A Dementia STRATEGY FOR CANADA

Together We Achieve

2024 ANNUAL REPORT

June 2024

Public Health Agency of Canada
Agence de la santé publique du Canada

Canada

TO PROMOTE AND PROTECT THE HEALTH OF CANADIANS THROUGH LEADERSHIP, PARTNERSHIP, INNOVATION AND ACTION IN PUBLIC HEALTH.
—Public Health Agency of Canada

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To obtain additional information, please contact:

Public Health Agency of Canada
Address Locator 0900C2
Ottawa, ON K1A 0K9
Tel.: 613-957-2991
Toll free: 1-866-225-0709
Fax: 613-941-5366
TTY: 1-800-465-7735
E-mail: **publications-publications@hc-sc.gc.ca**

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The Honourable Mark Holland, P.C., M.P.
Minister of Health

Minister's message

This year's report marks five years since the release of the national dementia strategy and the funding investments to support implementation that resulted in the Dementia Strategic Fund and the Enhanced Dementia Surveillance Initiative at the Public Health Agency of Canada (PHAC). Other federal organizations are providing funding aligned with the strategy including for research and the health care system along with other targeted initiatives. The initiatives of non-governmental organizations along with provincial and territorial governments also contribute to continued progress on the strategy's implementation. Efforts across Canada are highlighted in this report as we review our progress in working together towards the aspirations of the strategy.

Dementia continues to impact many of those living in Canada either directly or through their families and other social circles. Recent public opinion research found that 49% of respondents feel that dementia is having a large impact in Canada. In 2021–2022, 6.3% of Canadians aged 65 and older were living with diagnosed dementia. Further, the number of people living with dementia is expected to increase with Canada's growing and aging population.

While the risk of dementia increases as we age, particularly among the oldest adults, it is important to remember that dementia is not an inevitable part of aging. In fact, the rate of newly diagnosed cases

among Canadians aged 65 and over continues to decline from 1,545 new cases per 100,000 in 2011–2012 to 1,398 new cases per 100,000 in 2021–2022, taking into account the aging of the population over time. Research has indicated that 12 modifiable risk factors could explain 40% of dementia cases globally and recent studies suggest the same is true within Canada, as you will see within this year's report.

Given the evidence on dementia risk factors, it is a priority for the Government of Canada to continue to work with partners to share this information and encourage action to reduce risk. Rates for risk factors related to education, hypertension and smoking are moving in the right direction in Canada, as this report notes. However, there is more work to be done to reduce risk, as rates related to cholesterol, sleep, heavy alcohol drinking and stroke have remained stable, while rates of diabetes, obesity, physical inactivity and social isolation are increasing.

Since 2018, PHAC has funded more than 70 dementia projects across the country; a few are highlighted in this report. These projects aim to: increase awareness of dementia risk factors; promote dementia-inclusive communities including through stigma reduction; improve access to high-quality dementia guidance and online resources; improve the quality of life of people living with dementia and caregivers; and strengthen data on dementia. Together, these projects reached millions of Canadians this past year, creating innovative and tailored resources that help to reduce dementia risk and encourage communities to become more dementia-inclusive.

The 2024 report also highlights projects funded by other organizations that, for example, work to improve data on dementia caregivers, increase the social inclusion of people living with dementia, and help to manage the risks of people living with dementia going missing.

Research and innovation continues to be an essential pillar of Canada's national dementia strategy. Under the Canadian Institutes of Health Research's **Brain Health and Cognitive Impairment in Aging (BHCIA) Research Initiative**, 13 new funding opportunities have been launched. In addition, the Government of Canada is providing $80 million over four years starting in 2024 to the Brain Canada Foundation to advance brain research.

All of our investments in implementing the national dementia strategy take us one step closer to our vision of a Canada in which all people living with dementia and caregivers are valued and supported, quality of life is optimized, and dementia is prevented, well-understood and effectively treated. In closing, thank you once again to all those contributing to progress on the strategy.

Introduction

The 2024 Report to Parliament on the **national dementia strategy** continues to track key data points related to the strategy's objectives (see Figure 1 for an overview of the strategy). It notes some positive trends related to some dementia risk factors and efforts related to advancing therapies through research and innovation. It also flags areas where more work is needed in particular, including on reducing the rates of dementia risk factors such as diabetes, obesity, physical inactivity and social isolation.

This year's report highlights new results from projects funded through the Dementia Community Investment, the Dementia Strategic Fund and the Enhanced Dementia Surveillance Initiative at the Public Health Agency of Canada.[1] The report also shares information about projects funded through other federal government departments such as the Canadian Institutes of Health Research, Employment and Social Development Canada, Health Canada, and Indigenous Services Canada as well as projects led by non-governmental organizations. These projects demonstrate the collective action taking place across Canada to help advance the objectives of the national dementia strategy.

> "Every person's experience with dementia is different. The social isolation experienced by many who live with dementia and by dementia caregivers can be detrimental to their physical and mental health. We can improve the inclusiveness of our communities by learning how to better interact with people living with dementia and by challenging our own assumptions about their abilities and potential for a good quality of life."
>
> **Theresa Tam, Chief Public Health Officer of Canada**

FIGURE 1: Overview of Canada's dementia strategy

A DEMENTIA STRATEGY FOR CANADA

Together We Aspire

Vision

A Canada in which all people living with dementia and caregivers are valued and supported, quality of life is optimized, and dementia is prevented, well understood, and effectively treated.

Principles

- Quality of life
- Diversity
- Human rights
- Evidence-informed
- Results-focused

National Objectives	Areas of Focus
Prevent dementia	1. Advance research to identify and assess modifiable risk and protective factors 2. Build the evidence base to inform and promote the adoption of effective interventions 3. Expand awareness of modifiable risk and protective factors and effective interventions 4. Support measures that increase the contribution of social and built environments to healthy living and adoption of healthy living behaviours
Advance therapies and find a cure	1. Establish and review strategic dementia research priorities for Canada 2. Increase dementia research 3. Develop innovative and effective therapeutic approaches 4. Engage people living with dementia and caregivers in the development of therapies 5. Increase adoption of research findings that support the strategy, including in clinical practice and through community supports
Improve the quality of life of people living with dementia and caregivers	1. Eliminate stigma and promote measures that create supportive and safe dementia-inclusive communities 2. Promote and enable early diagnosis to support planning and action that maximizes quality of life 3. Address the importance of access to quality care, from diagnosis through end of life 4. Build the capacity of care providers, including through improved access to and adoption of evidence-based and culturally appropriate guidelines for standards of care 5. Improve support for family/friend caregivers, including through access to resources and supports

Pillars

Collaboration • Research and innovation • Surveillance and data • Information resources • Skilled workforce

Stigma can result from uninformed beliefs about dementia and incorrect assumptions about the

capabilities of people living with dementia. It can be a barrier that removes opportunities for those living with dementia to participate in their communities, limits access to services and support, and reduces their quality of life. Stigma reduction is a key factor in enabling dementia-inclusive communities. The report shares notable results of public opinion research in 2023 on dementia-inclusive communities and stigma. It suggests that there is still more training and education needed to improve knowledge of how to positively interact with people living with dementia to help reduce stigma and make communities more inclusive.

This annual report shares information that was current as of June 2024.

Dementia is a term used to describe symptoms affecting brain function. It may be characterized by a decline in cognitive (thinking) abilities such as memory, planning, judgement, basic math skills, and awareness of person, place and time. Dementia can also affect language, mood and behaviour, and the ability to maintain activities of daily living. Dementia is not an inevitable part of aging.

Dementia is a chronic and progressive condition that may be caused by neurodegenerative diseases (affecting nerve cells in the brain), vascular diseases (affecting blood vessels like arteries and veins) or injuries. Types of dementia include vascular, Lewy body, frontotemporal, Alzheimer's disease and mixed (a combination of more than one type). In rare instances, dementia may be linked to infectious diseases, including Creutzfeldt-Jakob disease.

Tracking the state of dementia in Canada

Annual tracking of dementia data points helps gauge progress on the national dementia strategy's three national objectives to prevent dementia, advance therapies and find a cure, and improve the quality of life of people living with dementia and caregivers.[2] This year's data points show improvement in some trends related to all three objectives, while others have remained stable or worsened.

Objective: Prevent dementia

Data suggests the rate of newly diagnosed cases in Canada continues to decline and the level of some risk factors is also dropping. There was a decrease from **1,545 new cases** in 2011–2012 to **1,398 new cases** in 2021–2022 (per 100,000 Canadians aged 65 and older, age-standardized).[3,4] To support a decline in new cases, efforts should continue to reduce key risk factors[5] associated with developing dementia among Canadians.

The most recent data show a trend for some of these risk factors in the right direction with fewer Canadians with lower levels of education, smoking and being diagnosed with hypertension, while other risk factors (high-cholesterol, insufficient sleep, heavy alcohol drinking and experiencing a stroke) are relatively stable. The data also show an increase in diabetes, obesity, physical inactivity and social isolation, suggesting priorities for future efforts. See Table 1 for the list of potentially modifiable risk factors from the 2020 report of the Lancet Commission and **Appendix C** for further details on the level of risk factors in Canada, including a breakdown across provinces and territories.

TABLE 1: Increased risk associated with 12 potentially modifiable risk factors based on the 2020 report of the Lancet Commission

Risk factor	Relative increased risk of developing dementia compared to someone without this risk factor
Early life (under 45 years old)	
Lower levels of education	60%
Midlife (45 to 65 years old)	
Hearing loss	90%
Traumatic brain injury	80%
Hypertension	60%
Obesity	60%
Alcohol use (over 21 units per week)	20%
Later life (over 65 years of age)	
Depression	90%
Smoking	60%
Social isolation	60%
Diabetes	50%
Physical inactivity	40%
Air pollution	10%

Risk factors in Canada

Recent studies from the **University of Western Ontario** (UWO) and **McMaster University** have used data from the **Canadian Longitudinal Study on Aging** (CLSA)[6] to estimate the proportion of dementia cases that could be avoided in Canada by completely preventing a specific risk factor (a measure known as population attributable fraction – PAF), in either a specific life stage (UWO study) or among the population 45 and above (McMaster University study).[7] The risk factors examined in both studies are shown in Table 2.

TABLE 2: Population attributable fraction (PAF)[8] estimates by risk factor in different life stages

Life stage	Risk factor[9]	UWO PAF (%)	95% Confidence Interval[10] (%)	McMaster University PAF (%)	95% Confidence Interval (%)
Early life	Less education	3.2	(1.9–4.3)	4.3	(2.0–6.9)
Midlife	Hearing loss	6.5	(3.7–9.3)	3.3	(1.5–5.6)
	Traumatic brain injury	4.4	(3.3–5.4)	4.8	(3.3–6.5)
	Hypertension	6.2	(2.7–9.3)	6.0	(1.8–10.4)
	Excessive alcohol consumption	0.9	(0.5–1.1)	0.4	(0.1–0.6)
	Obesity	6.4	(4.1–7.7)	5.6	(3.4–8.0)
Later life	Diabetes	2.5	(2.4–3.3)	3.5	(2.2–4.9)
	Social isolation	0.4	(0.2–0.5)	4.7	(2.8–6.8)
	Depression	4.0	(3.2–4.8)	7.7	(5.0–10.7)
	Physical inactivity	10.2	(6.8–13.0)	11.6	(5.4–17.1)
	Smoking	1.5	(0.6–2.4)	2.1	(0.6–4.0)
	Sleep disturbance	3.0	(1.8–3.8)	N/A	N/A
	Air pollution	N/A	N/A	0.8	(0.6–1.0)
Total	All factors	49.2	(31.2–65.1)	43.4	(37.3–49.0)

The UWO study identified physical inactivity, hearing loss, and obesity as the top three risk factors contributing to dementia cases in their selected Canadian sample, while McMaster University's study identified physical inactivity, depression, and hypertension. UWO estimated that about half (49.2%) of dementia cases across Canada could be prevented or delayed by eliminating all 12 modifiable risk factors examined, while McMaster University calculated slightly under a half (43.3%). These results are similar to those of the **2020 report of the Lancet Commission on dementia**. These findings shed light on risk factors to prioritize in Canada while confirming the importance of ongoing risk reduction efforts.

Health equity and risk factors in Canada

While a similar proportion of dementia cases can be prevented among both females and males according to the UWO study, certain risk factors were more common in one sex than the other. Hearing loss and excessive alcohol use were higher in males while physical inactivity and depression were more common in females. This suggests there would be benefits in tailoring interventions by sex.

TABLE 3: The five risk factors with the greatest difference in prevalence between high- and low-income groups

Risk Factor	<$20,000	$20,000–<$50,000	$50,000–<$100,000	$100,000–<$150,000	>$150,000	Prevalence Ratio (lowest to highest income group)[11]
Less education	47.3	32.6	13.3	7.2	3.4	13.9
Smoking	23.6	13.5	8.8	7.7	3.5	6.7
Depression	48.3	23.5	16.7	11.7	8.7	5.6
Hearing loss	26.1	25.8	15.5	8.4	6.0	4.4
Air pollution	37.8	27.4	17.9	12.6	12.0	3.2

McMaster University's study also found that the impact of risk factors in their selected Canadian sample increased as income decreased for nine of the twelve risk factors, suggesting that socioeconomic status meaningfully affects an individual's lifestyle and behavioural factors linked to developing dementia. For example, the 12 risk factors accounted for 58.7% of dementia cases among the lowest income group (less than $20,000/year), compared to 31.8% for the highest income group (over $150,000/year). Table 3 shows five risk factors that were notably more common in the low-income group than in the high-income group. This finding suggests a need for targeted initiatives to reduce differences in dementia risk across income groups.

Objective: Advance therapies and find a cure

Data points related to this objective are based on the Canadian Institutes of Health Research (CIHR)'s investments and activities related to dementia. Research and innovation is one of the cross-cutting pillars of the national dementia strategy. This pillar supports all three objectives, including advancing therapies and finding a cure. This investment includes investigator-initiated research (e.g., those funded through the CIHR Project Grant competitions), research in priority areas (e.g., the Brain Health and Cognitive Impairment in Aging (BHCIA) Research Initiative), and training and career support programs (e.g., fellowships).

A continued increase in investment in research in priority areas, along with training and career support has been observed over the last five years in dementia research. This represents an increase from **approximately $42 million** in 2019–2020 to **approximately $52 million** in 2022–2023. The number of CIHR supported unique nominated principal investigators[12] who conducted dementia research increased from **262** in 2019–2020 to **297** in 2022–2023. The number of CIHR supported grants and awards focused on dementia research increased from **306** in 2019–2020 to **331** in 2022–2023.

Objective: Improve the quality of life of people living with dementia and caregivers

Quality of life has many components. The data shows positive trends in some areas, including fewer people exhibiting withdrawal from activities of interest and/or reduced social interaction as well as depression, along with a decrease in caregiver distress.[13] However, the level of daily pain among people living with dementia in home care settings has remained stable.

The percentage of people living with dementia who exhibited withdrawal from activities of interest and/or reduced social interaction decreased from **19.1%** in 2019–2020 to **17.7%** in 2022–2023. Similarly, the percentage of people living with dementia who displayed a potential or actual problem with depression, based on a depression rating scale, also decreased from **24.8%** in 2019–2020 to **23.9%** in 2022–2023. However, the percentage of people living with dementia who experience daily pain[14] stayed relatively stable from **34.6%** in 2019–2020 to **34.0%** in 2022–2023. The percentage of caregivers who provided care for people living with dementia who experienced distress decreased from **37.1%** in 2019–2020 to **35.6%** in 2022–2023.[15,16]

Research shows a difference in quality of life among social and economic groups.

A project by epidemiologists from the British Columbia Office of the Provincial Health Officer shows why it is important to think about inequalities in health when studying data and planning for dementia. They measured disability-adjusted life years (DALYs) due to dementia, which is the number of healthy years lost, either because of early death or disability linked to dementia in the population of British Columbia. Overall, they found that the rate of DALYs linked to dementia slightly increased in British Columbia between 2001–2002 and 2021–2022. However, the impact on health related to dementia wasn't the same across neighbourhoods with differing socioeconomic status (considering factors like income and education levels). The largest increase of DALYs occurred in neighbourhoods with the lowest socioeconomic status, compared to a slight reduction of DALYs in neighbourhoods with the highest socioeconomic status. This indicates a need to further explore links between dementia and broad socioeconomic factors.

Efforts across Canada supporting progress on the national dementia strategy

This chapter highlights a variety of efforts across the country supported by the Public Health Agency of Canada (PHAC), other federal organizations, provincial and territorial governments and non-governmental organizations. It shares newly-funded projects along with results from completed projects.

Results of dementia projects funded by the Public Health Agency of Canada

The PHAC plays a lead role in the implementation of the national dementia strategy. In this past year, this included the management and administration of multiple activities that contribute to increasing awareness about dementia, improving access to guidance, and conducting surveillance. These activities were funded through the PHAC's Dementia Community Investment (DCI), the Dementia Strategic Fund (DSF) and the Enhanced Dementia Surveillance Initiative (EDSI). PHAC also supports the operation of the Ministerial Advisory Board on Dementia, which provides guidance to the federal Minister of Health on dementia.

The DSF, which has funded 40 projects since 2019, has focused on increasing awareness about dementia, improving access to high-quality dementia guidance and enhancing online dementia information resources on provincial and territorial websites. The DCI funds community-based projects that seek to improve the wellbeing of people living with dementia and caregivers, and increase knowledge about dementia and its risk and protective factors. The DCI has funded 31 projects since

2018. This includes the Canadian Dementia Learning and Resource Network (CDLRN), which has recently published a **playbook** that showcases the work of DCI projects, their successes, and provides tools and resources for other organizations undertaking dementia-related projects.

The EDSI successfully broadened the scope of surveillance and addressed key data gaps to improve our understanding of dementia and its impact on the lives of Canadians. It also contributed to the surveillance and data pillar of Canada's national dementia strategy. Since 2019, the EDSI supported 15 projects, presented on the **EDSI webpage**, that have generated valuable evidence to guide public health interventions. The researchers involved in these projects have reported their results and findings in various formats, through peer-reviewed papers, technical reports, conferences, webinars, dashboards, and websites (including the EDSI webpage). To support this knowledge dissemination, PHAC is also developing a knowledge mobilization plan, working with its regional offices across the country.

