

### **Applicant**

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### **Project Title**

24-hour activity cycle (physical activity, sedentarism, and sleep) and its association with depression, psychological distress, and cognitive performance of the Canadian older adult population.

### **Project Summary**

Mental health is fundamental for healthy aging. In later life, the onset of mental disorders like cognitive impairment, depression and psychological distress can be prevented through modification of lifestyle factors like physical activity, sedentary behavior and sleep. These three activities are commonly studied independently, while they are communicating vessels that cannot be seen separately from each other. This project examines the distribution of time spent in each activity across the day, such as how the increase in one changes the others and which changes in activities during a day cycle may reduce the risk of cognitive impairment, depression and psychological distress. These results will be useful for further mental health intervention studies, and relevant for national and international guidelines on physical and sedentary activity.

### **Keywords**

mental health, time use activities, sedentarism, compositional data analysis, isothermal substitution analysis