DIABETES CANADA

OUR RESEARCHERS | DR. AHMAD HAIDAR

Thank you for your generosity. Diabetes Canada is grateful to our donors for supporting critical research that will end diabetes.

Through your support, Dr. Ahmad Haidar, associate professor of biomedical engineering at McGill University, is bringing us one step closer to developing an artificial pancreas for people with 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 have been destroyed. They 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. Unfortunately, it is very difficult to manage blood sugar levels – less than 20% of people with type 1 diabetes achieve healthy blood sugar targets.

Dr. Haidar and his lab are developing an artificial pancreas – a set of technologies that together help type 1 diabetes patients control their blood sugars. An artificial pancreas is an automated insulin delivery system made up of an insulin pump which delivers insulin; a sensor which measures real-time blood sugar levels; and an algorithm which calculates the right insulin amount required to maintain healthy blood sugars. Together, they help type 1 diabetes patients better manage their blood sugars. Dr. Haidar is constantly improving this system, to help end the burden of blood sugar level control for type 1 diabetes patients.

In 2022-23, Diabetes Canada is supporting Dr. Haidar's new research study, which is testing the impact of adding a drug called empagliflozin to an automated insulin delivery system. Empagliflozin removes sugar via urine, without increasing the risk of low blood sugar levels, which can be dangerous. The study's goal is to improve the blood sugar levels of people with type 1 diabetes who cannot otherwise achieve healthy blood sugar levels, by adding another therapy to improve the effectiveness of the artificial pancreas system.

Thank you for giving hope for a healthier future to people with type 1 diabetes.