The 2024 annual report highlights a few of PHAC's funded projects, including some with a focus on populations who are likely to be at higher risk of developing dementia or facing barriers to equitable care. Resources and results from these projects will be shared as final reports are received and examined. Information on the number of PHAC-funded projects within each province and territory can be found in **Appendix A**, and the total list of funded projects can be found in **Appendix B**.

Preventing dementia

Aligned with the national objective of the national dementia strategy to promote prevention, several projects have focused on increasing knowledge in Canada about risk factors linked to developing dementia and encouraging individuals to take steps to reduce their own risk.

Co-designed knowledge products to raise awareness about dementia prevention—Baycrest Academy for Research and Education

This dementia project has released eleven episodes of its *Defy Dementia* **podcast**, nine short **videos**, and ten infographics that raise awareness of modifiable risk factors such as loneliness and physical inactivity as well as protective factors such as having a brain-healthy diet and practicing cognitive engagement. The *Defy Dementia* team also partnered with the creators of *Canuckle* and *Canoku* to create a uniquely Canadian, educational and brain-healthy version of the logic puzzle sudoku: the ***Canoku Brain Health Edition.*** These resources have been co-designed through the participation of working groups with a diverse membership that includes older adults, those at risk of

developing dementia and caregivers, and seek to highlight people with lived experience as positive role models. *Defy Dementia* was recently nominated for two Webby Awards in the category of Health, Wellness and Lifestyle podcast, where it was the only podcast in its category not based in the United States and one of only a small number of Canadian nominees overall. The *Defy Dementia* project successfully reached its wide-ranging target population through 76 knowledge products and 16 activities and events.

Project reach included:

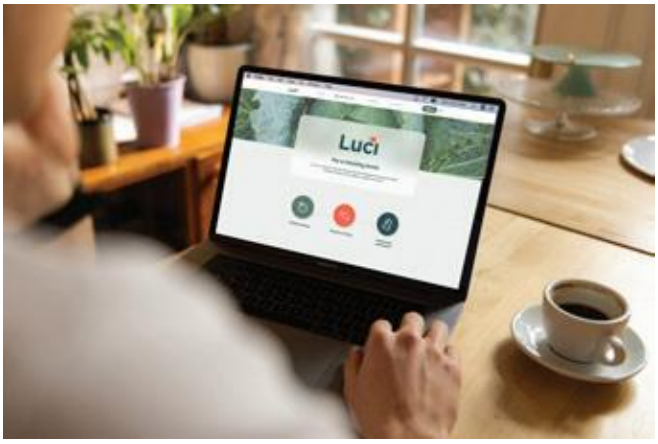
- almost **294,000** visits, listens, and views through the *Defy Dementia* website, podcast, minute videos, and infographics
- nearly **1,600** people reached through virtual and in-person community engagement events across Canada (*Defy Dementia on the Road*)
- more than **10,249,000 000** impressions from the *Defy Dementia* marketing campaign
- nearly **20,000** plays of the *Canoku Brain Health Edition* across 40+ countries

Project results:

- **91%** of those who reported using at least one *Defy Dementia* knowledge product would recommend the *Defy Dementia* resources to others.
- **66%** reported increased understanding of the modifiable risk factors for dementia.
- **57%** indicated that they had taken steps or were planning to modify their lifestyle to reduce their dementia risk.

> “I’ve done a lot of different little things [to reduce dementia risk]. I started learning a new language, I made conscious changes to my diet, I tried to take care of my health. I [had] already been doing yoga on and off, but I signed up after one of the podcasts to do it on a regular basis.”
>
> **Ravi Venkatesh, *Defy Dementia* podcast guest**

Expansion of the dementia risk reduction application Luci—Lucilab Inc.



The purpose of the *Luci* **application** is to improve knowledge and equip the public to adopt healthy lifestyles that foster cognitive health and thus reduce the risk of dementia. In particular, *Luci* provides guidance from an advisor who supports participants in meeting their personal goals regarding healthy eating, physical activity and intellectual stimulation.

Efforts to broaden the scope of *Luci* included:

- provision of independent access to the program's tools without the guidance of an advisor;
- improvement of the library, with advice on a wider range of modifiable risk factors and in several formats (7 educational articles, 8 videos, 13 podcast episodes and 13 infographics);
- assessment of new promotional channels through multiple partnerships to reach a more diverse audience through the application; and,
- collection of feedback from a range of audiences across Canada, namely ethnocultural, rural and remote communities, and official-language minority communities, in order to make the application more accessible and more relevant to these groups.

Project reach included:

- **95,198** individuals accessed the application
- **39,246** individuals accessed the library
- **1,219** individuals completed an assessment of their lifestyles independently
- **263** participants (from eight provinces and territories) were assigned an advisor
- podcasts were listened to more than **26,000** times

Project results by the end of the program, among the participants guided by an advisor:

- **100%** would recommend the *Luci* program without hesitation to people who could benefit from it.
- **96.6%** felt that they had improved their knowledge about the behaviours that contribute to brain health.
- **92.3%** stated they were taking action to reduce the risk of dementia.
- **74.6%** increased their levels of physical activity.
- **63.8%** improved their diet.
- **54.2%** increased their levels of intellectual stimulation.

> “Participer au programme *Luci* a été une expérience très bénéfique pour moi. Dès le début, le simple fait de remplir le questionnaire m’a permis de m’interroger sur mes habitudes de vie, de faire le point sur ma situation. On se dit souvent «J’aimerais améliorer telle ou telle chose» mais on ne prend jamais le temps même d’y réfléchir. Le programme de 12 semaines avec le conseiller apporte ce surplus de motivation nécessaire pour arriver à mettre en place des habitudes de manière positive et durable.”
>
> “[Participating in the *Luci* program was a very beneficial experience for me. From the start, simply filling out the questionnaire made me look at my lifestyle and get an overview of my situation. We often tell ourselves ‘I would like to improve this thing or that thing,’ but we never take the time even to think about it. The 12-week program with the advisor provides the extra motivation needed to develop positive and lasting habits.]”
>
> **Nicolas, British Columbia, a participant in the *Luci* guidance program**

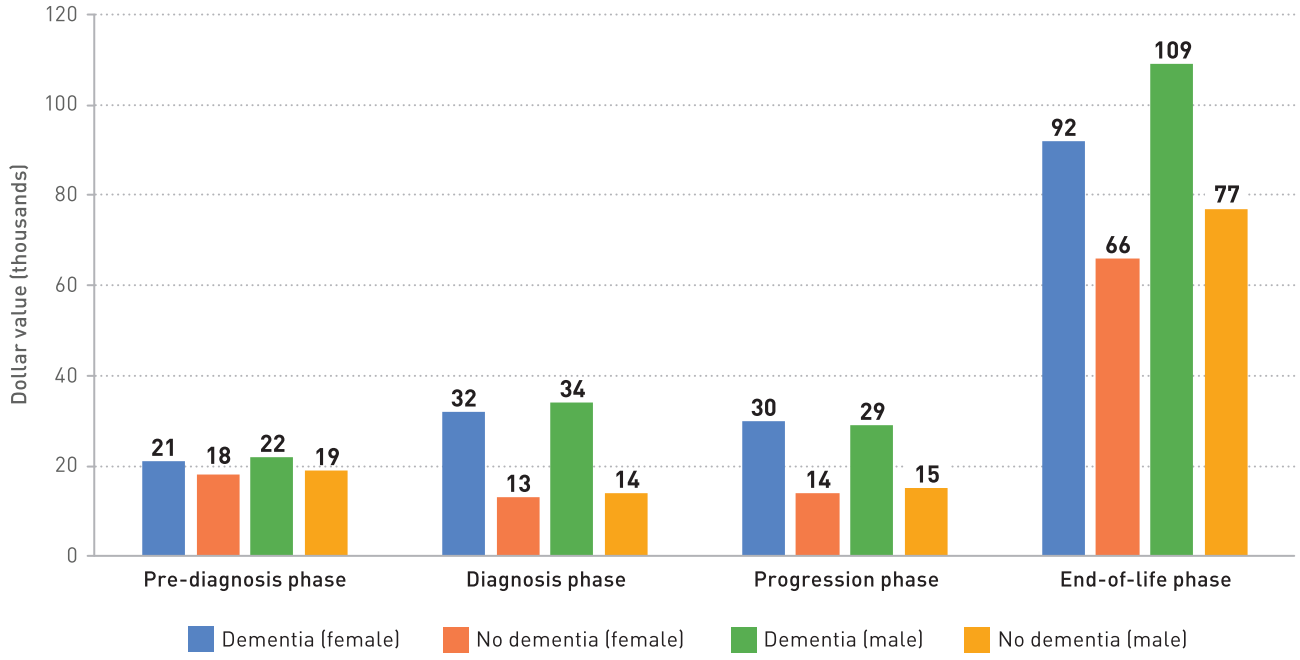
Direct health care costs for people living with dementia—Ottawa Hospital Research Institute

To improve our understanding of health care costs related to dementia and inform risk reduction efforts, researchers calculated the direct costs for people living with dementia in Ontario. Across the course of the condition, they found that **direct health care costs are higher for people living with dementia compared to a similar group of people not living with dementia**. That is, at every stage of the condition for someone living with dementia, another person with similar characteristics (considering factors like age, sex, income, comorbidities and care settings) was included in the comparison group.

The excess health care costs for people living with dementia compared to those without the condition in the year after meeting the dementia case definition and as the condition progresses (one year after meeting the case definition to one year before death) are about twice as high (see Figure 2). The direct cost is highest in the last year of life, with an excess cost of about $25,000 per person for females and $31,000 per person for males in those living with dementia. Excess costs are largely attributable to hospitalization and long-term care.

These cost estimates are being integrated into Statistic Canada’s Population Health Microsimulation Model, which will be used to project the health care costs attributable to dementia until 2050. This integration may help improve understanding about the extent to which dementia risk reduction strategies (e.g., increased physical activity, smoking cessation, and alcohol reduction) could lessen future health care system costs of dementia.

FIGURE 2: Average annual health care spending per person for those living with dementia and for similar people without dementia, per condition phase[17] and sex, Ontario, data from 2013–2014 to 2021–2022



Improving quality of life

A central focus of Canada's national dementia strategy is to expand the reach and impact of efforts to support the quality of life of those living with dementia and caregivers. These efforts work on a variety of aspects of quality of life, including improving experiences in the health care system as well as supporting our communities to be more inclusive of those living with dementia and caregivers.

Dementia-Inclusive Streets and Community Access, Participation, and Engagement (DemSCAPE)—Simon Fraser University

DemSCAPE, has focused on creating supportive neighbourhood environments where people living with dementia are able to remain engaged in their communities. Features of frequently visited areas of neighbourhoods affecting the mobility and social participation of people living with dementia have been identified through walk-along interviews of people living with dementia. Findings have been shared through a short documentary **video**; community-engagement workshops with city planners, engineers, and related decision-makers; peer-reviewed articles;[18] and an easy-to-use neighbourhood **audit tool** that assesses physical environmental barriers faced by people living with dementia. DemSCAPE, in partnership with Happy Cities, has also created ***Dementia-Inclusive Planning and Design Guidelines*** with more than 20 strategies and 69 actions to inform the physical planning and design of dementia-inclusive neighbourhoods. By engaging people living with dementia in the project, DemSCAPE created an opportunity for them to initiate change from the ground up by sharing their unique perspectives about their experiences with their neighbourhoods.

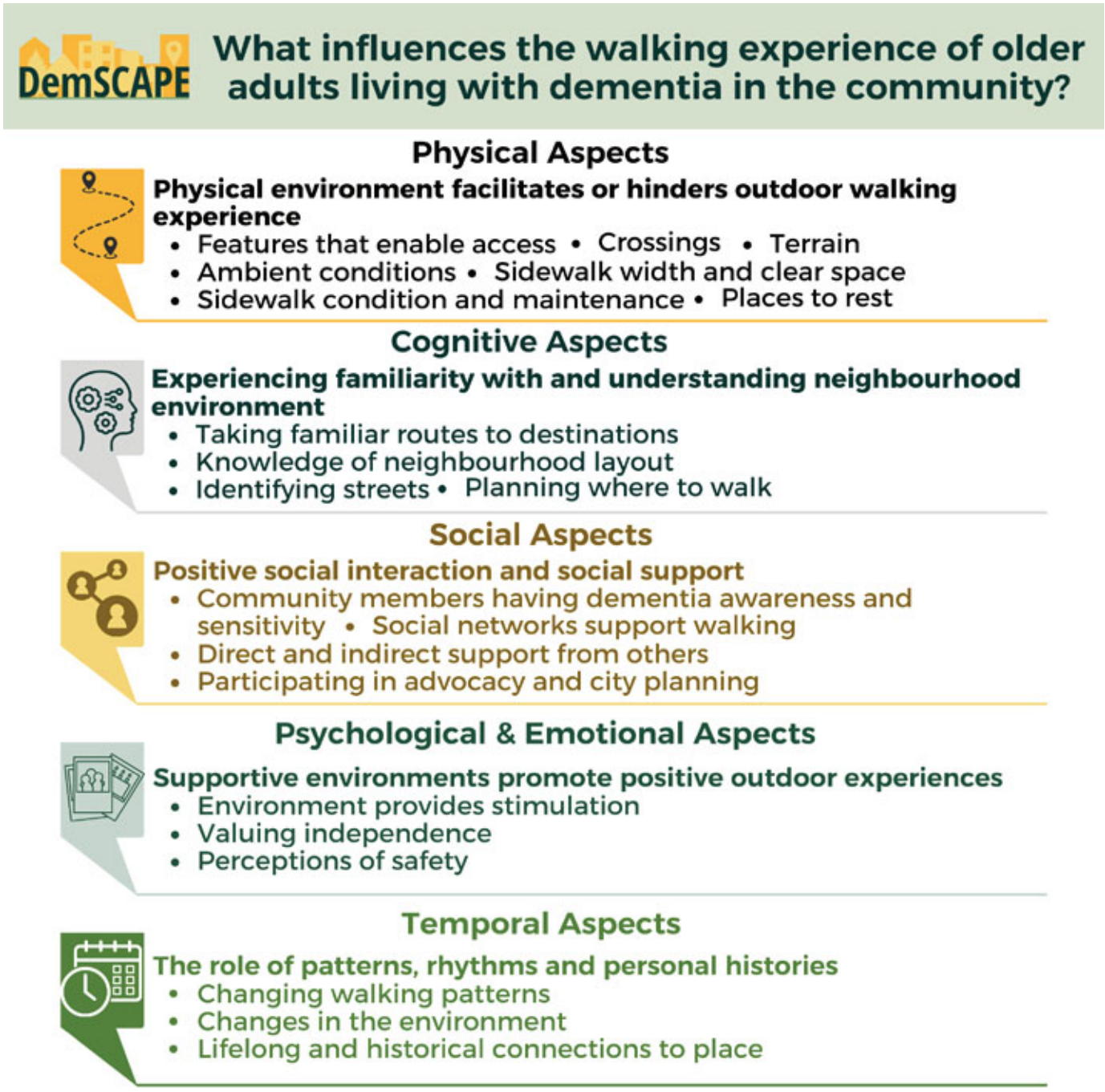
Project reach included:

- DemSCAPE online knowledge and awareness raising resources have been accessed or shared a total of **74,535 times**[19]

Project results (among those surveyed after attending community engagement events):

- **100%** agreed that people living with dementia are able to remain active in and contribute to their community, and can experience a good quality of life.
- **93%** reported having gained knowledge of the individual aspects of built and social environments that contribute to them being dementia-inclusive.
- **58%** reported feeling highly comfortable interacting with someone living with dementia and **42%** selected feeling moderately comfortable.
- On average, **84%** reported having taken steps to make their communities more dementia-inclusive, such as offering programs in the community for older adults, volunteering with neighbourhood-based community support groups for people living with dementia and caregivers, and participating in advisory groups promoting resource sharing to increase accessibility, comfort, and safety of the built environment to support older adults aging in place.[20]

> “I really am thrilled to have been here today, and I will do whatever I can because we realize numbers [of people living with dementia] are growing in the area and we need to be aware and make it possible for us to live well together.”
>
> **Maureen, community engagement event participant with lived experience**


DemSCAPE
What influences the walking experience of older adults living with dementia in the community?
Physical Aspects
Physical environment facilitates or hinders outdoor walking experience
• Features that enable access • Crossings • Terrain
• Ambient conditions • Sidewalk width and clear space
• Sidewalk condition and maintenance • Places to rest
Cognitive Aspects
Experiencing familiarity with and understanding neighbourhood environment
• Taking familiar routes to destinations
• Knowledge of neighbourhood layout
• Identifying streets • Planning where to walk
Social Aspects
Positive social interaction and social support
• Community members having dementia awareness and sensitivity • Social networks support walking
• Direct and indirect support from others
• Participating in advocacy and city planning
Psychological & Emotional Aspects
Supportive environments promote positive outdoor experiences
• Environment provides stimulation
• Valuing independence
• Perceptions of safety
Temporal Aspects
The role of patterns, rhythms and personal histories
• Changing walking patterns
• Changes in the environment
• Lifelong and historical connections to place

Artful Moments: Shared Learning—Art Gallery of Hamilton

Artful Moments: Shared Learning is an online learning website with an in-depth curriculum comprised of 6 modules, more than 300 mini lessons and 90 videos that provide guidance for staff at museums on how to develop engaging, meaningful and inclusive programming for people living with dementia. The curriculum is inspired by the gallery's longstanding programs for people with dementia and is based on the *Artful Moments Model for Successful Engagement*. By surveying staff at museums, galleries and other cultural organizations across Canada this dementia project also produced a **report** detailing the nature and scope of museum programming for people living with dementia in Canada. *Artful Moments* has increased confidence among museum staff in delivering programming to people living with dementia and has already led to new and expanding programs for people living with dementia in other museums in Canada. The project was recently awarded the Ontario Museum Association's Award of Excellence in Publications for this work.

