

**Title of Study:** Comparing brain reserve capacity in Alzheimer's disease musicians and non-musicians

**Location:**

Ontario

**Study Description:**

Aim of the study: Maintaining an active mind, such as engaging in music, is crucial to reduce the risk of developing Alzheimer's disease (AD). We will use neuroimaging to compare the brains of musicians and non-musicians with early cognitive changes to determine whether lifelong musicianship can be protective against AD and whether daily music listening can improve cognition in those with mild cognitive impairment or AD.

How information gathered will be used: We hope that our findings can lead to the development of new, inexpensive, enjoyable, safe and reliable therapeutic interventions involving music that would enhance brain networks, leading to improved treatment outcomes. Ultimately, our findings may give evidence that music, in active playing and passive listening form, has the ability to enhance cognitive reserve in persons with AD.

**What will happen during the study?**

Role of participant: Participants will be required to come to St. Michael's Hospital for two sessions. Each session will be approximately 3 hours and will involve a 45 minute MRI scan and cognitive testing. The two sessions will be 3 weeks apart, once before and once after a three week music listening intervention where the participant will be asked to listen to familiar music for a minimum of 60 minutes daily.

**Eligibility: Who Can Participate?**

Inclusion criteria:

- Relatively proficient in English
- Between the ages of 65-90
- MRI compatible
- Have been diagnosed with MCI or AD, or have concerns about their memory (MMSE of  $\geq 16$ )

Exclusion criteria:

- Cannot understand English
- MRI incompatible
- Significant comorbid neurological (stroke, epilepsy, Parkinson's) or psychiatric (bipolar, substance abuse) history or form of dementia other than AD

**Recruitment Start Date:** 2016/12/01

**Recruitment End Date:** 2017/08/26

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