

Genetic factors promoting metabolic diseases including obesity and type 2 diabetes

Canada is currently facing epidemics of obesity and diabetes. Dr. Clee's research focuses on the discovery of genetic factors promoting metabolic diseases including obesity and type 2 diabetes. It is expected that the discovery of these genes will give us new clues about why some individuals are more predisposed to developing these diseases, what causes them, and how we might be able to better treat them. For her studies, Dr. Clee uses mouse models. Currently, one line of investigation is providing new clues about the development of obesity and regulation of food intake. Insight from this work may lead to new ways to modulate appetite and teach us about how stress affects food intake ("comfort eating"). In another study Dr. Clee is working to discover new factors that affect how much insulin is released into the blood following a meal. Insulin is an important hormone that helps us store nutrients after a meal. When insulin is insufficient diabetes results, but in excess it can promote obesity and other complications. Many drugs to treat diabetes chronically raise insulin levels. This work will help us find ways to raise insulin only when it is needed after a meal. In perhaps her most exciting work, she has found a type of mouse that can eat a high fat diet worse than today's human diets (similar to eating only double bacon cheeseburgers) but doesn't gain any weight or develop any metabolic complications. Her upcoming studies will work to find the genetic factors that protect these mice.



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