Project reach included:

- **339** staff from museums reached
- **80** people living with dementia and caregivers involved in the project
- **40** presentations to museum staff, people living with dementia, and caregivers
- **219** staff at museums survey on the impact the project had on their understanding and awareness of dementia following their use of the project curriculum

Project results:

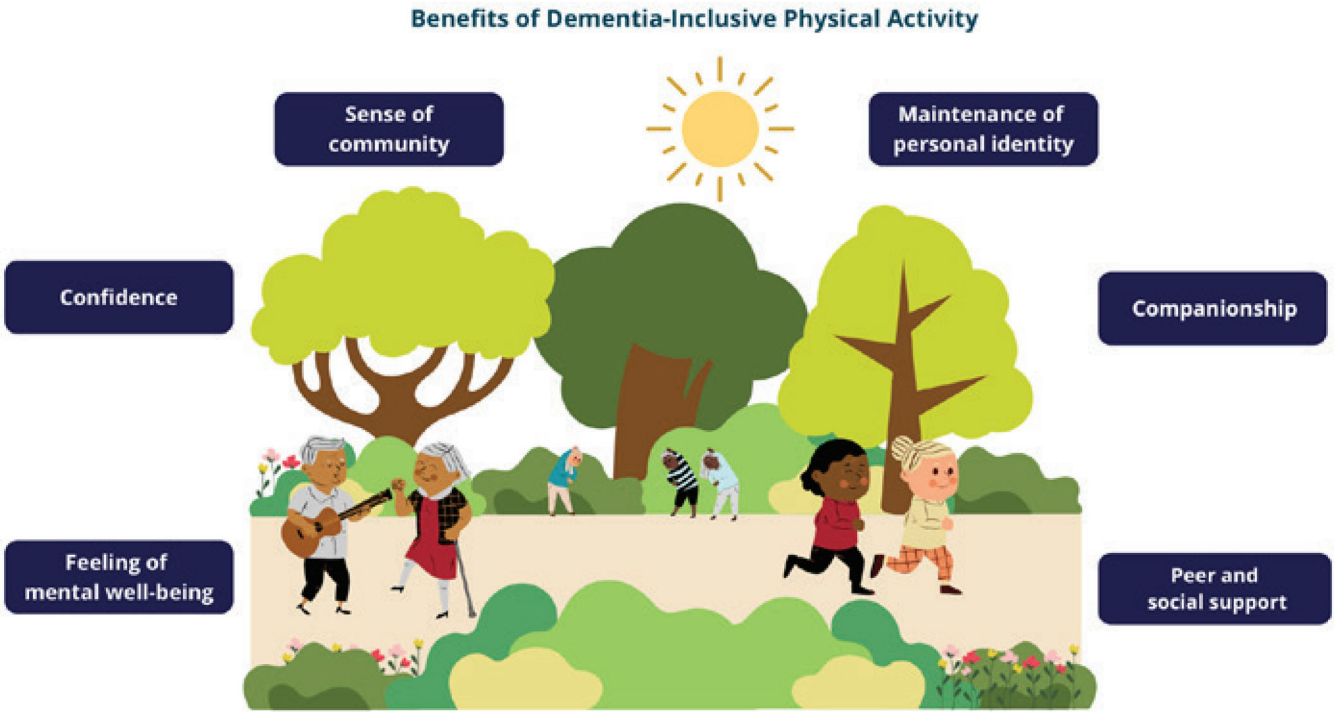
- **100%** of museum staff expressed an improvement in their comfort in interacting with someone living with dementia.
- **92%** of people living with dementia and caregivers reported that they felt more comfortable or more likely to visit a museum on their own after attending *Artful Moments*.
- **88%** of museum staff report feeling comfortable (or more comfortable) creating and presenting programs for people living with dementia.

> “Our team didn’t have any experience with this audience and we were worried that our exhibitions would not be relevant or accessible. The *Artful Moments: Shared Learning* website was an amazing resource – we learned about dementia and how to communicate and plan to suit this new audience. And we learned that the tours and activities we were already using in other programs would work really well when we knew what to do.”
>
> **Museum Facilitator**

> “I saw that it was an art-related thing and I realized that it would be people like me there, so it was very non-threatening… These programs are important because you can be free to be yourself by the kind of ambience that’s created.”
>
> **Participant living with dementia**

DREAM—Dementia Resources for Eating, Activity and Meaningful Inclusion—Moving, Eating, and Living Well—University of Waterloo

The University of Waterloo’s **DREAM** project promoted the health and wellbeing of people living with dementia and caregivers by building community capacity through creating inclusive wellness services across Canada. The project team, including people living with dementia, caregivers, community organizations, and researchers from the University of Waterloo and University of Northern British Columbia, created and adapted physical activity and nutrition training resources. Service providers were trained using these adapted resources to work with people living with dementia and caregivers, facilitating health behaviours related to physical activity and healthy eating. In addition, an online toolkit was developed to support self-learning by the broader dementia community, including people living with dementia and caregivers. Intervention research assessed change in knowledge, attitudes, and practice among the service providers as well as people living with dementia and caregivers, including individuals from francophone and ethnocultural populations.



Project reach included:

- **2,876** unique visitors to the DREAM website
- **568** people who completed the DREAM training

Project results:

- **100%** of community service providers reported that they adopted at least one positive practice that promotes the inclusion of people living with dementia.
- **93%** of community service providers reported increased knowledge of dementia.
- **85%** of community service providers reported having a greater belief in their ability to provide dementia-inclusive services.
- **80%** of people living with dementia reported improvements in exercise and found the resources beneficial for improving their perceived wellbeing.
- **78%** of caregivers reported improved knowledge to support physical activity, healthy eating, and wellbeing for people living with dementia.
- **60%** of people living with dementia reported improved knowledge to support physical activity, healthy eating, and wellbeing for people living with dementia.

> “Oh, using it, it was very informative. And a lot of the stuff in it, I very much liked because it told me stuff I didn’t know and it told me stuff I should be doing. That way, I was very impressed with it.”
>
> **Person living with dementia**

> “And I got the feeling from him that it was a relief to find out some of these things. And the one thing that really came up was, when we were watching one video, and they were shooting bows. His comment was, ‘I didn’t know I could still do that. I guess I am allowed to.’ And I said, ‘Well, yes.’”
>
> **Caregiver**

Building Capacity for Meaningful Participation by People Living with Dementia—University of British Columbia

This **project** adapted, implemented and evaluated an asset-based community development approach to create meaningful opportunities for people living with dementia and caregivers to remain active and connected in their communities through art, social, fitness and volunteer activities. This project was built on existing partnerships with community groups and focused on two communities in British Columbia and Ontario. The next phase of the project will include the creation of an action guide for use by new communities.

Project reach included:

- **570** people living with dementia
- **873** caregivers
- **778** general population

Project results:

- **92%** reported improved health behaviours, such as the use of knowledge and/or skills learned through participation in the project, including how to be supportive.
- **91%** reported increased knowledge and/or skills, such as understanding the experience of stigma.
- **87.5%** reported experiencing improved protective factors, such as social inclusion, exercise, and organizational inclusion.

> “When I was diagnosed, I worried I wouldn’t be productive anymore. But I’m doing something everyday to improve people’s lives around me. That feels good.”
>
> **Person living with dementia, peer support group leader**

Dementia in long-term care and home care settings—Canadian Institute for Health Information

To help inform service provision and policy planning, and in turn, improve quality of life of people living with dementia, the Canadian Institute for Health Information sought to gain a better understanding of health care trajectories using data from British Columbia, Alberta, Ontario, and Newfoundland and Labrador. A cohort was followed for five years after their first medical record of dementia in 2017–2018 using assessments in home and long-term care settings.

Main findings from this **project** indicated the following trends:

- **Most people living with dementia (70%) had their first medical record of dementia in a community setting**, such as a doctor’s office or memory clinic, rather than a hospital (30%), and the majority received it from a family doctor.
- People living with dementia followed **different health care trajectories**, shaped by each person’s health care needs and the supports available to them.
  - Overall, more than half (58%) received publicly funded home care, and almost half of this group transitioned to a long-term care home (27%). This transition is associated with many factors, including clinical status, hospitalization, having English as a primary language, living in a rural/remote area, poor mental wellbeing of caregivers, and living in a lower income neighbourhood.
  - About 1 in 10 people living with dementia (8%) moved to a long-term care home without having previously received publicly funded home care and did so about 11 months sooner than those who had received home care. People living with dementia who had not received home care were also more likely to be hospitalized in the three months before moving into a long-term care home (81%) compared to those who had received home care (51%).

Disease and mortality trajectory among canadians living with dementia—British Columbia, Ontario, Prince Edward Island and Quebec

Many of those who live with dementia are also living with other chronic conditions, known as comorbidities. The presence of comorbidities can impact the quality of life of people living with dementia. For example, they may have symptoms from these other conditions that require management, which can create additional challenges for their dementia care. To understand the frequency of comorbidities among people living with dementia, a multi-provincial project using health administrative databases was led out of ICES (a research institute with a community of data and clinical experts) in Ontario, with the support of other provincial organizations in British Columbia, Prince Edward Island, and Quebec.

Researchers found that, across all four provinces, **the proportion of older adults living with dementia (aged 65 years and older) with five or more comorbidities was more than double the proportion in individuals without dementia (over 50% compared to around 25%)**. Researchers also found that the most common comorbidities for people living with dementia in these provinces were cardiovascular diseases (e.g., hypertension, ischemic heart disease, stroke), diabetes, and age-related conditions (e.g., osteoarthritis and osteoporosis). These comorbidities were often present before meeting the dementia case definition, while traumatic brain injury and chronic obstructive pulmonary disease were equally likely to occur before and after meeting the dementia case definition.

Navigating Dementia NB piloted a patient navigation program in New Brunswick for individuals living with dementia and caregivers, funded through the Healthy Seniors Pilot Project and led by the University of New Brunswick and Horizon Health Network. Between July 2022 and July 2023, four anglophone and two francophone patient navigators worked out of primary care clinics and health centres throughout the province.

Engaging 287 individuals (the program worked with people living with dementia and caregivers, either offering services to both parties at the same time or offering services to either the caregiver or the person living with dementia), the program aimed to enhance knowledge of, and access to, health and social services related to dementia care. The most common reasons for contacting navigators during the project included connecting with social services, receiving informational resources on dementia and advance care planning, and accessing community resources and home health care services.

Survey data from 56 caregiver respondents revealed that 84% were generally satisfied with the patient navigator. Additionally, 75% reported greater knowledge of health and/or social services, and 74% reported increased access to such resources as a result of using this navigation service. **Findings from interviews with caregivers suggest the following considerations for future efforts**:

- the navigation program would be most helpful if it starts early in the care process, preferably immediately after a dementia diagnosis; and,
- the need to address systemic barriers to accessing health and social services, such as ineligibility or co-pay requirements.

Recognizing the potential impact of the program, the *Navigating Dementia NB* project team is engaging in discussions with government partners to explore scaling up the program with the intention to implement and evaluate a province-wide patient navigation system tailored to meet the needs of people with dementia and caregivers.

Focusing on populations that are likely to be at higher risk of developing dementia and/or to face barriers to equitable care

The national dementia strategy emphasizes the importance of considering the needs of those belonging to populations who may have a higher risk of developing dementia and/or face barriers to equitable care, and several projects have included a focus on these populations. Two examples are highlighted below.

Dementia Guidance Online Resource Hub for Chinese Communities in Canada—Yee Hong Centre for Geriatric Care

This project developed a dementia guidance **resource hub** for Chinese-speaking individuals in communities across Canada to improve access to, and encourage adoption of, high-quality dementia guidance. This user-friendly hub provides a one-stop source of credible, evidence-based dementia information in English, Traditional Chinese, and Simplified Chinese, facilitating better understanding and access to culturally appropriate dementia resources and support. The content includes 28 dementia care guidance web pages featuring articles, e-books, videos, infographics, and presentations that share various **supports and services**, **tutorials** for culturally relevant physical activities, **resources** to improve quality of life, and **online courses and workshops** about dementia.

Project reach included:

- **13,710** webpage views between February 1 and June 3, 2024
- **124** individuals attended the project's Dementia Care Forum
- **300+** individuals attended the project's Dementia Care Community Fair

Project results:

- **92%** agreed that they would recommend this website to others.
- **87%** agreed that they intended to use this website going forward.
- **82%** reported that they felt better prepared to provide care for people living with dementia after visiting the website.

> "When we build ramps for wheelchair access, we are benefitting anyone that has a mobility challenge. This hub is like an information ramp for Chinese-speaking Canadians to access dementia care resources and support. It will benefit all patients and family members that need similar information."
>
> **Wendy Wu, a user of the website and a caregiver**

A National Indigenous Dementia Surveillance Initiative—McMaster University

Guided by partners at the Anishinabek Nation and Za-Geh-Do-Win Information Clearing House, a team of researchers from McMaster University and University of Saskatchewan created and released a series of online **training videos** to help facilitate the uptake of the **Canadian Indigenous Cognitive Assessment** (CICA). The CICA is a culturally informed dementia screening tool developed with Anishinaabe communities on Manitoulin Island, Ontario. McMaster University has **facilitated four CICA training sessions, reaching more than 150 health care providers** who serve First Nations health organizations in Ontario. The ultimate goal of this project was to contribute to enhanced Indigenous dementia surveillance through training and implementation of the CICA training platform and by enhancing data collection to increase monitoring for dementia.

An article on the results of the *Homelessness Counts: Exploring Dementia in People Experiencing Homelessness* project (showcased in the **2023 report**) has now been published in ***The Lancet Public Health* journal**.

National public education campaign on dementia

The Public Health Agency of Canada (PHAC)'s 2023–2024 national public education campaign on dementia included a variety of efforts to reach Canadians such as digital advertising, outreach activities including articles provided to media organizations to use, and a risk reduction digital poster shared with Indigenous audiences across Canada.

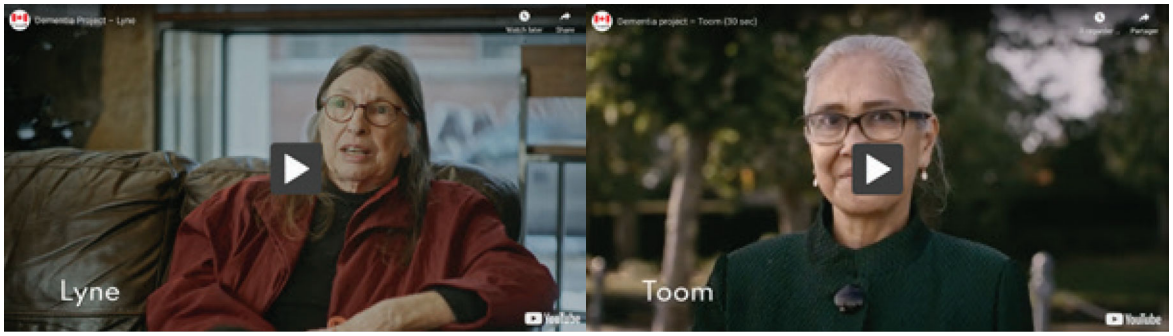
Digital advertising

The digital advertising aspect of the campaign focused on confronting stigma and reducing the risk of developing dementia. Traffic to the Government of Canada dementia web pages increased by over seven-fold during the campaign period compared to the five-month period before the campaign, for a total of 479,500 visits from September 18, 2023 to March 31, 2024.

Two new video testimonials from Canadians living with dementia were a feature of the stigma campaign which ran from September 18 to October 29, 2023. These videos were shown 1.1 million times, and users clicked on the video links a total of 3,000 times, directing them to Canada.ca/dementia for more information.

Advertising on risk reduction ran from October 30, 2023 to March 31, 2024. This phase of the campaign built on the success of past tactics while adding a new television feature on Canadian Broadcasting Corporation (CBC)'s *Family Feud* and Société Radio-Canada (SRC)'s *Au Suivant* game shows. Skill-testing questions on ways to reduce the risk of developing dementia were integrated into the game show format, a new approach to public education for PHAC. Other advertising tactics included two videos on dementia risk factors (physical inactivity and high blood pressure), interactive quizzes, search engine marketing, digital banners, out of home ads in pharmacies, clinics, casual dining and transit stations, and social media ads focused on social isolation. Digital ads were shown 62.5 million times and users clicked on the ads a total of 409,300 times

FIGURE 3: PHAC's campaign on confronting stigma – testimonial videos



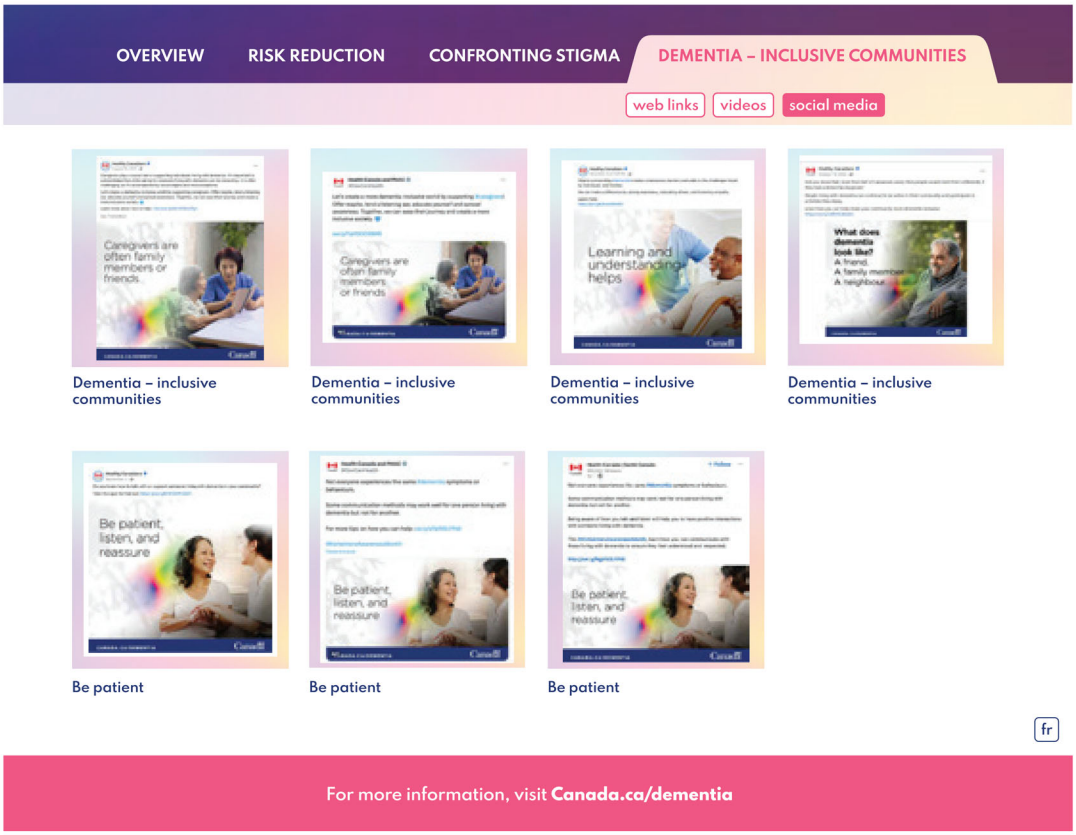
Dementia stigma—Lyne Dementia stigma—Toom

Egale delivered a national bilingual awareness campaign to promote the acceptance and understanding of people living with dementia who are also members of Two-Spirit, lesbian, gay, bisexual, transgender, queer, intersex, and additional sexually and gender diverse (2SLGBTQI+) communities. Among 2SLGBTQI+ people who have experienced trauma due to lifelong stigma and/or violence, there may be an increased risk of cognitive decline. During Alzheimer's Awareness Month in January 2024, Egale launched the ***Help Us Remain*** campaign to urge Canadians to take a closer look at a community facing a hidden battle. This campaign used billboards, bus shelter ads, social media content, a **short film**, and **audio stories** to raise awareness of the need for tailored, inclusive health care support to preserve the identities and dignity of 2SLGBTQI+ people living with dementia. **Over 4.1 million individuals were reached by this campaign**. The short film was awarded three golds and one silver at the **2024 Clio Health Awards**, which recognizes creative marketing, advertising and communications in the fields of physical health, mental health and social wellbeing.

