

Strategic Research Initiatives

Cognitive Health

To delay the onset and alter the rate of cognitive decline and improve the lives of people with cognitive disorders

Lifelong Health

To optimize the health and well-being of individuals and families across the life course

Vulnerability and Frailty

To delay functional loss, improve autonomy and independence, and enhance quality of life, until the end of life

Longitudinal Studies and Interventions

1) To lead international collaborative analysis of longitudinal studies of cognitive aging and dementia. 2) To develop a prospective cohort study to improve the accuracy of detecting cognitive change and risk for dementia. 3) To advance prevention and treatment options for individuals with subjective cognitive decline and cognitive impairment.

To engage in innovative and population-relevant health behaviour research to improve health outcomes and promote physical, mental, and social well-being.

To address the social, environmental, economic, and cultural factors related to healthy and age-friendly communities.

To improve predictive models to identify individuals at risk for transitions into higher levels of care.

To meet the needs of vulnerable populations (e.g., persons living with dementia, end of life, caregivers) in the achievement and promotion of quality of life.

Care and Technological Innovations

To develop and validate light-touch, low cost mobile assessment tools for accurate and early detection of subtle cognitive decline. To develop protocol for transactional data flow (e.g., risk factors, cognitive assessment) with health care providers. To develop methods for designing, testing and deploying mobile, home-based technologies and assistive technologies. In partnership with CanAssist, to identify and address challenges for individuals with cognitive decline and impairment.

To integrate physical activity monitoring into mobile health and cognitive assessment apps for use in research and health care settings.

To develop long-term usability and usage tracking and analysis (of apps, patient information systems and other innovations) over time and over distributed settings.

To advance development and evaluation of assistive technology, in partnership with CanAssist, to support independence and autonomy at home.

To improve health services for those at end of life and for vulnerable populations.

To provide continual feedback and refinement from end-user studies to improve design and impact of technologies to support independent living.

Data Analytics

To advance neuroscience tools and designs to improve sensitivity and specificity to detect subtle cognitive change. To support and advance methods for reproducible and replicable research in cognitive health and dementia. To advance precision cognitive health research and quantify individual risk.

To develop real-time analytics to provide individualized feedback regarding impact of lifestyle change on health, cognitive, and well-being outcomes.

To support research using integrative and big data analytics to improve individual and population health outcomes.

To advance data analytics for detecting change and quantifying individual risk for acute events with home-based monitoring.

To build learning analytic systems in health care for improving clinical decision support, care coordination, and patient outcomes.