

**“Use spatial memory to reduce risks of dementia”
Says Véronique Bohbot, neuroscientist at the Douglas Institute**

Montréal, Tuesday January 4, 2011 – Véronique Bohbot, PhD., neuroscientist at the Douglas Mental Health University Institute and associate professor at McGill University, leads studies on navigational strategies. She presented her findings at the recent meeting of the Society for Neuroscience in San Diego, which could bring light into how we can make better use of our hippocampus in order to reduce the risk of dementia.

Why it is better to use a spatial strategy - Summary of findings

In her lab, Bohbot and her team used virtual navigation to conduct a series of studies. It was shown that, in healthy older adults:

- 1) Participants using spatial strategies had reduced risk of dementia as assessed with the MoCA© (*The Montreal Cognitive Assessment*) is a cognitive screening test designed to assist Health Professionals for detection of mild cognitive impairment)
- 2) Spatial strategies significantly correlated with grey matter in the hippocampus.
- 3) Only the people who used spatial strategies showed significant fMRI activity in the hippocampus during a virtual navigation task that allowed for both spatial and response strategies.

Two strategies used by our brain

When we find our way in the world, we rely on one of two strategies. One is **spatial strategy**, in which we build cognitive maps using relationships between landmarks to help us determine where we are but also help us plan where we want to go (*for instance, you will memorize the spatial relationship between the market, home and school such that you can take shortcuts when going to novel destinations*). The other one is a **stimulus-response strategy**, which is kind of an auto-pilot mode (*after some repetition, you make a series of right and left turns out of habit like going to work every day using the same route. Sometimes you get there out of habit without knowing what you saw on the way*). When you use a GPS, you don't necessarily use your spatial memory.

Significant results

"These results are in agreement with the literature showing that the first symptoms of Alzheimer's disease involve problems with spatial orientation as well as the literature that shows that decreased volume in the hippocampus is a risk factor for conversion from mild cognitive impairment to Alzheimer's disease." adds Bohbot.

For all interview requests please contact:

Marie France Coutu

Communication and public affairs

Tel.: (514) 761-6131, ext 2769, Cell.: (514) 835-3236

marie-france.coutu@douglas.mcgill.ca