Dementia resources toolkit

The dementia **toolkit** brings together awareness resources developed since 2019 in both a clickable PDF document and an accessible web-based version. Resources are presented by topic (overview, risk reduction, stigma and dementia-inclusive communities) and media type (web links, images, videos, social media posts) in both English and French. These resources can be used by all Canadians to further share key messages on risk reduction and encourage dementia-inclusive communities.

FIGURE 4: Dementia resources—toolkit



New resources for media use

The two 30-second stigma reduction videos mentioned above and five articles focused on reducing stigma and promoting dementia-inclusive communities were made available from January to June 2024 to local and national media outlets to publish. These articles and videos had a reach of over 17.5 million.

Risk reduction poster for Indigenous audiences

In March 2024, an email and poster about dementia risk reduction was developed and distributed to Indigenous audiences through an email network of approximately 21,000 subscribers reaching Indigenous communities across the country. Indigenous peoples have been identified as having a higher risk of developing dementia along with facing barriers to equitable care.

FIGURE 5: Reducing risk—Indigenous communities poster

Latest dementia projects

The Public Health Agency of Canada has funded six new Dementia Community Investment projects and two new projects through the Dementia Strategic Fund since the 2023 Report to Parliament. Projects will advance efforts aimed at improving the quality of life for both Canadians living with dementia and caregivers and improve online dementia resources and guidance.

Some examples include:

- Enhancing support for people living with dementia and caregivers by distributing individually personalized, pre-programmed smart tablets in 15 languages designed to accept voice commands, offer reminders for activities of daily living and interact with caregivers when tasks are not completed. A multilingual helpline and remote access to reprogram, debug or fix tablets are also provided. Intervention research is being carried out by York University and findings will be shared on how to reach and successfully engage people living with dementia and caregivers with this technology (Human Endeavour Inc.).
- Improving the quality of life and wellbeing of Red River Métis people living with dementia and caregivers, through a Métis-specific approach of culturally adapted cognitive behavioural therapy in community-based counselling sessions, cultural engagement days, and a wellness communication campaign. By developing person-centred testimonials, educational resources, and online campaigns, the initiative aims to raise awareness within the Red River Métis community about the risk and protective factors associated with dementia (Manitoba Métis Federation).
- The Government of Yukon, in consultation with Yukoners from various communities, has developed a new online hub of dementia resources. Alongside general **information** about dementia, this website covers topics relevant to those living in the Yukon such as long-distance caregiving, Indigenous views on dementia, and information on **long-term care homes in the Yukon** (Government of Yukon, Department of Health and Social Services).
- The Government of New Brunswick created a new dementia **website**, in consultation with people living with dementia and caregivers, to provide an entry point for New Brunswickers seeking information related to dementia. The website features topics such as living with dementia, information for caregivers, planning for the future, risk reduction, and community resources to support people living with dementia and caregivers. An advertising campaign was created to raise awareness of this new resource tailored to those living in New Brunswick (New Brunswick Department of Health).

Investments by other government departments and non-governmental organizations

Implementing the national dementia strategy relies on the work of a wide range of organizations from across Canada, including other federal government departments, provincial and territorial governments, academic institutions, non-governmental organizations. Here are some examples of other initiatives across Canada that are helping to implement the strategy's objectives to prevent dementia and improve quality of life.

- Launched in March 2023, **CAN-PROTECT** is a Canada-wide online cohort study of brain aging run by the University of Calgary. The aim is to **better understand risks for decline in memory, thinking, and dementia**, and factors contributing to resiliency and healthy aging. All Canadian adults are potentially eligible, including both paid and unpaid care providers, in whom stress, burden, risk and resiliency are very important. Recruitment is currently underway, with over 2,600 participants recruited so far, and a target of 10,000. Data will be collected annually over 25 years from participants in all provinces and territories and across the Canadian ethnocultural landscape.
- Enhancing Care for Ontario Care Partners, funded by the Ontario Ministry of Health, is an evidence-based program that provides free comprehensive clinical assessment, individual support, and evidence-based small group interventions for dementia caregivers. Over the past five years, the program has provided 52,055 hours of clinical service to 5,256 caregivers of people living with dementia in both small group and individual settings, in-person or virtually in over 50 communities across Ontario. As detailed in the ***CARERS Groups: Method and Impact Video Series***, CARERS groups **improve the health and wellbeing of caregivers** by providing practical skills and emotional supports, problem solving techniques, communication skills, coaching through the use of simulation, and strategies for maintaining a meaningful relationship with the person living with dementia. The training is adapted to an individual caregiver's current challenges. Research by the Reitman Centre, Sinai Health has demonstrated that CARERS group participants have shown significant positive changes in levels of stress, depression, and their overall ability to provide care and cope with the challenges of the caregiver role.
- As part of the Government of Canada's $200 billion *Working Together to Improve Health Care for Canadians Plan*, it has negotiated new ***Aging with Dignity*** bilateral agreements with provincial and territorial governments (2023–2024 to 2027–2028) to support the shared priority of **helping people in Canada to remain close to home with access to home care or safe long-term care**. Provinces and territories outline in their public action plans how federal funding will be used in their jurisdiction, including to enhance support for those living with dementia and caregivers. For example, some provinces and territories will enhance training to offer culturally safe care to people living with dementia, while others will expand existing programming to increase access to community resources such as the *First Link®* program offered through Alzheimer Societies across Canada.

- The Age Well at Home initiative funds charitable and non-profit organizations to help older adults age in place. For example, through the *Scaling Up Support Services for Seniors Living with Dementia and their Caregivers* project, the Alzheimer Society of Canada will expand its ***First Link®*** program so more **older adults living with dementia and caregivers across Canada can get access to vital services**. The expansion will focus on bringing in new staff to support new clients through several promotional campaigns, the development of engagement strategies with different equity-seeking communities across the country and scaling up internal resources for *First Link®* staff. This project will ensure there is more equitable access to regionally specific home and community programs, ensuring older adults nationwide living with dementia have access to the support services they need.
- The pan-Canadian stream of the New Horizons for Seniors Program funds multi-year projects that increase older adults' social inclusion in their communities. One such project, ***Interventions to Enhance Social Inclusion of Older Adults with Dementia in Saskatchewan Collective Impact***, is by the Saskatchewan Population Health and Evaluation Research Unit (SPHERU), University of Regina in collaboration with not-for-profit and academic organizations. Project activities, such as one-to-one support services, establishing and maintaining memory clinic sites, and dementia awareness public outreach campaigns, aim to **improve the social inclusion of older adults living with dementia and caregivers in small cities and rural or remote communities** in Saskatchewan at the individual, community, and organizational level.
- The **First Nations and Inuit Home and Community Care program** provides a continuum of basic home and community care services that enable First Nations and Inuit of all ages, including at risk older individuals and those living with dementia, to receive the care they need in their homes, facilitating aging in place within their communities for as long as possible. People living with dementia as their primary reason for admission to the home care program have been supported through the program since 1999. Indigenous Services Canada has also been engaging First Nations and Inuit communities to inform the co-development of options for a holistic, culturally safe, and distinctions-based long-term and continuing care continuum. Through these engagement sessions, First Nations and Inuit communities have shared preferences to receive care in or closer to home.[21]
- The University of Waterloo, with funding from Public Safety Canada, is working with partners in seven provinces and two First Nations to develop resources for people living with dementia and their families, first responders, dementia caregivers, and support networks to **help manage the risks of going missing among people living with dementia**. These resources include first responder-friendly awareness **videos**—two with subtitles in Ojibway and Mohawk languages—as well as tip sheets, a digital prevention toolkit, and guidelines for return home discussions. The project also collected, assessed, and compared data sets across several organizations involved in dementia-related search-and-rescue, to help move towards a national understanding. More information and access to resources that are part of this project are available through the University of Waterloo's **website**.

Investing in research and innovation on brain health in aging

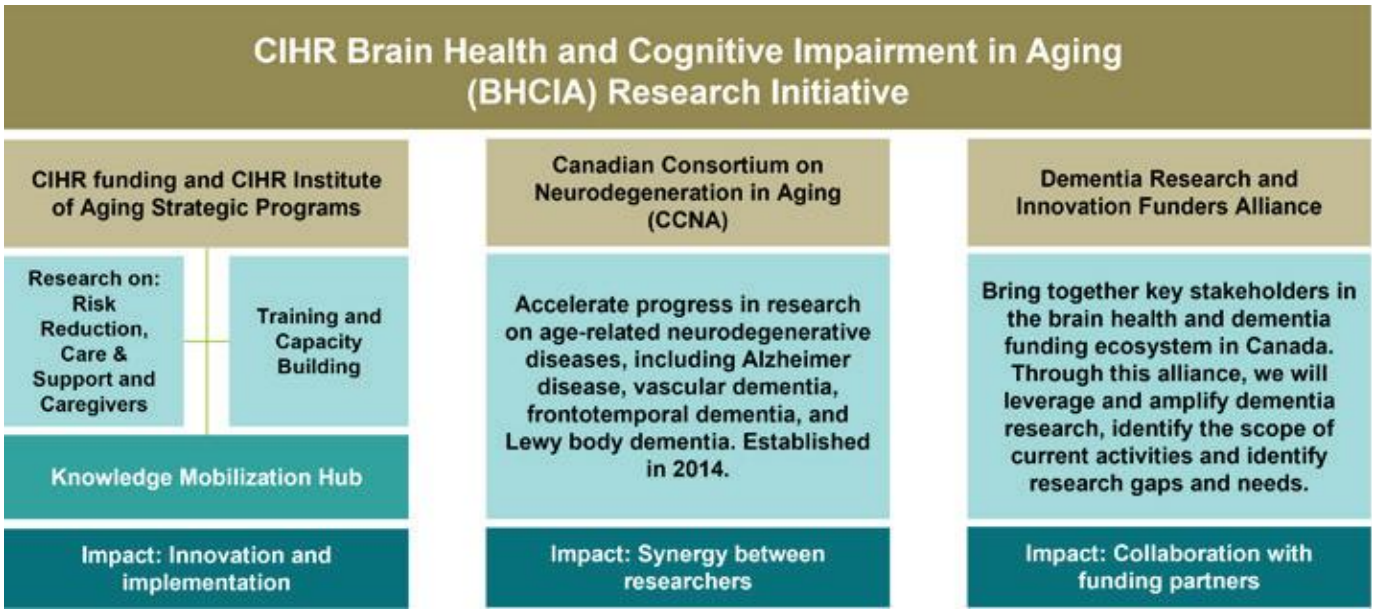
One of the objectives of the national dementia strategy is to advance therapies and find a cure. The strategy also has several cross-cutting pillars that support all three of its objectives. One of these pillars is research and innovation which is essential to supporting implementation of the strategy and moving closer to its aspirations.

Canadian Institutes of Health Research

Through the Canadian Institutes of Health Research (CIHR), the Government of Canada continues to support critical research to contribute to all three objectives of the national dementia strategy.

CIHR's **Brain Health and Cognitive Impairment in Aging (BHCIA) Research Initiative**, led by the CIHR Institute of Aging, supports research and knowledge mobilization, as well as training and capacity building on topics ranging from the healthy aging brain to cognitive impairment and care for those living with dementia and the wellbeing of caregivers. CIHR has leveraged partnership funding for the BHCIA Research Initiative, doubling the federal Budget 2022 investment of $20 million over five years to over $40 million.[22] As of March 2024, CIHR has launched 13 new funding opportunities under the BHCIA Research Initiative in alignment with the strategy.

FIGURE 6: CIHR Brain Health and Cognitive Impairment in Aging (BHCIA) Research Initiative



Knowledge creation

Through the BHCIA Research Initiative, the Government of Canada funds research that advances knowledge of the brain as it ages to help identify and reduce the risks that can result in cognitive impairment in aging.

Since 2023, CIHR, in partnership with the Azrieli Foundation and its Canadian Centre for Caregiving Excellence, has been supporting 13 projects (for a total investment of $8.7 million) through the BHCIA **Mechanisms in Brain Aging and Dementia** funding opportunity to advance understanding of the protective factors involved in cognitive health, risk reduction, and mitigating the changes occurring in the onset of cognitive impairment. Some examples of the funded research projects include:

- Guided by community partners at Maamwesying North Shore Community Health Services, Megan O'Connell (University of Saskatchewan), Jennifer Walker (McMaster University), and Edith Merceica (Maamwesying North Shore Community Health Services) are responding to community-identified priorities to co-design culturally safer caregiver support groups for Indigenous caregivers of people living with dementia. This **project** aims to co-design a scalable and sustainable model for local Alzheimer Societies to **partner with local Indigenous community organizations to implement culturally safer support groups**, while developing educational materials to increase the capacity of Alzheimer Society staff to provide culturally informed care.
- Dawn Bowdish from McMaster University and Chris Verschoor from the Health Sciences North Research Institute are studying how serious respiratory illnesses and infection-caused inflammation can impair learning, memory and immune cell function in the brain as it ages. Bowdish's team will also test anti-inflammatory drugs as a possible prevention measure against cognitive decline. The long-term objective of this **research** is to **develop therapeutics that prevent post-pneumonia cognitive decline**.
- Taylor W. Schmitz's team at the University of Western Ontario is studying the biology of brain vulnerability and resilience to late onset Alzheimer's disease. This **project** explores how the body can support brain resilience and delay disease progression. Project outcomes will guide planned clinical trials with the potential to create a treatment to **slow the progression of cognitive decline in people with late onset Alzheimer's**.

Knowledge mobilization

In 2023, CIHR launched funding opportunities under the BHCIA Research Initiative to promote the mobilization and uptake of evidence. For example, CIHR invested over $1.5 million over one year in **16 projects** as part of the **BHCIA Knowledge Synthesis and Mobilization Grants** funding opportunity. These projects are summarizing the knowledge base on cognitive impairment, identifying areas of research strengths and gaps, and promoting knowledge sharing to increase the usefulness and uptake of findings.

To further the knowledge mobilization efforts, CIHR launched a call in 2023 to support the creation of a ***Canadian BHCIA Knowledge Mobilization (KM) Hub*** for dementia research in Canada. The BHCIA KM Hub will serve as a **national, centralized research resource** for researchers, knowledge users, including people with lived and living experience of dementia and their care partners (i.e., family, friends, caregivers and care providers), and will foster collaboration among the cognitive impairment in aging and dementia community. The successful applicant team is expected to be announced in late 2024.

The **Canadian Consortium on Neurodegeneration in Aging** (CCNA) is a national program for dementia research and a key component of the BHCIA Research Initiative. The CCNA was established in 2014 to promote collaboration and foster synergies between researchers. The CCNA was funded for a second phase in 2019 for five years, with $31.6 million in federal funding and an additional $14.4 million from partners. As part of CCNA's third phase (2024–2029), in March 2024, CIHR announced an investment of $20.6 million in a CCNA Operations Centre to optimize the capacity of the CCNA to support the neurodegenerative disease research community. Some recent CCNA highlights include:

- In 2023, a team led by Manuel Montero-Odasso from the University of Western Ontario published **results** of the first CCNA randomized clinical trial, revealing that a combination of **physical exercise, cognitive training and vitamin D supplementation can significantly improve cognitive function** in older adults with mild cognitive impairment. These results have the potential to reshape cognitive care for the aging population by opening the pathway for non-pharmacological inventions.
- A team of CCNA researchers led by Ziv Gan-Or from McGill University published the world's first genome-wide association **study** on rapid eye movement sleep behaviour disorder. The **genes identified in this study can be used as targets for therapeutic development** aiming to prevent the progression to dementia and Parkinson's disease in individuals with this disorder, also referred to as RBD.

Research training and capacity building

CIHR is investing in initiatives to train and mentor the next generation of dementia researchers in Canada, providing a solid foundation for the future**.** These include, among others, the **CIHR Research Excellence, Diversity, and Independence Early Career (REDI) Transition Award**, CIHR postdoctoral **fellowships** and the **Health System Impact Fellowship** program. Further, CIHR is funding three projects within the **Future Leaders in Canadian Brain Research** program led by the Brain Canada Foundation and three projects within the **Alzheimer Society Research Program** led by the Alzheimer Society of Canada.

