

Dr. Douglas Zochodne



COMPLICATIONS | BIOMEDICAL RESEARCH

Project: Restoring skin sensation in diabetes by regrowing nerves

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

Through your support, Dr. Douglas Zochodne, neuroscientist and neurologist and Director of the Neuroscience and Mental Health Institute at the University of Alberta, is bringing us one step closer to preventing serious complications, infections, and amputations for people with diabetes.

People living with diabetes risk developing diabetic polyneuropathy (DPN), a complication where they lose feeling in their skin, beginning in their feet. In DPN, the nerve endings, or axons, that supply sensation disappear and are unable to grow back. This results in loss of sensation, numbness, pain, loss of balance, and the inability to recognize injuries. People with DPN have a higher risk of developing skin wounds or ulcers, which can lead to slow healing and amputation.

Dr. Zochodne is testing a new treatment to help regrow nerves in the skin.

Axon growth cones are located at the tips of nerve endings and help nerves grow into skin. Dr. Zochodne's lab is working on a new molecular approach to activate axon growth cones, using a cone growth molecule called Rac1. Rac1 has a remarkable ability to regenerate and repair nerves. The team will determine how to best activate the nerve growth cones, and whether Rac1 can be used with other treatments to improve nerve repair.

This project could lead to a new treatment to manage diabetic polyneuropathy, reducing the need for limb amputation and preventing serious complications for people living with diabetes.