# In the news

## VIRAL TRIGGER FOR DIABETES?

Two recent studies have added weight to the long-standing hypothesis that viral infections can trigger autoimmune diseases such as type 1 diabetes in genetically susceptible individuals.

In a study published in *Diabetologica* (6 Mar 2009), Morgan and colleagues assayed for enteroviral capsid protein vp1 in the pancreas of patients with type 1 diabetes who had died within a year of developing the disease. The samples had been collected over the past 25 years by Alan Foulis of the Royal Infirmary in Glasgow, UK, who commented that "only very recently [have] techniques of sufficient sensitivity to detect the virus in such specimens been developed." (*EurekAlert!*, 5 Mar 2009). vp1 was detected in multiple islets of 44 out of the 72 patient samples, compared with 3 out of 50 control samples; this is probably a conservative estimate as the protein isn't completely stable, according to study author Adrian Bone (*New Scientist*, 5 Mar 2009). This is the first time that enterovirus infection of pancreatic β-cells has been linked with type 1 diabetes in such a large sample size.

A separate study published in *Science* (5 Mar 2009) has identified four rare variants of *IFIH1* that independently decrease the risk of type 1 diabetes. *IFIH1* encodes the cytoplasmic RNA sensor MDA5, which induces an interferon response to RNA viruses such as the enteroviruses. "Not only have we found a specific gene [for type 1 diabetes susceptibility] but the gene also has an intriguing function in dealing with virus infection." commented John Todd, lead author of the study (*Reuters*, 5 Mar 2009).

The link between enteroviruses and diabetes provides hope that vaccination could one day prevent the development of this life-threatening condition. According to Foulis, "the work I am doing is to try and prevent the process starting at all." (*Telegraph*, 5 Mar 2009). This will involve determining which enterovirus strains might be involved in the process.

*Kirsty Minton*



© 2009 Macmillan Publishers Limited. All rights reserved