For example, through REDI grants, CIHR supports early career health researchers from specific underrepresented groups. This includes Myuri Ruthirakuhan, a postdoctoral researcher at Sunnybrook Research Institute. She aims to **improve how we predict dementia** and will design **trials** that lower dementia risk by using personalized biological (e.g., biomarkers from blood tests) and clinical characteristics (e.g., diabetes, hypertension).

One of the cross-cutting components of the BHCIA Research Initiative is to strengthen research partnerships. In November 2023, the Minister of Health announced the Dementia Research and Innovation Funders Alliance (the Alliance) led by the CIHR Institute of Aging with its partners to foster collaboration between funders and other partners in research and innovation across Canada. The launch event brought together more than 50 participants from 22 organizations including the Alzheimer Society of Canada, the Brain Canada Foundation, the Centre for Aging + Brain Health Innovation, Healthcare Excellence Canada, and the Public Health Agency of Canada, as well as people living with dementia and caregivers. The Alliance will support and enable the implementation of the research and innovation pillar of Canada's national dementia strategy. Its objectives include providing a forum for research and innovation funders to work together and encouraging them to align their dementia research investment strategies across Canada.

Investments in the Centre for Aging + Brain Health Innovation

The Centre for Aging + Brain Health Innovation (CABHI), supported by an initial investment of $44 million from the Public Health Agency of Canada (PHAC) (2015–2021) and a subsequent $30 million (2022–2025), accelerates innovations that enhance the health and wellbeing of older adults living with and at-risk for dementia and caregivers.

CABHI has supported more than 510 projects, including over 400 unique innovative solutions. It fosters collaboration to develop the most promising innovations emerging from older adult care settings, academia, industry, and entrepreneurial ventures. CABHI's multifaceted approach involves co-designing innovation through *Leap*—a community of older adults, caregivers, innovators, and policymakers—to ensure solutions are informed by the diverse lived experience of target users and are adapted to meet their needs.

Some of the innovative solutions that have received support from CABHI include:

- GERAS Dancing for Cognition and Exercise (DANCE) (Ontario). This program is an **evidence-based recreational and rehabilitation program** that provides older adults with physical exercise—a significant protective factor against dementia—and leverages the brain's ability to adapt, by learning through physical activity and multitasking. As of May 2024, GERAS DANCE has been implemented in 40 sites across Canada (older adult care organizations and YMCAs in Ontario and Nova Scotia) and has engaged over 1,000 older adults.
- The ***Dementia Foundations*** program (Ontario). Adapted from *iGeriCare*, *Dementia Foundations* offers four **e-learning courses on dementia and caregiver wellbeing for unregulated health care providers**, such as personal support workers. As of February 2024, the program has been used by over 1,182 health care professionals across 28 organizations (including long-term care homes, home care agencies, and community hospitals) to support staff training.

- ***GeriMedRisk*** (Ontario). This program is a virtual, interprofessional clinical service that connects physicians, nurse practitioners and allied health professionals with geriatric specialists to **optimize medications to improve physical and mental health conditions in older adults**. This solution is especially relevant for individuals living with dementia who often also live with other conditions requiring multiple medications that can be challenging to manage. As of February 2024, *GeriMedRisk* has positively impacted over 14,400 health care professionals by providing interdisciplinary training opportunities, as well as more than 5,000 older adults and caregivers through the benefits of improved access to care and support.
- The **ApprOPriate USe of AntiPsychotics in older residents living in long-term care centres** (OPUS-AP) program (Quebec). People taking antipsychotic medications can experience significant side effects, including confusion, dizziness, stroke or even death. This program improves the quality and experience of care for residents living with dementia, who are experiencing behavioural and psychological symptoms of dementia (BPSD), caregivers and care providers, by **applying non-pharmacological interventions**. As of January 2024, the program has positively impacted over 4,000 people living with dementia and caregivers through significant decreases (approximately 86%) in antipsychotic medication prescriptions, and reduction in BPSDs. The program has been adopted in over 20 long-term care homes across Quebec.

Gaining a better understanding of dementia in Canada

Dementia-inclusiveness and dementia-related stigma

This past year, the Public Health Agency of Canada (PHAC) continued to invest in public opinion research whose results inform efforts in support of the national dementia strategy's implementation.[23] The focus of two recent projects was on reducing stigma and enabling dementia-inclusive communities in Canada. Some key results are shared below.

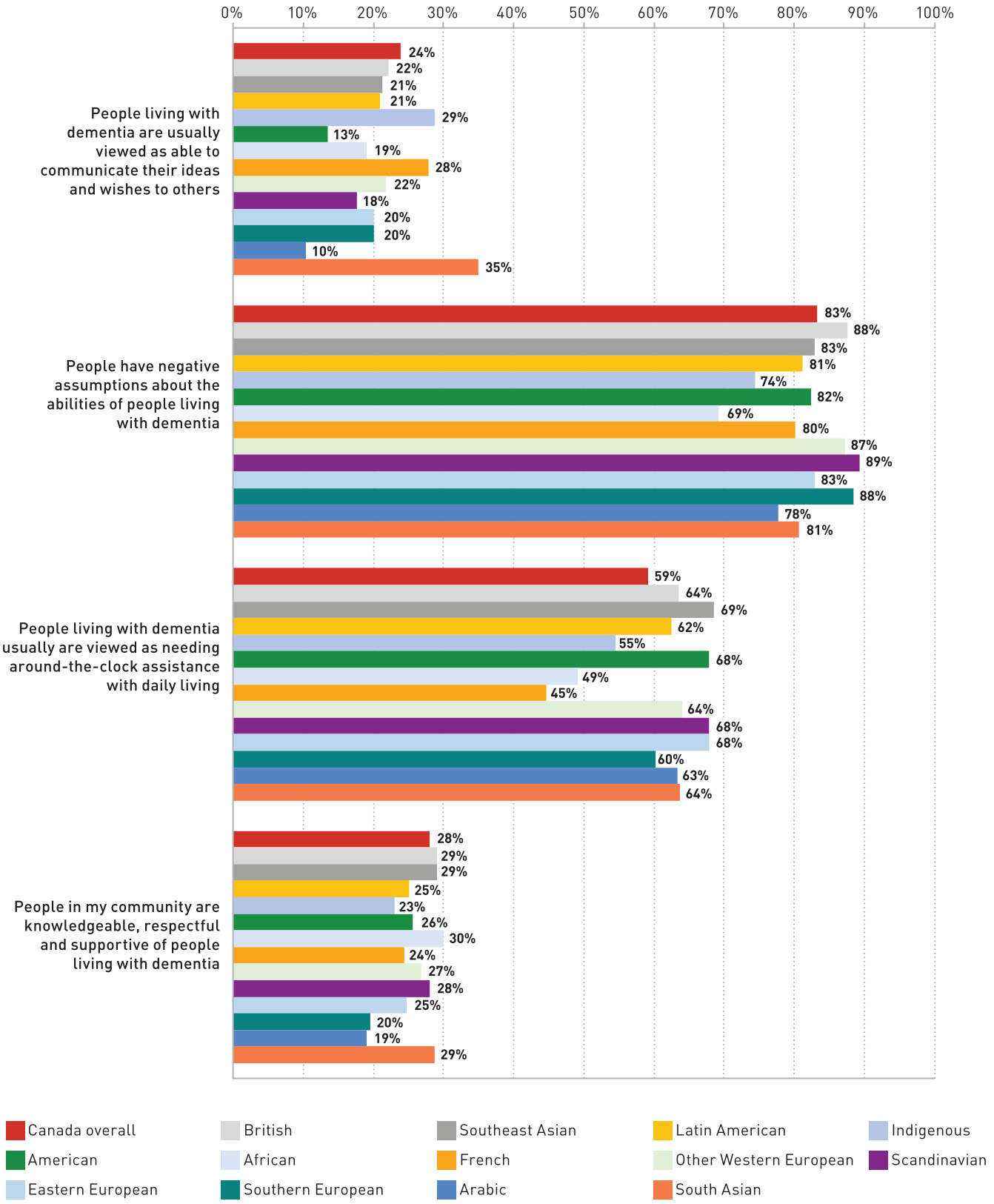
General perceptions of people living with dementia

Through a public opinion research study (2023) for PHAC, respondents were asked about their perceptions of the views of people in Canada related to dementia.[24] These questions included whether: people generally have negative assumptions about those living with dementia; they see them as able to communicate their ideas and wishes to others; they need others to make decisions for them; they need around-the-clock assistance with activities of daily living; and they need supervision due to dangerous behaviour. They were also asked how knowledgeable, respectful and supportive their communities appear to be regarding people living with dementia.

Results from this survey can be broken into demographic groups. For example, women were more likely (64%) than men (54%) to agree that people living with dementia usually are viewed as needing around-the-clock assistance with daily living. This belief was also higher among those aged 18 to 24 (68%), while those aged 65 and older (50%) were the least likely age group to agree. Further differences between ethnic and cultural minority groups can be seen in Figure 7.

Unpaid caregivers were more likely to agree (33%) that people in their community are knowledgeable, respectful, and supportive of people living with dementia, compared to 27% of Canadians overall. Men were more likely than women to share this view as well.

FIGURE 7: Societal perceptions of dementia (percentage of respondents that believe society generally agrees with the statements below), by self-identified ethnicity



Individual perceptions of quality of life

People living with dementia, particularly those who live in dementia-inclusive communities and who have access to tailored supports, can sometimes continue activities they enjoy for years following a diagnosis. However, public opinion research suggests that some Canadians are less likely than others to believe that this is possible (see Figures 8 and 9). Respondents who identified as British and other Western European (German, Dutch) were more likely to agree, whereas those identifying as African and Latin American were least likely to agree.[25] There are also some notable differences across groups on views regarding the quality of life experienced by people living with dementia. Those identifying as Arabic and French Canadian are most likely to believe that people living with dementia experience a poor quality of life, while those identifying as Indigenous, other Western European and African were least likely to believe this.

FIGURE 8: Percentage of respondents who agree that dementia are often able to continue activities that they enjoy, by self-identified ethnicity

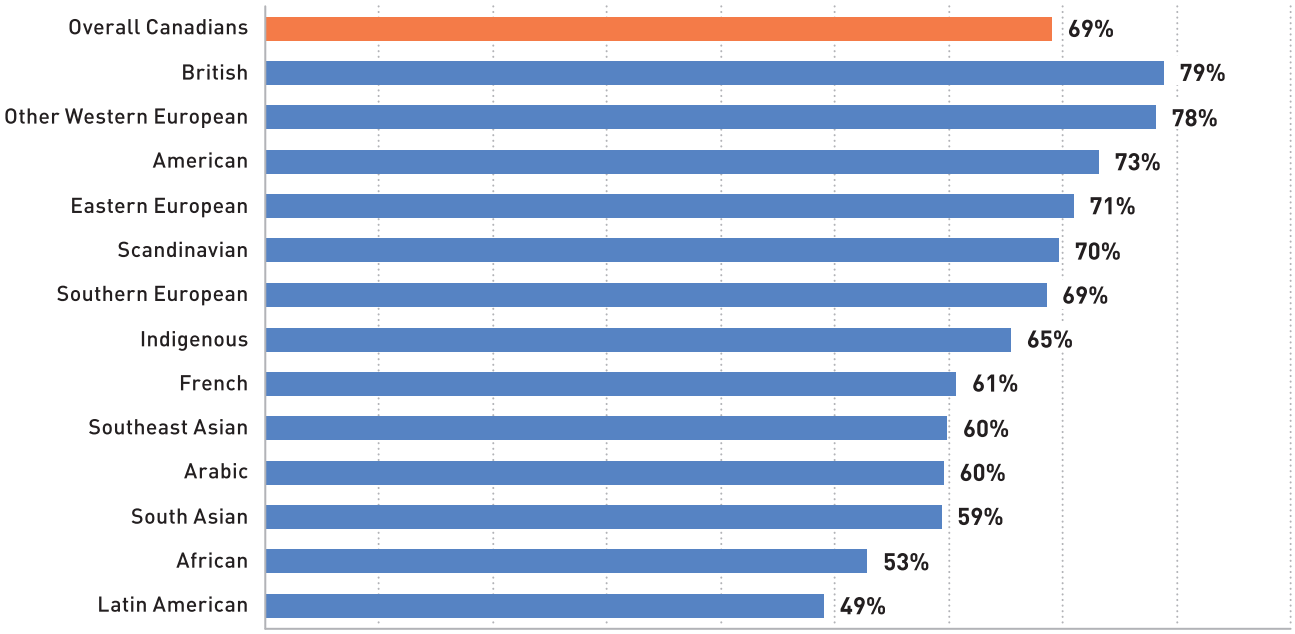
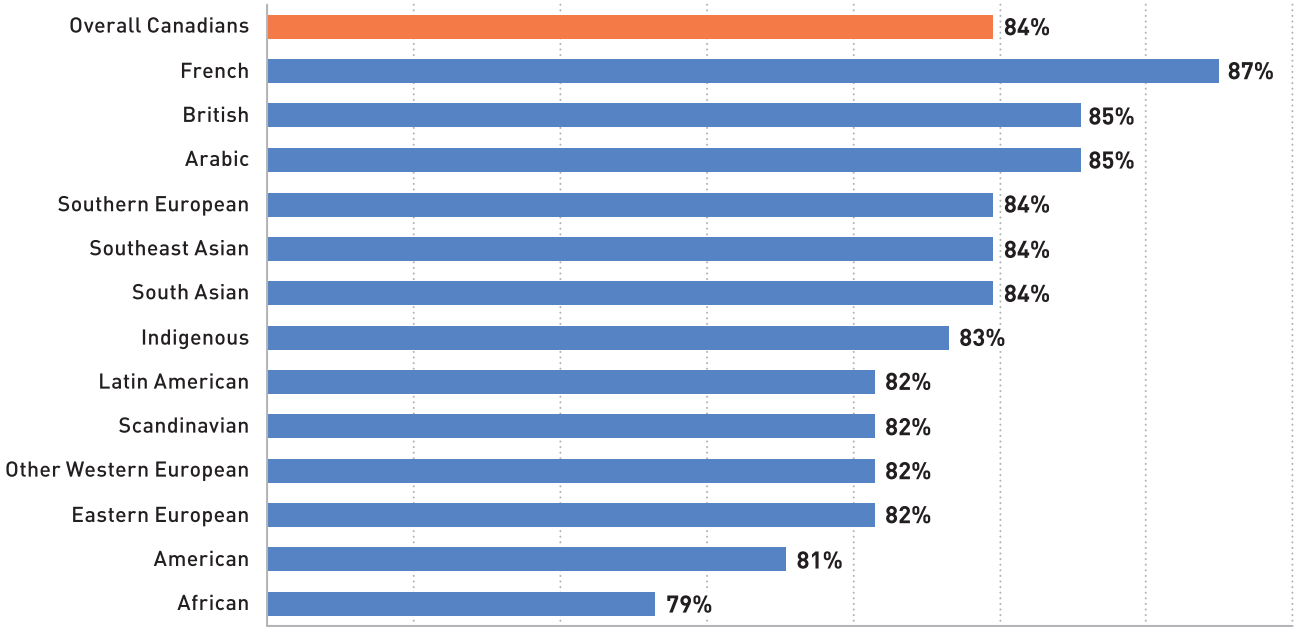


FIGURE 9: Percentage of respondents that believe the dementia have a moderate to poor quality of life, by self-identified ethnicity (3–5 on a scale of 1–5)



Having experience as an unpaid caregiver appears to positively influence perceptions of the abilities of people living with dementia. For example, many unpaid caregivers (74%) agreed that people living with dementia can continue activities they enjoy compared to all other respondents (69%). Similarly, 78% of unpaid caregivers agreed that people living with dementia can sometimes continue living in their own homes for years following diagnosis compared to 68% of those who are not unpaid caregivers.

Whether views about dementia are changing

More than half of respondents (59%) reported no changes in their views towards dementia in the past five years, while over a quarter of respondents (26%) indicated that they have a more positive view, and 10% indicated that they have a more negative view. The views of those aged 25 to 44 (21%) were the least likely to have improved while those aged 65 and older (33%) were more likely than respondents generally (26%) to say their views had become more positive. Those identifying as South Asian and Latin American were also more likely than others to report a more positive view (see Figure 10).

For respondents who reported a change in their views, the main reasons provided were knowing or caring for someone living with dementia (46%), and having more knowledge about dementia through general information from sources other than the media and care providers (25%) (see Figure 11). Those aged 65 and older were more likely to indicate that their own personal aging process or worry about developing dementia themselves (14%) and information shared through media (8%) were reasons for changing their views, compared to 9% and 6% of overall respondents. Those aged 18 to 24 were more likely to indicate that their views changed due to information they received from paid care providers (21% compared to 6% of overall respondents).

