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.

BIOlab Experiences Students will learn how Alzheimer's disease presents in people and learn some of the difficulties in diagnosing and treating it. They can participate in a hippocampus isolation.

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		What students will experience in the BIOlab
B11-5-06	Identify the functional regions of the brain.	Students review general functions of cerebellum, cerebrum, mid-brain and brain stem as well as specific function of hippocampus
B11-5-07	Explain how a nerve impulse travels a particular pathway using chemical and electrical signals	Through use of a physical neuron model nerve impulses are demonstrated including neurotransmitter release to adjacent dendrites
B11-5-11	Investigate and describe conditions/disorders that affect protection and/or control in the human body.	Alzheimer's disease is discussed in detail from symptoms and diagnosis in people to animal models and molecular changes in and around nerve cells affecting activity. Throughout activities students compare healthy and disease states