Link between obesity and diabetes discovered

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A Monash University study has proven a critical link between obesity and the onset of Type 2 diabetes, a discovery which could lead to the design of a drug to prevent the disease.

The findings were published today in respected journal Cell Metabolism.

The team, led by Associate Professor Matthew Watt, discovered that fat cells release a novel protein called PEDF (pigment epithelium-derived factor), which triggers a chain of events and interactions that lead to development of Type 2 diabetes.

"When PEDF is released into the bloodstream, it causes the muscle and liver to become desensitised to insulin. The pancreas then produces more insulin to counteract these negative effects, " Associate Professor Watt said.

This insulin release causes the pancreas to become overworked, eventually slowing or stopping insulin release from the pancreas, leading to Type 2 diabetes."

"It appears that the more fat tissue a person has the less sensitive they become to insulin. Therefore a greater amount of insulin is required to maintain the body's regulation of blood-glucose," Associate Professor Watt said.

"Our research was able to show that increasing PEDF not only causes Type 2 diabetes like complications but that blocking PEDF reverses

these effects. The body again returned to being insulin-sensitive and therefore did not need excess insulin to remain regulated."

Associate Professor Watt said identifying the link is a significant breakthrough in explaining the reasons why obesity triggers the onset of Type 2 Diabetes.

"Until now scientists knew there was a very clear pattern and had strong suspicions that a link existed between the two conditions, but our understanding of the chain of events that are caused by the release of PEDF shows a causal link," Associate Professor Watt said.

"Type 2 diabetes patients will benefit knowing the two conditions are linked. We already know that weight-loss generally improves the management of blood glucose levels in diabetes patients. Researchers can now move forward knowing this link exists and we can begin to design new drugs to improve the treatment of Type 2 diabetes," Associate Professor Watt said.

Source: Monash University (news : web)