FIGURE 10: Percentage of respondents reporting a more positive view of dementia over the last five years, by self-identified ethnicity

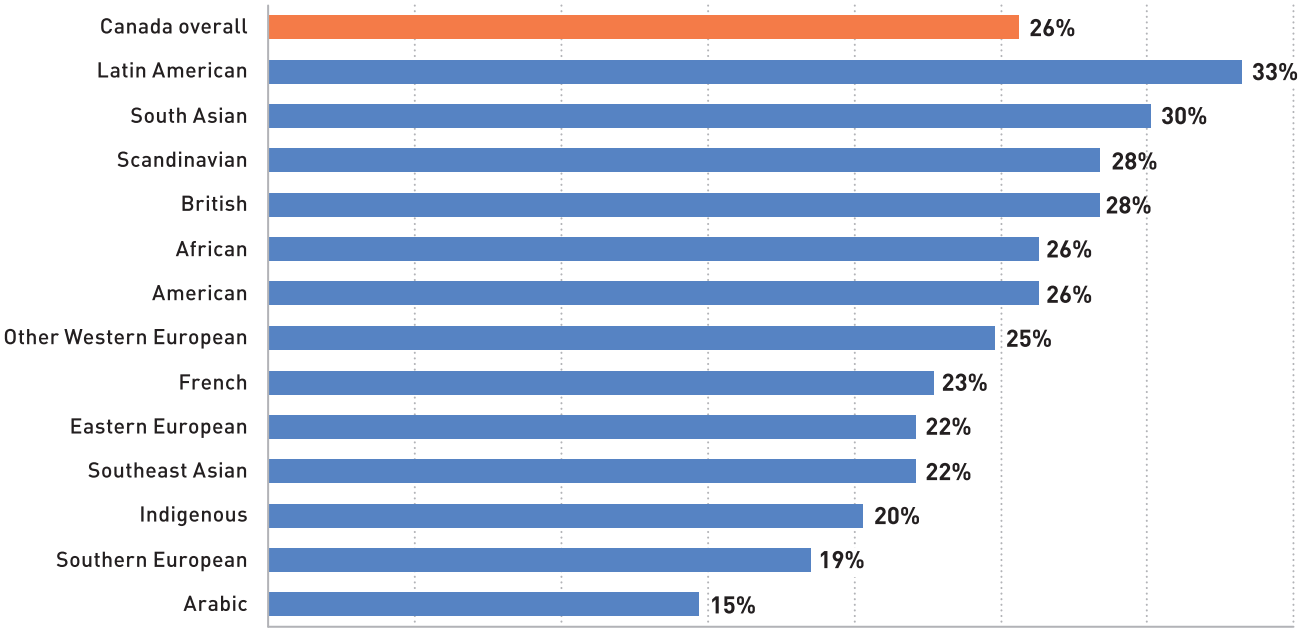
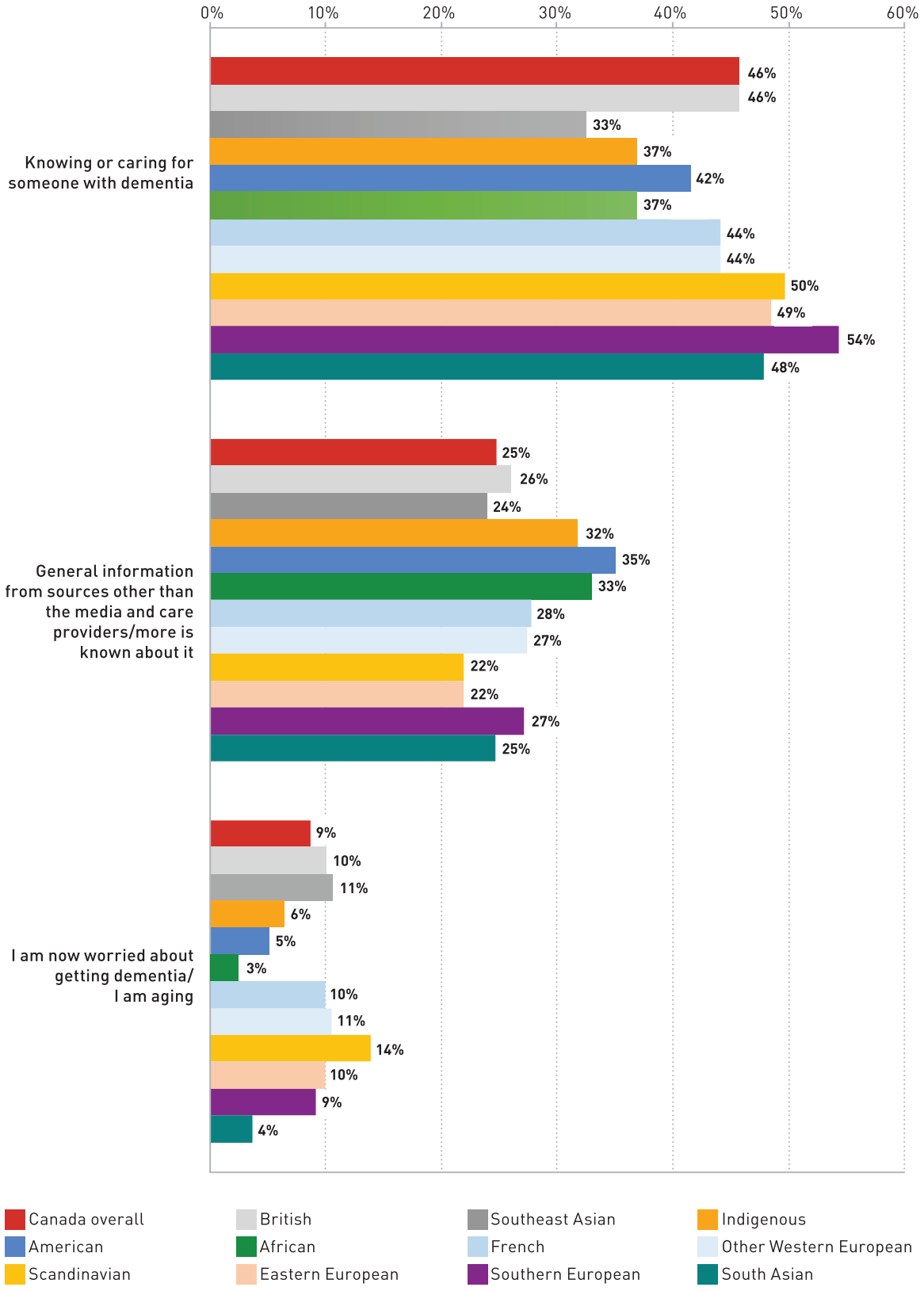


FIGURE 11: Main reasons for Canadians reporting a more positive view of dementia over the past five years, by self-identified ethnicity



Familiarity with dementia-inclusive communities

Creating dementia-inclusive communities across Canada is an important part of advancing the national dementia strategy's objective of improving quality of life for people living with dementia and dementia caregivers. A dementia-inclusive community is one where people living with dementia are welcomed, supported and valued and where the care they receive is culturally safe and culturally appropriate. Dementia-inclusive communities help to enable independence and reduce barriers such as stigma that can discourage or prevent people living with dementia from being active and engaged in their communities and their favourite activities.

In 2023, the Public Health Agency of Canada commissioned public opinion research to explore attitudes, knowledge, and experiences related to dementia-inclusive communities across Canada.[26] To better understand differences between groups, this research included a focus on unpaid caregivers, individuals working in sectors more likely to interact with people living with dementia, those who identify as Two-Spirit, lesbian, gay, bisexual, transgender, queer, intersex and additional sexually and gender diverse (2SLGBTQI+), and members of some ethnic and cultural minority communities.

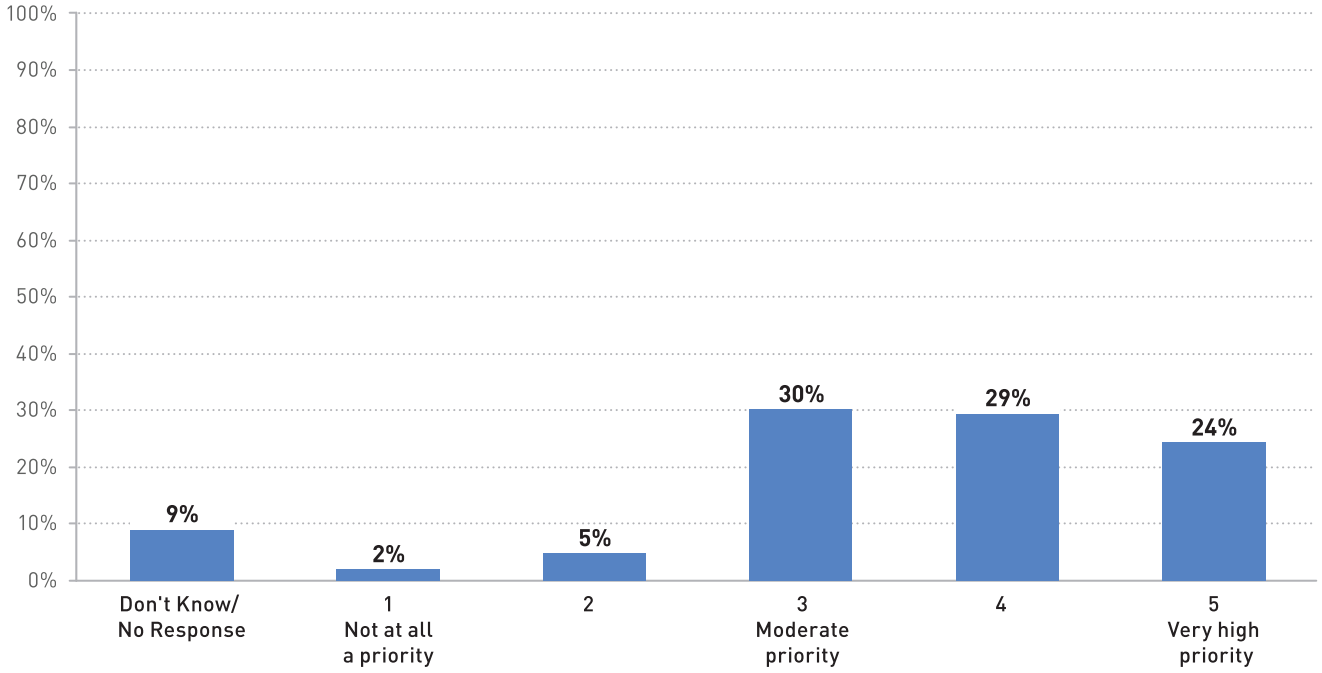
When asked if they had heard of the concept of "dementia-inclusive communities," 75% of survey respondents had not. The highest level of awareness within Canada was people living in British Columbia (27%) and the lowest people living in Quebec (8%). Further, English-speaking respondents (21%) were significantly more likely to have heard of dementia-inclusive communities than French speakers (7%), suggesting a greater need for awareness raising among francophones.

Whether dementia-inclusive communities are a priority

After being provided a definition of dementia-inclusive communities during the survey, 53% of respondents indicated that having their communities become more dementia-inclusive was either a high or very high priority (see Figure 12). Within this group, women (58%) were nine percentage points more likely than men (49%) to say so, and respondents living in Quebec (59%), the Territories (59%), and Atlantic Canada (58%) were slightly more likely to agree.

For many of these respondents, improving the quality of life for older people (25%) and preparing for the needs of Canada's aging population (23%) were key reasons for stating such communities should be a high priority. Among those who felt making their community more dementia-inclusive was lower than a moderate priority (7%), the most common explanation was that other concerns were more important, and/or that it was not needed (26%).

FIGURE 12: Priority ranking for having their community become more dementia-inclusive



Knowledge and availability regarding elements of dementia-inclusive communities

Most of the survey respondents (81%) did not know if their community had a guide or plan to be more dementia-inclusive and 63% did not know what types of measures or activities a dementia-inclusive community might provide. When asked to select from a list of which measures their community had in place that contribute to it being more dementia-inclusive respondents most often mentioned:

- well-signed crosswalks with advance crossing for pedestrians and/or audio signals (37%);
- well-maintained sidewalks and pathways (34%); and,
- easily recognizable transit signs like bus stops and subway entrances (33%).

Easy to recognize public washrooms were selected the least often (24%). Respondents living in Atlantic Canada (27%), Manitoba/Saskatchewan (24%) and rural or remote communities (29%) most often indicated that their community had none of the listed dementia-inclusive measures in place, compared to 16% of respondents generally.

Regarding measures designed specifically to welcome and include people living with dementia, community centre activities (37%), peer support groups (22%), and cultural activities such as participating in dance sessions and visiting museums (21%) were most commonly identified by respondents as available in their communities. However, 40% of all respondents did not know whether any dementia-inclusive activities were provided in their community. This knowledge gap was highest among people living in Quebec (50%) and lowest among people living in the Territories (14%) where respondents were more likely to say their communities offered all the dementia-inclusive activities they were asked about.

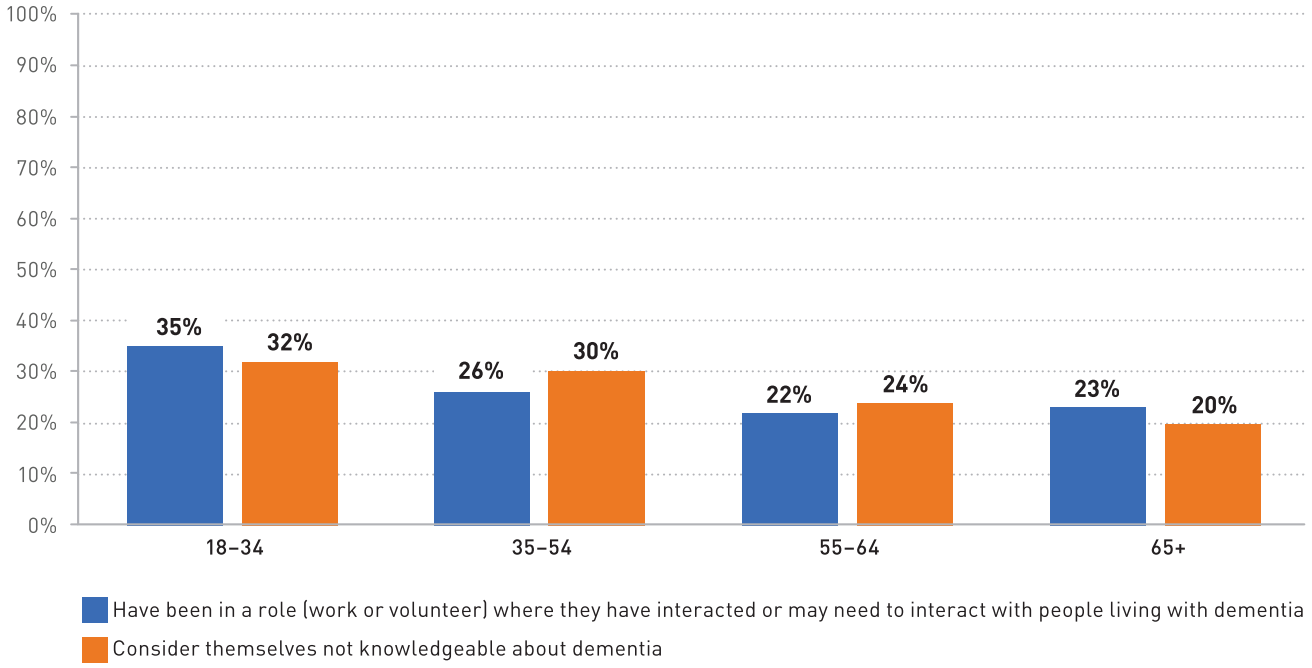
Encouraging healthy aging in the community

Just over a third (36%) of respondents said their communities were either good or very good at supporting healthy aging, including making it possible for older adults to remain engaged in community life. This rating was slightly higher among people living in British Columbia (41%) and the Territories (44%). At 50%, those identifying as South Asian are the most likely ethnic or cultural minority group to rate their community good or very good at supporting healthy aging, and 43% of those identifying as Black felt the same. The most common reason (37%) for giving their community a good rating as a place that supports healthy aging was the availability of community activities (senior centres, support programs, and social activities). Conversely, a lack of resources and supports (51%) was the most common reason for a negative rating among the 17% of respondents who gave their communities a poor or very poor score.

Working and volunteering with people living with dementia

Those who interact with people living with dementia as part of their work are important contributors to a dementia-inclusive community. Just over one quarter (26%) of respondents work(ed) or volunteer(ed) over the past ten years in a sector where they interact(ed) with someone living with dementia, however, only half of respondents said their organization provided training on how to do so.[27] Of those, 18 to 34 year olds were the most likely age group to have done so (35%), while also most likely across all age groups to say they are *not* knowledgeable about dementia. This finding suggests that younger individuals are a key audience for dementia-inclusive training in relevant work and volunteer settings (see Figure 13).

FIGURE 13: Percentage of respondents working in a sector where they may need (or may have needed) to interact with people living with dementia and percentage of respondents who report that they are not knowledgeable about dementia, by age



Compared to all respondents (15%), those who identified as Black were more likely than any other ethnic or cultural group to report that they work or have worked in a role where they are likely to interact with a person living with dementia (24%). Among those identifying as Black, 15% reported currently doing so for work compared to 6% of all respondents. The most common work sector for interaction with a person living with dementia was health care (57%), followed by retail and food services (16%), and recreation/fitness/community and religious organizations (14%). Interactions within the retail sector were more common among those identifying as South Asian (25% compared to 10% of total respondents) as well as in food services (19% compared to 8%).

Training to support dementia-inclusive communities

Providing inclusive services to people living with dementia often requires learning new skills and approaches that may differ from typical interactions with the general public. Roughly half of respondents who either currently or formerly work(ed) or volunteer(ed) in a role where they interact(ed) with people living with dementia said their organization provided training on how to do so. Where training was offered, 68% said they personally received that training and women (73%) were more likely to have done so than men (62%). This training most often focused on general knowledge about dementia such as signs or symptoms, communication and interaction tips and/or how to assist someone who appears confused or lost. Almost a third (30%) of those with experience interacting with people living with dementia at work either disagreed or strongly disagreed that their organization does or did enough to provide this type of training for staff and volunteers.

Comfort interacting with people living with dementia

The level of comfort when interacting with people living with dementia can influence the inclusiveness of a community. Public opinion research suggests there has been a small decline in the number of Canadians who feel at least moderately comfortable (3 to 5 on a five-point scale) interacting with people living with dementia as of 2023 compared to 2020 (down to 80% from 84%). However, this research also revealed that these levels of comfort were higher in 2023 among respondents who were unpaid caregivers (91%), identify as South Asian (85%), Black (84%), or women (83%). Women were also more likely to say they would be very comfortable (5 on a five-point scale) interacting with someone living with dementia (22%) compared to men (17%).[28]

There are recommended tips to ensure supportive interactions with people living with dementia; however, knowledge of those tips appears to vary widely in Canada. Survey results suggest that many are unaware of how best to communicate with people living with dementia in a supportive way. Almost half of respondents **incorrectly** identified "physical contact like handshakes" (46%) and "provide plenty of information" (40%) as recommended tips. As well, 17% of respondents incorrectly thought that avoiding non-verbal encouragement is recommended. This tendency to incorrectly identify recommended tips was higher among unpaid caregivers, suggesting a particular need to reach this group with information about supportive communication.

