Grade 11

Brain and Alzheimer's disease

Students will learn how research scientists attempt to understand Alzheimer's disease at the cell, tissue, and organ level.

Activity: Students will explore Alzheimer's disease from cell to system. They will participate in a brain cell demonstration and a hippocampus isolation from sheep's brain.

Time required
Half day (2.5h)

Grade 11 students are learning detailed physiology of the human body but our understanding of the brain and nervous system are relatively limited. Diseases affecting the brain and memory are difficult to detect at early stages and are subsequently very difficult to treat. Students will learn how basic medical scientists use animal and cell models, and molecular biology to better understand the mechanisms behind this life altering disease affecting many Canadians.

Specific learning outcomes addressed: B11-5-06; B11-5-07; B11-5-11

Time Required	Student Experience
30 min	Introduction to the Research Centre and research interests, review general functions of major brain regions
5 min	Break for washrooms
30 min	Discuss the use of cells in medical research, introduction to cell culture and demonstration using a neuron model to illustrate nerve cell structure, action potential, neurotransmitter function and pathophysiology of Alzheimer's disease.
1 hr	Participate in a sheep brain dissection with attention to major structures, Alzheimer's disease and isolation of hippocampus
15min	Questions, wrap-up, and clean up