

Understanding memory changes and brain plasticity in mild cognitive impairment

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Principal Investigators

Belleville, Sylvie N

Institution

Institut universitaire de gériatrie de Montréal

Contact information of lead PI

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5

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Research Abstract

Older persons with mild cognitive impairment do not meet the diagnostic criteria for Alzheimer's disease but many of them actually have a very mild phase of the disease. Understanding what happens in the brain of these persons is fundamental for better understanding the brain and cognitive mechanisms that are taking place at a very early stage of the disease development. In our previous studies, we used functional magnetic resonance imaging, a technique that allows visualizing the brain when people memorize words or attend to complex tasks. We found that there is more activation in some parts of these person's brains when compared to older adults with no cognitive deficit. We want to better understand this phenomenon. It may indeed reflect

brain attempts to counteract the effect of the disease. We will use brain imaging to assess the brain changes as people progress in the disease. We want to know which brain areas change their level of activation as the disease progresses and the conditions associated with increased brain activation. We will assess if these changes help persons to better perform in memory tasks. Finally, we will offer cognitive training programs to some of these individuals to shed light on the brain mechanisms that support training-related improvement. Overall, this new set of studies will shed light on important phenomena and might provide new and innovative avenues in the characterization and treatment of very early MCI.

Further information available at:

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Investments < €500k

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