Recommendations for how best to interact with people living with dementia:

- sit or stand at the same level and make eye contact
- respect physical space
- speak directly to the person living with dementia and not their caregiver
- stand directly in front of them, do not approach from behind

Communication tips:

- use shorter sentences with one point each
- find a quiet place to talk and lower the volume around you
- avoid correcting the person
- try drawing pictures or pointing to objects
- pay attention to non-verbal cues—such as body language, facial expressions, hand gestures and posture

Conclusion

We thank all those who contributed information in this year's report, including those who participated in the Public Health Agency of Canada (PHAC)'s public opinion research studies. Further details on the results of the public opinion research conducted on behalf of PHAC can be accessed through **Library and Archives Canada**.

We also thank the many individuals and organizations across Canada working to support Canada's national dementia strategy and its vision of a Canada in which all people living with dementia and caregivers are valued and supported, quality of life is optimized, and dementia is prevented, well-understood and effectively treated.

If you would like to receive communications about the national dementia strategy and funding opportunities or provide information about relevant dementia-related activities, please contact the **PHAC Dementia Policy Secretariat**.

Appendices

Appendix A: Map of dementia projects distributed across the country

FIGURE 1: Map of the Public Health Agency of Canada (PHAC) investments

TABLE 1: Overview of provincial/territorial locations of PHAC investments

	Total projects funded	National projects	Provincial projects	Number of project sites
DSF	40*	17	21	81
DCI	31	5	26	111
EDSI	15	5	10	33
Total	**86**	**27**	**57**	**225**

	NL	PEI	NS	NB	QC	ON	MB	SK	AB	BC	YT	NWT	NU
DSF	2	1	5	6	4	14	2	13	18	12	4	0	0
DCI	1	1	4	6	14	33	13	4	5	16	0	8	0
EDSI	1	1	2	2	6	8	2	2	3	5	1	0	0
Total	**4**	**3**	**11**	**14**	**24**	**55**	**17**	**19**	**26**	**33**	**5**	**8**	**0**

*This includes two grants to the World Health Organization for global efforts

Appendix B: Projects funded through the Dementia Strategic Fund, the Dementia Community Investment and the Enhanced Dementia Surveillance Initiative

Note: *Projects marked with an asterisk (*) indicate that they are national in scope*

Dementia Strategic Fund (DSF) projects

Awareness Raising Initiatives

- Abécédaire d'un cerveau en santé—Sensibilisation à la démence dans l'Ouest et le Nord (*La Société Réso Santé Colombie-Britannique*)
- Acquainting Canadian Seniors with State of the Art Dementia Prevention Strategies: Up Close and Personal (*Cyber-Seniors: Connecting Generations*)
- Addressing Dementia Stigma (ADS) and Inclusiveness in Small Rural Communities (*City of Vernon*)
- Addressing Stigma and Supporting Living Well for Persons Living with Dementia and Care Partners: The Forward with Dementia Initiative (*Schlegel-UW Research Institute for Aging Foundation*)
- *Améliorer le programme Luci et le déployer à plus large échelle pour toucher une population diversifiée (Luci-3) (*Lucilab Inc.*)
- Apna Mind, Apna Body—Dementia Awareness in South Asians (*Indus Community Services*)
- Artful Moments: Shared Learning (*Art Gallery of Hamilton*)
- Awareness Builds Connections in Dementia-Friendly Communities (ABCD Initiative) (*Alberta Rural Development Network*)
- Culturally-Appropriate Dementia Awareness and Education Project for Diverse Immigrant Communities (*S.U.C.C.E.S.S.*)
- *Curating, designing, and disseminating co-designed knowledge products to raise awareness about dementia prevention (*The Baycrest Academy for Research and Education in the Baycrest Centre for Geriatric Care*)
- Dementia-Inclusive Streets and Community Access, Participation, and Engagement (DemSCAPE) (*Simon Fraser University*)
- *Dementia Prevention Internet-Based Intervention: Randomized Controlled Trial and Knowledge Translation (*McMaster University*)
- *Dementia Supporter (Volunteer) Training and Making Support Network Titled Team Orange in Each Japanese / Japanese Canadian Community (*Japanese Medical Support Network in Canada*)
- *Luci : une application mobile personnalisée, accompagnée par un entraîneur, servant à adopter et à conserver des habitudes de vie saine pour réduire le risque de la démence chez les personnes d'âge moyen et les jeunes aînés présentant des facteurs de risque modifiables (*Lucilab Inc.*)
- Mesures visant à prévenir ou combattre la stigmatisation des personnes âgées atteintes de démence dans leurs collectivités et promouvoir leur inclusion (*Cégep de Drummondville*)

- *Mind Over Matter®—A Comprehensive Brain Health Awareness Campaign (*Women's Brain Health Initiative*)
- Open Minds, Open Hearts (*Conestoga College Institute of Technology and Advanced Learning*)
- Partnering for Dementia Friendly Communities (*Department of Health and Community Services, Newfoundland and Labrador*)
- *Please Be Patient: I'm Still Me (*Brella Community Services Society*)
- *Promoting Dementia Awareness in Intergenerational Programming in Canada (*Families Canada*)
- Reducing dementia-related stigma by using person-centred language to describe responsive behaviours in hospital admissions (*Regional Geriatric Program of Toronto*)
- Sharing Dance with People with Dementia (*Canada's National Ballet School*)
- *Stigma: An Exploration of Lived Experience, Understandings and Behaviours of Dementia within Indigenous Communities (*Native Women's Association of Canada*)
- *Strengthening Chosen Family—Dementia Awareness and Inclusivity in the 2SLGBTQI+ Community (*Egale Canada*)
- Stronger Together: Making Ottawa and Renfrew County Dementia Inclusive (*Dementia Society of Ottawa and Renfrew County*)

Dementia Guidelines and Best Practices Initiative

- *Best Practice Directions in Indigenous-Centred Dementia Care (*The Governors of the University of Calgary*)
- *Best Practice Resource Hub on the Identification, Assessment and Management of Behavioural and Psychological Symptoms of Dementia for Health Care Providers and People Living with Dementia (*Canadian Coalition for Seniors' Mental Health through the Canadian Academy of Geriatric Psychiatry*)
- *Bonifier et élargir l'accès à des conseils de qualité par la personnalisation du parcours et des contenus multimédias dans le programme numérique Luci visant à prévenir la démence chez les personnes à risque (Luci-2) (*Lucilab Inc.*)
- *Canadian Best Practice Guidance for Quality Community Supports and Care for Adults with Intellectual Disabilities and Dementia and Their Caregivers (*Reena*)
- *Creation of National Dementia Guidelines and Best Practices for Person-Centred Communication and Care: A Culture-First Approach (*Alzheimer Society of Canada*)
- Cultural Adaptation of MINT Memory Clinics: Improving Equitable Access to High-Quality Dementia Guidance for Older Canadians (*Centre for Family Medicine Family Health Team*)
- Dementia Guidelines for Regional and Indigenous Populations in Northern British Columbia: Consultation, Calibration, and Creation of Community and College Curricula (*College of New Caledonia*)
- Emotion-Based Dementia Care Training for First Responders (*Regional Municipality of Peel*)
- *IncludeMe™ Dementia Edition for Caregivers: The engaging, interactive and transformative educational experience that prepares Canadians facing caregiver responsibilities for someone diagnosed with Dementia (*Iris the Dragon*)

- Maamwesying North Shore Community Health Services Indigenous-Led Collaborative Community-Based Memory Clinics (*Maamwesying North Shore Community Health Services*)
- *Online Dementia Guidance Resource Hub for Chinese Communities in Canada (*Yee Hong Centre for Geriatric Care*)

Provincial/Territorial Online Dementia Information Resources

- A Hub for Dementia and Awareness in New Brunswick (*New Brunswick Department of Health*)
- Digital Dementia Resource for the Yukon (*Government of Yukon, Department of Health and Social Services*)

Projects with the World Health Organization

- Accelerating the implementation of the global action plan on the public health response to dementia 2017–2025 (*World Health Organization*)
- Strengthening global efforts for dementia risk reduction (*World Health Organization*)

Dementia Community Investment (DCI) projects

Emerging Stream—Projects are based on some evidence; funding is used to develop, implement and evaluate the intervention.

- Building Capacity for Meaningful Participation by People Living with Dementia (*University of British Columbia*)
- Ce qui nous lie ~ What connects us: A mixed methods ethnography to evaluate an intersectoral participatory approach for sustainable community-based initiatives to destigmatize dementia (*CIUSSS du Centre-Ouest-de-L'île de Montréal*)
- Community-based music intervention as a means to enhance health and wellbeing of people living with dementia and bring support to their family and caregivers (*University of Ottawa*)
- Cummings Centre Therapeutic Dementia Care Program (*Cummings Jewish Centre for Seniors*)
- Dementia Dialogue Podcast Network (*Lakehead University*)
- *Dementia-Friendly Canada (*Alzheimer Society of Canada*)
- Dementia Lifestyle Intervention for Getting Healthy Together (DELIGHT) (*University of Waterloo*)
- Des collectivités en soutien à la trajectoire de vie des personnes allochtones et autochtones atteintes de démence (*Centre de recherche sur le vieillissement de Sherbrooke*)
- Ethno-Cultural and Linguistically Based Support Services to People Living with Dementia (*COSTI Immigrant Services*)
- Empowering Dementia Friendly Communities—Hamilton and Haldimand (*Hamilton Council on Aging*)
- Intergenerational and Mobile In-Community Interventions to Support People Living with Dementia and those at risk (*Cape Breton University*)
- Inuvialuit Settlement Region Dementia Awareness and Intervention (*Inuvialuit Regional Corporation*)

- L'approche par le plaisir en milieu communautaire : créer des environnements accueillants pour les personnes avec des atteintes cognitives (*Société Alzheimer de Granby et région*)
- Living with Dementia in Rural First Nations Communities: A Health and Wellness Project (*University of Manitoba*)
- New Brunswick Dementia Friendly Initiative (*The New Brunswick Association of Nursing Homes*)
- *Supporting a Circle of Care: A Culturally Informed Support Group and Toolkit for Indigenous Caregivers of People Living with Dementia (*Native Women's Association of Canada*)
- Supporting Family Caregivers of Persons Living with Dementia: Effectiveness and Sustainability of My Tools 4 Care-In Care (*University of Alberta*)
- *The Integration, Optimization and Promotion of Inclusive Approaches for 2SLGBTQI+ People Living With Dementia and their Caregivers (*Egale Canada*)

Advanced Stream—Projects that have strong evidence of effectiveness; funding is used to support scale up and expansion of reach to new populations/jurisdictions/sectors.

- An Action Guide for Building Capacity: Supporting Meaningful Participation of People Living with Dementia (*University of British Columbia*)
- Engagement & Empowerment Groups: Place-based community organizing for dementia inclusive communities, Six Nations, Hamilton, Haldimand, Halton (*Hamilton Council on Aging*)
- Enhancing Minds in Motion® as a Virtual Program Delivery Model for People Living with Dementia and Their Care Partners (*Alzheimer Society of Ontario*)
- Evaluating co-designed tools for strong partnerships in the dementia care triad (*Saint Elizabeth Health Care*)
- *Expansion of the Dementia-Friendly Canada Initiative (*Alzheimer's Society of Canada*)
- Implementing Computer Interactive Reminiscing and Conversation Aid in Canada (CIRCA-CA) (*University Health Network*)
- Mobilizing and Equipping Community Based Organizations to Promote Awareness and Support for Person-Centered Care for People Living with Dementia and their Caregivers (*Institute for Health System Transformation and Sustainability*)
- Moving, Eating, and Living Well (*University of Waterloo*)
- Our Dementia Journey Journal (*Saint Elizabeth Health Care*)
- Tech-empowered Healthy Living for Seniors with Dementia (*Human Endeavor Inc.*)
- Ten Online Modules Over Ten Weeks for Adult Learners (TOTAL) eLearning for Family/Friend Caregivers of Persons Living with Dementia (PLWD) (*McGill University*)
- Using Therapeutic and culture-based approaches to support the well-being of care partners of Red River Metis living with dementia (*Manitoba Métis Federation*)

Knowledge Hub

- *The Canadian Dementia Learning and Resource Network (CDLRN) (*Schlegel-UW Research Institute for the Aging*)

Enhanced Dementia Surveillance Initiative (EDSI) projects

- A comprehensive and holistic approach to dementia surveillance in Canada (*Schlegel-UW Research Institute for Aging*)
- *A National Indigenous dementia surveillance initiative — A feasibility study (Part 1) (*McMaster University*)
- A National Indigenous dementia surveillance initiative — A feasibility study (Part 2) (*McMaster University*)
- *Ascertaining dementia and surveillance of risk factors in the Canadian Longitudinal Study on Aging (*McMaster University*)
- Canadian Chronic Disease Surveillance System case capture and dementia prevalence in longterm care settings (*Participants: British Columbia, Ontario and Quebec*)
- Climate change surveillance for chronic health effects in populations: Enhanced activities focused on dementia (*University of Alberta*) — Amendment
- *Dementia in long-term care and home care settings: An in-depth data exploration and analysis of the Canadian Institute for Health Information's data holdings (*Canadian Institute for Health Information)*
- Disease and mortality trajectory among Canadians with dementia (*Participants: British Columbia, Ontario, Prince Edward Island and Quebec*)
- Exploring linkage opportunities to enrich Canadian Chronic Disease Surveillance System data (*Participants: British Columbia and Quebec*)
- Health surveillance of community-dwelling, person-with-dementia and caregiver dyads (*LIFE Research Institute, University of Ottawa*)
- Homelessness Counts: Exploring dementia in people experiencing homelessness (*Lawson Health Research Institute*) — Amendment
- National Dementia Caregiver Surveillance through First Link®: A Pilot Project (*Alzheimer Society of Canada*)
- *Population Health Model (POHEM), a microsimulation model for dementia projections (*Health Analysis Division, Statistics Canada*)
- *The implementation of the "Canadian Primary Care Sentinel Surveillance Network Data Presentation Tool" in primary care clinics to enhance the surveillance, prevention and management of chronic disease: Phase 3 (*Queen's University*) — Amendment
- Total and average costs of health care resources utilized by people living with dementia (*Ottawa Hospital Research Institute*)

Appendix C: Trends in risk factors across Canada

Dementia risk and protective factors among Canadians

TABLE 1: Percentage of Canadians with modifiable dementia risk/protective factors over time

Dementia risk or protective factor	Percentage (%) of Canadians with factor (Year 1)	Percentage (%) of Canadians with factor (Year 2)	Trend[29,30]	Source[31,32,33]
% of population (aged 20+) that reports having less than a high school **education**[34,35]	12.2 (2016)	8.2 (2022)	Better[36]	Canadian Community Health Survey (CCHS), 2016 (CCDI); Custom tabulations by BELD/CSAR, 2022
% of population (aged 20+) with diagnosed **hypertension** (high blood pressure)	23.7 (2016–2017)	22.4 (2021–2022)[37]	Better	Canadian Chronic Disease Surveillance System (CCDSS), 2016–2017; 2021–2022
% of population (aged 12+) that reports being current **smokers** (daily or occasional)	16.9 (2016)	11.6 (2022)	Better[38]	CCHS, 2016; 2022
% of population (aged 18–79) with elevated **blood cholesterol**	18.4 (2014–2015)	14.0 (2018–2019)	No statistically significant change	Canadian Health Measures Survey (CHMS), 2014–2015; 2018–2019
% of population (aged 12+) that reports heavy **drinking**[39]	19.0 (2016)	19.7 (2022)	No statistically significant change[40]	CCHS, 2016; 2022
% of population (aged 18–79) that reports obtaining the recommended amount of daily **sleep**[41]	61.8 (2009–2011)	64.9 (2014–2015)	No statistically significant change	CHMS, 2009–2011; Canadian Chronic Disease Indicators (CCDI) 2014–2015
% of population (aged 20+) with diagnosed **stroke**	2.6 (2016–2017)	2.6 (2021–2022)[42]	No statistically significant change	CCDSS, 2016–2017; 2021–2022
% of population (aged 20+) with diagnosed **diabetes**	10.2 (2016–2017)	10.6 (2021–2022)[43]	Worse	CCDSS, 2016–2017; 2021–2022
% of adults (aged 18+) that are living with **obesity** (self-reported, adjusted BMI)[44]	26.5 (2016)	30.0 (2022)	Worse[45]	CCHS, 2016; 2022

Dementia risk or protective factor	Percentage (%) of Canadians with factor (Year 1)	Percentage (%) of Canadians with factor (Year 2)	Trend[29,30]	Source[31,32,33]
% of population (aged 18+) who report accumulating at least 150 minutes of moderate-to-vigorous **physical activity** each week, in bouts of 10 minutes or more[46,47]	58.5 (2016)	53.9 (2021)	Worse	CCHS, 2016; 2021
% of population (aged 12+) that reports a "very strong" or "somewhat strong" sense of belonging to their local community (**social isolation** is a dementia risk factor)[48]	68.8 (2016)	64.5 (2022)	Worse[49]	CCHS, 2016; 2022

Dementia risk and protective factors across Canada

TABLE 2A: Dementia risk factors across Canada[50,51,52]

Dementia risk factor	Source[53,54,55]	National	AB	BC	MB	NB	NFL	NWT
% of population (aged 20+) with diagnosed **diabetes**	CCDSS (2021–2022)	10.6	10.3	10.4	12.5	N/A	11.8	N/A
% of population (aged 12+) that reports heavy **drinking**[56]	CCHS (2022)	19.7	20.7	18.9	21.4	21.3	25.0	N/A
% of population (aged 20+) that reports having less than a high school **education**[57,58]	CCHS (2022)	8.2	8.0	6.2	10.1	11.4	12.6	N/A
% of population (aged 20+) with diagnosed **hypertension** (high blood pressure)	CCDSS (2021–2022)	22.4	24.4	21.8	28.3	N/A	29.3	N/A
% of population (aged 18+) that are living with **obesity** (self-reported, adjusted BMI)[60]	CCHS (2022)	30.0	31.1	25.5	33.7	43.2	41.9	N/A
% of population (aged 12+) that reports being current **smokers** (daily or occasional)	CCHS (2022)	11.6	11.4	8.9	11.7	13.2	16.3	N/A
% of population (aged 20+) with diagnosed **stroke**	CCDSS (2021–2022)	2.6	2.4	2.6	3.0	N/A	2.1	N/A

