



PREVENTION | BIOMEDICAL RESEARCH

Project: Sex-specific mechanisms in the development of type 2 diabetes

Through donor support, Dr. Jennifer Thompson, Associate Professor at the Libin Institute in the Cumming School of Medicine at the University of Calgary, is bringing us one step closer to understanding how estrogen impacts a person's risk of developing type 2 diabetes.

In healthy individuals, blood sugars are controlled by a hormone called insulin, which lowers blood sugar levels. Insulin is produced in the pancreas by cells called beta cells. For people with type 2 diabetes, they can no longer produce or use enough insulin to control their blood sugars, which can lead to health complications such as nerve damage, sight loss, heart disease, kidney failure, anxiety, amputations, and even death. Type 2 diabetes is caused by several different risk factors, and accounts for 90% of diabetes cases in Canada.

Gaining weight can increase a person's risk of developing diabetes. Men are more likely to develop type 2 diabetes earlier in life than women, while women have an increased risk of type 2 diabetes as they get older. This is related to how and where fat cells develop in the body. For men, fat cells develop around their organs, which leads to a higher risk of diabetes; for women, fat cells develop beneath their skin. However, as women get older, where their fat cells develop changes as their estrogen levels decrease.

Dr. Jennifer Thompson is building our understanding of the impact of being a woman versus being a man on a person's risk of developing type 2 diabetes. She is exploring how estrogen influences where fat cells develop in women, and how it impacts a woman's risk of developing diabetes throughout her lifespan.

These findings can help us better understand how to reduce the risk of developing type 2 diabetes.