

Pellino 3 protein may prevent development of obesity-driven diabetes

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Maynooth University scientists have identified a protein in the body that may have the potential to prevent the development of obesity-driven diabetes.

Diabetes is one of the world's fastest growing epidemics, with an estimated 225,000 people in Ireland alone suffering from the disease. Obesity is a key driver of Type 2 Diabetes, given that excess abdominal [fat](#) causes fat cells to release a 'pro-inflammatory' chemical which can make the body less sensitive to the insulin it produces and disrupt the ability of insulin-responsive cells to fulfill their function.

This is known as [insulin resistance](#), a major trigger of Type 2 Diabetes. The Maynooth University research team, led by Paul Moynagh, Professor of Immunology, has discovered a protein in the body called 'Pellino3' that may block obesity-driven inflammation and thus prevent insulin resistance and diabetes.

According to the research, there is a direct correlation between Pellino3 levels and abdominal fat tissue levels in individuals, with Pellino3 found to be extremely low amongst [obese individuals](#) and higher amongst lean individuals.

In the human abdominal adipose (fat) tissue of lean individuals, the amounts of Pellino3 are high, but in adipose tissue from obese individuals the levels of Pellino3 fall. The lower levels of Pellino3 are associated with the production of a critically important pro-inflammatory protein called IL-1 that drives inflammation and ultimately diabetes.

Explaining the new research Professor Moynagh said: "After nearly three years of research we have identified a new regulatory mechanism for controlling diet-induced diabetes by highlighting a critical role for 'Pellino3' in regulating inflammation."

"The identification of this new role for Pellino3 is an extremely exciting breakthrough and one that could have important implications for the fight against diseases such as Type 2 Diabetes," Prof Moynagh continued. "My hope is that we can now build on this research and attempt to understand how we may be able to control or manipulate the Pellino3 [protein](#) as a method of preventing [diabetes](#) disease amongst those at risk."

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