# Establishment of a primate model that exhibits Alzheimer’s-like features to explore new preventative and therapeutic strategies.

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Canada

**Title of project or programme**

Establishment of a primate model that exhibits Alzheimer's-like features to explore new preventative and therapeutic strategies.

**Source of funding information**

CIHR

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€ 435,393

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01/04/2014

**Total duration of award in years**

5

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**Research Abstract**

As we age there is a buildup in the brain of molecules called amyloid-beta oligomers (ABOs), which is acute during the development of Alzheimer’s Disease (AD). The pursuit of new disease-modifying therapeutics for AD and other dementias is the object of intense investigation. A major impediment, however, lies in the difficulty of translating therapies that work in animals (usually rodents) to the specific human disease condition. Thus, the main goal of this proposal is

to investigate how injection of ABOs in the non-human primate (NHP) brain leads to brain pathology and changes in behaviour and cognition, and if so, how therapeutics can prevent or reverse those changes. We injected ABOs into the lateral ventricles of adult macaque monkeys and found that this can trigger a pathology in neurons that mimics several attributes of AD. The second main goal of this proposal is to explore an intriguing link between AD, diabetes and insulin signaling. The initial connection between AD and diabetes first came from evidence that Type 2 diabetics have a higher risk of developing AD, and that this may be related to the reduced levels of brain insulin. The brain response to insulin also declines with normal aging, and this may explain the increased risk of AD in the elderly. Therefore, bolstering the insulin response, either by increasing circulating insulin or by enhancing the function of insulin receptors may provide protection against the effects of AD. Thus, the primary goal of this grant is to first establish the impact of ABOs in the NHP brain and determine if they trigger pathological features that resemble the hallmarks of AD. Secondly, we will examine therapeutic strategies to treat the brain-specific form of diabetes that develops in AD. The expected outcome of the proposed studies is the identification of a strategy that could ultimately have profound effects by slowing AD progression and interrupting the onset of AD.

**Further information available at:**

**Types:**
Investments < €500k

**Member States:**
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**Diseases:**
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**Years:**
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