

Dr. Elizabeth Rideout



TREATMENT | BIOMEDICAL RESEARCH

Project: Testing if glucagon protects female beta cells

Thank you. Through donor support, Dr. Elizabeth Rideout, CIHR Sex and Gender Science Chair in Genetics and associate professor with the Faculty of Medicine at the University of British Columbia, is bringing us one step closer to better management of 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, blindness, 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. We know that whether an individual is male or female affects diabetes risk: adult men are 40% more likely to develop type 2 diabetes than women. We don't know why.

Dr. Rideout, through the support of Diabetes Canada, is increasing our understanding of why women are protected from diabetes more so than men. Her initial studies in humans and mice show that male and female beta cells are different – beta cells in women survive stress better than beta cells in men, and are better at making insulin in stressful conditions than men's beta cells. Dr. Rideout will determine whether a hormone called glucagon may be the reason women are better protected from type 2 diabetes, as glucagon levels are higher in females than males, and glucagon helps beta cells release insulin.

With more clues into whether glucagon helps support and protect female beta cells, scientists can develop better targeted treatments for type 2 diabetes and better manage diabetes in both women and men.

Thank you for your generosity. Diabetes Canada is grateful to our donors for supporting critical research that will improve the lives of people with diabetes.