

# Improving the wellbeing of older adults through community-based music and movement programs

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## Find out here about a geriatric psychiatry program at the Music and Mental Health Research Clinic that improves the wellbeing of older adults

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How do music and movement affect the mental wellbeing of older adults? The Music and Mental Health Research Clinic at the University of Ottawa Institute of Mental Health Research at the Royal will explore this question with a new geriatric psychiatry program that aims to design and carry on community-based music and movement (COMM) interventions with older adults (55+).

The program will examine the benefits of these interventions on the psycho-social conditions of older adults with dementia or experiencing mental illness, including, among others, depression and anxiety. The learnings will support the integration of evidence-informed music interventions into older adults' social and healthcare.

A program of this kind – combining research evidence, practice wisdom and expertise from people's lived experience – requires engagement from researchers, clinicians, music educators, health and social workers, individuals with lived experience, and other end-users like family and patients' associations.

### Context

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**Aging population:** The global population is aging rapidly, with those aged 60 years or older expected to reach 22% by 2050.<sup>1</sup> In Canada, adults over 65 will comprise 23% of the population by 2030.<sup>2</sup> This group will live longer but with greater risk of facing mental health challenges. Estimates suggest that 40% of older adults face mental health challenges like depression and anxiety, and this increases to 80-90% among those in nursing homes.<sup>3-5</sup> These conditions highlight the need for illness prevention and wellbeing promotion in public health policy for the elderly.<sup>6-7</sup>

**Music and movement:** Our program utilizes the Dalcroze method, a music education approach established more than 125 years ago focusing on music and body movements.<sup>8</sup> Central to this method are free and improvised movements, combined with structured rhythmic sequences. It emphasizes multi-tasking and sensorimotor integration.<sup>9</sup>

Advantages of this approach include:

1. Enhanced motivation from group participation, leading to sustained engagement
2. Accessibility to all, regardless of musical background.
3. Availability of trained music educators to lead such groups.

4. Lower maintenance costs compared to one-on-one therapy.
5. Use of naturalistic, real-life program settings.
6. Application of internationally recognized music methods.

The Dalcroze method, a community-based music program, has been effectively applied to various groups,<sup>10-11</sup> offering flexibility for individuals with diverse health issues in multiple environments.<sup>12-17</sup>

## Research program

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Theoretical approach: Our approach is based on three neurophysiological pillars that help us understand how music and movement can affect the mind and improve health and wellbeing:

1. Music is inherently pleasurable:

Recent research demonstrates how music is linked to the brain's reward circuits releasing dopamine, a neurotransmitter associated with pleasure.<sup>18</sup>

This understanding reveals how music can evoke powerful pleasure surges comparable to those caused by drugs but without negative side effects.<sup>19</sup>

Feeling good from music is increasingly recognized as vital for wellbeing and akin to natural medicine.<sup>19</sup>

2. Auditory-motor link:

The interconnection and shared qualities between the auditory and motor systems are well identified in neuropsychology:<sup>20</sup> 1) Moving to the music is irrepressible and spontaneous (nodding the head, beating time with the foot, clapping the hands).<sup>19</sup> This link between music and movement exists as soon as it enters the sensory system<sup>21</sup>, and even in the absence of movement, listening to a rhythm engages the motor cortex.<sup>22-23</sup> 2) Moving to the rhythm of music activates the reward brain network<sup>18</sup>, brings positive emotions,<sup>24</sup> and contributes to concrete sensorimotor patterns that shape our cognition.<sup>25</sup>

3. Social bonding:

Music connects us and promotes pro-social behaviours. Synchronization to music can enhance interpersonal coordination, and thus can improve social functioning.<sup>26</sup> Fixed pitch, regular beat, and repetition all promote social cohesion.<sup>27</sup> Making music with others produces beta-endorphins that have been found to relate to social bonding.<sup>28</sup> There is evidence of a tendency for people to feel socially closer to strangers after singing together compared to when they have undertaken other group activities.<sup>29</sup>

- **Experimental design:**  
Using a mixed research design, we combine a single-case experimental design (SCED) with a complementary cohort observational approach. SCEDs are suitable for high-quality research in heterogeneous populations, where randomized clinical trials may not be feasible. Recognized as Level 1 evidence by the Oxford Centre for Evidence- Based Medicine, SCEDs are particularly relevant for our diverse participant groups. They emphasize the significance of individual change over time, linking interventions to outcome measures, rather than statistical comparisons between groups.<sup>30</sup>
- **Data collection:**  
Our assessments monitor the evolution of various parameters reflecting the interdisciplinary nature of the study (e.g., reduction of anxiety and depression; improvement of processing speed and working memory; improvement of physical mobility and stability; reduction of loneliness and improvement of social inclusion) and identify which aspects significantly improve with interventions.

Quantitative data is collected using reliable, validated questionnaires through a digital platform accessible to all participants<sup>31</sup> Qualitative data provides insights into participants' experiences, capturing nuanced impacts of music and movement on mental wellbeing. A subset of participants uses Fitbit Alta HR to record bio-physiological markers, correlating music-evoked mood changes with autonomic and hormonal parameters.

## **Impact and progress indicators**

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**Social and health:** We anticipate COMM will enhance health and wellbeing by reducing mental distress, depression, and anxiety, and fostering social inclusion in older adults. Our program seeks to provide equal opportunities for COMM, increase access to music-making for older adults, reduce the need for medical interventions, and enhance life experiences with more enjoyable and meaningful self-expression options. Social impacts will be gauged through the engagement of partner organizations and end-users, feedback on the benefits of the music interventions, and improvements in wellbeing among participants.

**Economic:** The program intends to strengthen community support for older adults, contribute to diversifying public health services with low-cost, non-invasive interventions, and diminish triggers for long-term care admissions. It aims to develop strategies for integrating COMM in health and social settings, resulting in reduced public care costs through reduced medical consultations and paving the way for insurance coverage of music interventions.

**Scientific:** This program unites musical institutions and research labs worldwide, leading to the first international consortium of COMM. It will establish an international database and lead to novel scientific insights on the impact of music-movement interventions on

older adults' mental health. It will also establish new collaborative networks and disseminate research results to health and social professionals, policymakers, and the public.

The program will position Canada and the Institute of Mental Health Research at The Royal as leaders in this significant social innovation, promoting wellbeing and healing through the music movement.

[CLICK HERE for references](#)

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## **More About Stakeholder**

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### The Royal Ottawa Health Care Group: Promoting mental health and wellbeing

The Royal Ottawa Health Care Group (The Royal) is one of Canada's foremost mental health care, teaching, and research hospitals. Our mission is to transform the lives of people living with complex and treatment-resistant mental health and substance use needs through client and family-centred care and research.