Dementia risk factor	Source[53,54,55]	National	NS	NU	ON	PEI	QC	SK	YK
% of population (aged 20+) with diagnosed **diabetes**	CCDSS (2021–2022)	10.6	10.4	9.1	11.6	9.8	8.6	N/A	9.1
% of population (aged 12+) that reports heavy **drinking**[56]	CCHS (2022)	19.7	21.5	N/A	18.1	23.6	21.4	19.9	N/A
% of population (aged 20+) that reports having less than a high school **education**[57,58]	CCHS (2022)	8.2	7.8	N/A	6.7	10.3[59]	10.9	9.1	N/A
% of population (aged 20+) with diagnosed **hypertension** (high blood pressure)	CCDSS (2021–2022)	22.4	24.8	23.1	23.0	23.3	19.1	N/A	21.7
% of population (aged 18+) that are living with **obesity** (self-reported, adjusted BMI)[60]	CCHS (2022)	30.0	35.9	N/A	29.7	36.4	28.6	38.4	N/A
% of population (aged 12+) that reports being current **smokers** (daily or occasional)	CCHS (2022)	11.6	15.1	N/A	10.8	15.5	13.2	14.9	N/A
% of population (aged 20+) with diagnosed **stroke**	CCDSS (2021–2022)	2.6	1.8	3.6	2.7	3.0	2.4	N/A	2.1

TABLE 2B: Dementia protective factors across Canada[61]

Dementia protective factor	Source[62,63]	National	AB	BC	MB	NB	NFL	NWT
% of population (aged 18+) that report accumulating at least 150 minutes of moderate-to-vigorous **physical activity** each week, in bouts of 10 minutes or more[64,65]	CCHS (2021)	53.9	58.0	62.4	52.8	50.6	50.3	N/A
% of population (aged 12+) that reports a "very strong" or "somewhat strong" sense of belonging to their local community (**social isolation** is a dementia risk factor)[66]	CCHS (2022)	64.5	64.7	65.3	67.9	69.9	74.5	N/A

Dementia protective factor	Source[62,63]	National	NS	NU	ON	PEI	QC	SK	YK
% of population (aged 18+) that report accumulating at least 150 minutes of moderate-to-vigorous **physical activity** each week, in bouts of 10 minutes or more[64,65]	CCHS (2021)	53.9	55.4	N/A	51.5	51.3	51.7	52.2	N/A
% of population (aged 12+) that reports a "very strong" or "somewhat strong" sense of belonging to their local community (**social isolation** is a dementia risk factor)[66]	CCHS (2022)	64.5	69.0	N/A	65.4	68.4	59.6	70.2	N/A

Endnotes

1 Please note that some of the websites this report links to may not have content in both English and French.

2 A caregiver is defined as a person who provides care and support to a person living with dementia, and who is not a paid care provider. A caregiver is likely to be a relative, close friend, neighbour or volunteer. Support provided by a caregiver may include assisting with the activities of daily living and helping with advance care planning.

3 Please note that many *Canadian Chronic Disease Surveillance System* (CCDSS) measures were influenced by the COVID-19 pandemic in 2021–2022, which should be considered when interpreting data for that year. Further, New Brunswick, Northwest Territories and Saskatchewan data were not available for 2021–2022.

4 Public Health Agency of Canada. *Canadian Chronic Disease Surveillance System (CCDSS), Data Tool 2000–2022, 2024 Edition*. Government of Canada. 2024. Available from: **https://health-infobase.canada.ca/ccdss/data-tool/Index**

5 In 2020, the medical journal the Lancet reported that 12 potentially modifiable risk factors account for approximately 40% of dementia cases worldwide, each at different life stages. This **report** and other related research findings help to provide insight into how Canadians may be able to reduce their risk of developing dementia at all stages of life. For example, the World Health Organization released **guidelines** in 2019 that includes additional risk factors.

6 *Canadian Longitudinal Study on Aging* (CLSA) data is collected from a longitudinal cohort, and there are some considerations when generalizing to the general population. For more information on the methods and limitations, see the following publications: **McMaster University** and the **University of Western Ontario**. These studies used different study populations, implementation of life course stages and methodologies. As such, the study cohorts used in this research are not entirely representative of the Canadian ethno-cultural landscape. Lastly, the population attributable fractions were weighted to account for overlap between risk factors.

7 University of Western Ontario (UWO) used the following age groups: early life analyses was performed on those aged 45 years and older; midlife analyses were performed on 45 to 64 years; and later life analyses were performed on those aged 65 years and older. McMaster University used the all ages (45 years and older) for all analyses.

8 This is an approach used to estimate the proportion of dementia cases that could be avoided by completely preventing a specific risk factor, in either the specific life stage (UWO study) or in the 45 years and older population (McMaster University study).

9 McMaster University's study (in line with the **2020 report of the Lancet Commission on Dementia**) also explored air pollution as a potentially modifiable risk factor. The University of Western Ontario's study did not include air pollution, but instead examined sleep disturbances as an emerging risk factor.

[10] A confidence interval (CI) is a statistical measurement of the precision of an estimate, with narrow CIs indicating greater precision than those that are wider. The 95% CI shows an estimated range of values that is likely to include the true value 19 times out of 20.

[11] The ratio is calculated by dividing the prevalence among individuals in the lowest income group by the prevalence among individuals in the highest income group. A prevalence ratio greater than one indicates that individuals in the lowest income group have a higher prevalence compared to those in the highest income group.

[12] The nominated principal investigator (NPI) is the grantee, or awardee, of a Canadian Institutes of Health Research (CIHR) funding application. The grantee is responsible for leading the intellectual direction of the proposed activities as well as coordinating the financial and administrative aspects of the grant.

[13] Caregivers who are distressed are defined as primary caregivers who express feelings of distress, anger or depression and/or any caregiver who is unable to continue in their caring activities.

[14] Experiencing daily pain includes severe and not severe.

[15] Chi-square tests were applied. Significance level set at 0.05, indicating whether any changes in trends are statistically significant.

[16] Parts of these materials are based on data and information provided by the Canadian Institute for Health Information (CIHI). However, the analyses, conclusions, opinions and statements expressed herein are those of the author and not necessarily those of CIHI. This data was drawn from the Resident Assessment Instrument – Home Care© – Home Care Reporting System, fiscal year 2022–2023. It is representative of people living with dementia receiving home care in British Columbia (all regions except Northern Health), the Yukon, Alberta (except the Calgary Zone), and Newfoundland and Labrador.

[17] Canadian Institute for Health Information. *Understanding health care trajectories of people living with dementia*. Canadian Institute for Health Information. 2024. Available from: **https://www.cihi.ca/en/understanding-health-care-trajectories-of-people-living-with-dementia**

[18] Peer-reviewed articles can be found in the **International Journal of Qualitative Methods** and **Journal of Medical Internet Research Research Protocols**; conference proceedings were published in **Innovation in Aging**.

[19] This total includes web hits and views on the DemSCAPE website (14,214), event clicks, downloads, and shares (28,445), those who viewed journal articles (1,701), newsletter subscribers (18), YouTube video views (788), social media follows (1,360), and impressions on LinkedIn (28,009).

[20] Other steps included: Supporting initiatives like this one, keeping oneself physically and cognitively active, participating in events that create awareness about dementia, writing letters to city council asking for more funding, continuing to attend dementia-related courses and discussions, and supporting knowledge translation and mobilization of dementia-inclusive community research.

[21] Benefits to caring for individuals living with dementia in their communities include familiarity of settings, culturally appropriate care, the ability to speak in one's own language, continuity in families and friends, and the maintenance of Elders' roles in the community (National Collaborating Centre for Aboriginal Health, 2018).

[22] This amount represents exclusively the investment allocated through pillar one of the Brain Health and Cogntive Impairment in Aging (BHCIA) Research Initiative, as shown in figure 6, namely, CIHR Institute of Aging Strategic Programs. It does not include the funding for the Canadian Consortium on Neurodegeneration in Aging (CCNA) or the Dementia Research and Innovation Funders Alliance, represented by the second and third pillar respectively in figure 6.

[23] All public opinion reports are published online on the Library and Archives Canada site.

[24] Nanos Reseach for the Public Health Agency of Canada. *Stigma Related to Dementia in Canada: Final Report*. Government of Canada. 2023. Available from: **https://epe.bac-lac.gc.ca/100/200/301/pwgsc-tpsgc/por-ef/public_health_agency_canada/2023/103-22-e/index.html**

[25] Respondents were asking the following question: Other than Canadian, to which ethnic or cultural groups do you consider yourself to belong?

[26] Earnscliffe Strategy Group for the Public Health Agency of Canada. *Understanding Canadians' Attitudes and Knowledge to Promote Safe and Supportive Dementia-Inclusive Communities: Final Report*. Public Health Agency of Canada. 2023. Available from: **https://epe.bac-lac.gc.ca/100/200/301/pwgsc-tpsgc/por-ef/public_health_agency_canada/2023/133-22-e/index.html**

[27] Earnscliffe, Strategy Group for the Public Health Agency of Canada. *Understanding Canadians' Attitudes and Knowledge to Promote Safe and Supportive Dementia-Inclusive Communities: Final Report*. Public Health Agency of Canada. 2023. Available from: **https://epe.bac-lac.gc.ca/100/200/301/pwgsc-tpsgc/por-ef/public_health_agency_canada/2023/133-22-e/index.html**

[28] Earnscliffe, Strategy Group for the Public Health Agency of Canada. *Understanding Canadians' Attitudes and Knowledge to Promote Safe and Supportive Dementia-Inclusive Communities: Final Report*. Public Health Agency of Canada. 2023. Available from: **https://epe.bac-lac.gc.ca/100/200/301/pwgsc-tpsgc/por-ef/public_health_agency_canada/2023/133-22-e/index.html**

[29] For *Canadian Community Health Survey* (CCHS) data: Significant differences for these indicators are based on 95% confidence intervals (i.e., "better" or "worse" if confidence intervals between two points do not overlap AND "no significant change" is confidence intervals overlap between two data points). Note that data interpretation of significant differences based on confidence intervals is a conservative approach. The current table includes an estimate using the latest data available (e.g., 2022 CCHS for alcohol heavy drinking, education, smoking, and community belonging). Please note that the CCHS underwent a second major redesign in 2022. The redesign centred on a change in data collection mode. As a result, caution should be used when comparing data between 2022 and previous cycles.

[30] For CCDSS data: Trend analyses were calculated using the Joinpoint software, which tests the statistical significance of the trend over different time periods ($P \leq .05$). A statistically increasing trend was labelled as "worse" and on the contrary, a statistically decreasing trend was labelled as "better." If the trend was not statistically significant ($P > .05$), it was reported as "no significant change."

[31] Statistics Canada. *Table 13-10-0096-01 Health characteristics, annual estimates*. Government of Canada. 2023. Available from: **https://doi.org/10.25318/1310009601-eng**

[32] Public Health Agency of Canada. *Canadian Chronic Disease Surveillance System (CCDSS), Data Tool 2000–2019, 2021 Edition*. Government of Canada. 2023. Available from: **https://health-infobase.canada.ca/ccdss/data-tool/Index**

[33] Custom tabulations by PHAC for education indicator using CCHS 2022.

[34] All data from the CCHS and *Canadian Health Measures Survey* (CHMS) are representative of Canada, excluding the territories. There are other exclusions in the CCHS that limit its generalizability: "Persons living on reserves and other Aboriginal settlements in the provinces; full-time members of the Canadian Forces; the institutionalized population, children aged 12 to 17 that are living in foster care, and people living in the Quebec health regions of Région du Nunavik and Région des Terres-Cries-de-la-Baie-James."

[35] All rates are age-standardized to the 2011 Canadian population.

[36] The CCHS underwent a second major redesign in 2022. The redesign centred on a change in data collection mode. As a result, caution should be used when comparing data between 2022 and previous cycles.

[37] Many CCDSS measures were influenced by the COVID-19 pandemic in 2020–2021 and 2021–2022. As the data should be interpreted with caution, the trend analysis did not include these two years.

[38] The CCHS underwent a second major redesign in 2022. The redesign centred on a change in data collection mode. As a result, caution should be used when comparing data between 2022 and previous cycles.

[39] Heavy alcohol drinking is defined as binge drinking (i.e., five or more drinks for males and four or more drinks for females, on a single occasion) at least once a month in the past year.

[40] The CCHS underwent a second major redesign in 2022. The redesign centred on a change in data collection mode. As a result, caution should be used when comparing data between 2022 and previous cycles.

41 All rates are age-standardized to the Canadian population. All data from the CCHS and CHMS are representative of Canada, excluding the territories.

42 Many CCDSS measures were influenced by the COVID-19 pandemic in 2020–2021 and 2021–2022. As the data should be interpreted with caution, the trend analysis did not include these two years.

43 Many CCDSS measures were influenced by the COVID-19 pandemic in 2020–2021 and 2021–2022. As the data should be interpreted with caution, the trend analysis did not include these two years.

44 Obesity among adults is defined as a body mass index (BMI) ≥ 30.0 kg/m^2. This indicator is based on self-reported weight and height. BMI calculations are adjusted to respondent bias to more closely approximate measured values. Excludes pregnant women and persons less than 3 feet tall or greater than 6 feet 11 inches.

45 The CCHS underwent a second major redesign in 2022. The redesign centred on a change in data collection mode. As a result, caution should be used when comparing data between 2022 and previous cycles.

46 This physical activity measure uses self-reported data from the CCHS. Self-reported estimates of physical activity, which report perceived time, are often significantly higher than device-based measures, which measure actual movement. Self-report and device-measured data provide complementary information about different aspects of physical activity but should not be used interchangeably.

47 Numbers come from Statistics Canada—crude rates: Although in surveillance we continue recommending using measured data from the CHMS (also note that the physical activity recommendations within the *Canadian 24-Hour Movement Guidelines* changed in 2020 to "without bouts"), we recognize that self-reported data (currently only available "with bouts") as presented in this indicator is still useful to examine trends in particular before and during the COVID-19 pandemic.

48 Sense of belonging to a local community illustrates the social attachment of individuals with communities. Social isolation tends to be detrimental to health, while social engagement and attachments are associated with positive health outcomes (both physical and mental).

49 The CCHS underwent a second major redesign in 2022. The redesign centred on a change in data collection mode. As a result, caution should be used when comparing data between 2022 and previous cycles.

50 For Tables 2a and 2b, provincial and territorial differences observed with the CCDSS should be interpreted with caution. Although differences are statistically significant, methodological differences may explain the patterns observed in addition to actual differences in the health status of the populations. For instance, differences in detection and treatment practices, as well as differences in data coding, remuneration models and shadow billing practices likely play a role in the patterns observed.

51 Provincial and territorial data for blood cholesterol and daily sleep are not available.

52 Territorial estimates based on the 2021 CCHS are unavailable. Data are only representative in the territories after two years of data collection. The latest estimates for territories come from the 2019–2020 CCHS (**https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1310011301**). The next territorial estimates will come from the 2021–2022 CCHS.

53 Statistics Canada. *Table 13-10-0096-01 Health characteristics, annual estimates*. Government of Canada. 2023. Available from: **https://doi.org/10.25318/1310009601-eng**

54 Public Health Agency of Canada. *Canadian Chronic Disease Surveillance System (CCDSS), Data Tool 2000–2019, 2021 Edition*. Government of Canada. 2023. Available from: **https://health-infobase.canada.ca/ccdss/data-tool/Index**

55 Custom tabulations by the Public Health Agency of Canada (PHAC) for education indicator using the 2022 CCHS.

56 Heavy alcohol drinking is defined as binge drinking (i.e., five or more drinks for males and four or more drinks for females, on a single occasion) at least once a month in the past year.

[57] All data from the CCHS and CHMS are representative of Canada, excluding the territories. There are other exclusions in the CCHS that limit its generalizability: "Persons living on reserves and other Aboriginal settlements in the provinces; full-time members of the Canadian Forces; the institutionalized population, children aged 12 to 17 that are living in foster care, and people living in the Quebec health regions of Région du Nunavik and Région des Terres-Cries-de-la-Baie-James."

[58] All rates are age-standardized to the 2011 Canadian population.

[59] Estimate should be interpreted with caution due to high variability.

[60] Obesity among adults is defined as a body mass index (BMI) ≥ 30.0 kg/m^2. This indicator is based on self-reported weight and height. BMI calculations are adjusted to respondent bias to more closely approximate measured values. Pregnant women excluded.

[61] Territorial estimates based on the 2021 CCHS are unavailable. Data are only representative in the territories after two years of data collection. The latest estimates for territories come from the 2019–2020 CCHS (**https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1310011301**). The next territorial estimates will come from the 2021–2022 CCHS.

[62] Statistics Canada. *Table 13-10-0096-01 Health characteristics, annual estimates*. Government of Canada. 2023. Available from: **https://doi.org/10.25318/1310009601-eng**

[63] Public Health Agency of Canada. *Canadian Chronic Disease Surveillance System (CCDSS), Data Tool 2000–2019, 2021 Edition*. Government of Canada. 2023. Available from: **https://health-infobase.canada.ca/ccdss/data-tool/Index**

[64] This physical activity measure uses self-reported data from the CCHS. Self-reported estimates of physical activity, which report perceived time, are often significantly higher than device-based measures, which measure actual movement. Self-report and device-measured data provide complementary information about different aspects of physical activity but should not be used interchangeably.

[65] Numbers come from Statistics Canada—crude rates: Although in surveillance we continue recommending using measured data from CHMS (also note that the physical activity recommendations within the *Canadian 24-H Movement Guidelines* changed in 2020 to "without bouts"), we recognize that self-reported data (currently only available "with bouts") as presented in this indicator is still useful to examine trends in particular before and during the COVID-19 pandemic.

[66] Sense of belonging to a local community illustrates the social attachment of individuals with communities. Social isolation tends to be detrimental to health, while social engagement and attachments are associated with positive health outcomes (both physical and mental).

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