

Dr. Bruce Verchere



CURE | BIOMEDICAL RESEARCH

Project: Fixing insulin production in type 1 diabetes

Thank you. Through donor support, Dr. Bruce Verchere, Director of the Centre for Molecular Medicine and Therapeutics, Childhood Diabetes Laboratories at BC Children's Hospital and Irving K Barber Chair in Diabetes Research, is bringing us one step closer to reversing type 1 diabetes.

In healthy individuals, blood sugars are controlled by a hormone called insulin, which lowers blood sugar levels. Insulin is produced by cells in the pancreas called beta cells. For people with type 1 diabetes, their beta cells can no longer produce 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.

Dr. Bruce Verchere and his lab are studying how beta cells work, in order to protect them and their ability to produce insulin. Beta cells first produce large proteins that are then "cut" down into insulin. For people with type 1 diabetes, this process doesn't work well, and as a result their blood is full of these larger proteins.

In Dr. Verchere's current research study, he aims to understand why this occurs, and to determine whether correcting this problem can prevent or reverse type 1 diabetes.

Dr. Verchere believes a key enzyme in beta cells in the pancreas of people with type 1 diabetes is deficient. He will test this by deleting, or knocking out this enzyme from beta cells in a mouse model of type 1 diabetes, and see whether this leads to diabetes. He hopes confirming the role of this enzyme can lead to new treatments to cure type 1 diabetes.

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.