

Epigenetic markers may indicate type 2 diabetes risk

By studying identical twins, researchers from Lund University in Sweden have identified mechanisms that could be behind the development of type 2 diabetes. This may explain cases where one identical twin develops type 2 diabetes while the other remains healthy.

The study involved 14 pairs of identical twins in Sweden and Denmark. One twin had type 2 diabetes and the other was healthy. Fat tissue can release hormones and regulate metabolism in different organs in the body. The question the researchers posed was whether epigenetic changes in the DNA lead to changes in the fat tissue that in turn can lead to the development of type 2 diabetes.

The researchers investigated DNA methylation at 480,000 points on the DNA and looked at how it affected the expression of the genes in the identical twins. They found that genes that are involved in inflammation were up-regulated and that genes involved in the fat and glucose metabolism were down-regulated in those who had diabetes.

“This means that they are not able to process fat as well, which leads to raised levels of fat in the blood and uptake of fat by other organs instead, such as the muscles, liver or pancreas. This causes insulin resistance, which leads to type 2 diabetes,” said Emma Nilsson, who carried out the study with Charlotte Ling.

Read full, original article: [Study Of Identical Twins Reveals Type 2 Diabetes Clues](#)