



## COMPLICATIONS | BIOMEDICAL RESEARCH

**Project: Correcting metabolic imbalance to treat heart disease during obesity and diabetes**

**Through donor support, Dr. Thomas Pulinilkunnil, Professor with the Department of Biochemistry and Molecular Biology at Dalhousie University, is working to prevent heart disease in people living with diabetes.**

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 heart disease, kidney failure, and even death. For people with diabetes and obesity, their risk for developing heart disease is even higher. We currently don't know exactly why.

Dr. Pulinilkunnil is determining whether a protein called TFEB may help maintain heart health. TFEB works by clearing heart cells of cellular "garbage." In people with type 2 diabetes and obesity, TFEB stops working in the heart, resulting in heart stress, damage, and cellular death.

He is testing if:

- A decline in the TFEB protein changes the heart's ability to burn fuel
- A decline in the TFEB protein prevents the heart from beating rhythmically
- Improving TFEB function helps heart health

**This research will help develop new therapies to prevent damage and improve heart function in people with obesity and diabetes.**