively benign pathogens to develop a robust immune system. It could help explain both the rise of allergies in modern western society and the occurrence of auto-immune diseases, especially diabetes type 1. The Diabimmune study, funded by the EU, focuses on 4,500 children living at the border between the Russian region of Karelia, Estonia, and Finland. These three countries are at different stages of development, yet their population is genetically similar. Vallo Tillman, professor of paediatrics and head of the Children's Clinic of Tartu University in Estonia, talks to youris.com on how this study is attempting to confirm the hygiene hypothesis.

What exactly is the role of Estonia in the study?

Estonia serves as the 'country in the middle.' It is rapidly changing from a soviet-type society to a country, which is very much like a modern Western nation. And the situation from the perspective of hygiene is changing at the same time. Here, we can see allergies and possibly diabetes type 1 rising as the country gets 'cleaner.'

What are the challenges associated with the

organisation of such a study?

The biggest challenge is to find enough children. Estonia is a very small country. So we quickly found that just the Tartu region would never be enough. We therefore searched all over Estonia. In the end, we found 330 infants for our 'birth cohort', composed of infants of up to 3 months old, and 1,681 young children for the second control group, composed of children of between 3 and 5 years old. This is quite close actually to the official targets of 360 and 2,000, respectively. Our sample is also comparable to the numbers of the Finish arm of the study.

What are the pitfalls when it comes to interpreting the data?

We do have a few problems. The lack of test subjects in Russian Karelia is one of them. Our colleagues in Russia had the most difficult time because of the horrific bureaucracy which still exists down there. As a result, the end of the project has been postponed to February 2014. Even so, we may be forced to just compare Finland and Estonia on certain aspects of the study. And this is a problem in itself. Estonia is already very close to Finland, when it comes to the matter of hygiene. By now, the two countries are becoming too similar. We have seen it coming because we already noticed a steep rise in type 1 diabetes in Estonia.

The study is not over yet, but do preliminary results tend to confirm the hygiene hypothesis?

Yes they do, as far as allergies are concerned. But, in that respect, the hypothesis was already standing very firm. However, I dare not yet speculate about the conclusions concerning diabetes type 1. Unfortunately for us—and fortunately for them—not many patients have developed type 1 diabetes. If you ask me whether the hygiene hypothesis

can be changed into a proper theory, I would say it is coming closer. But we are not there yet. Meanwhile, by now, we have established a very nice cooperation between our three countries. I would be not at all surprised if, in the future, there are more projects like this one.

Provided by Youris.com

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