Integrating Olfactive Science into Senior Care: Standardized Sensory Intake for Early Cognitive Detection

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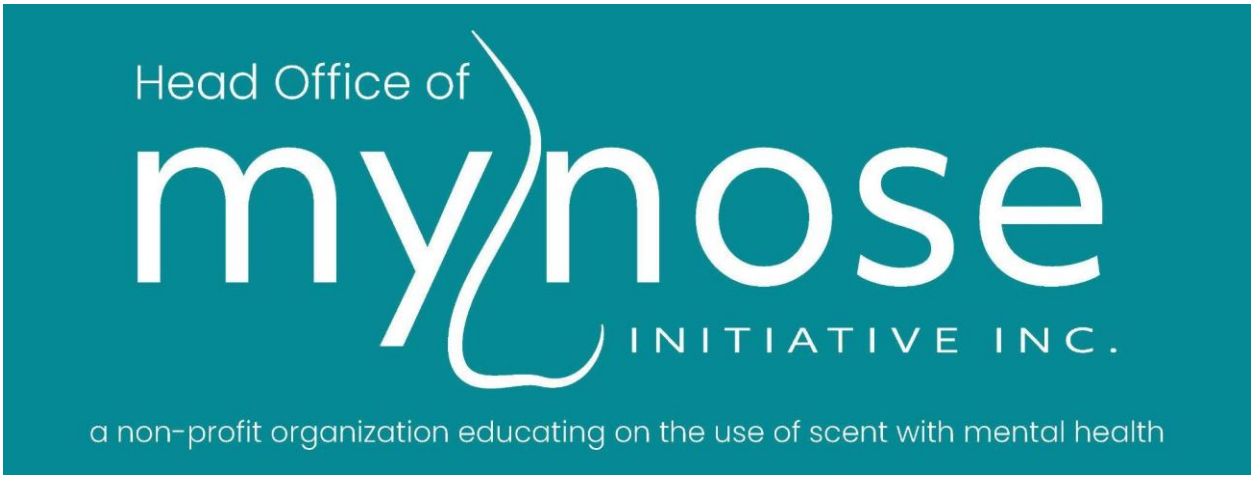

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1. Executive Summary

This white paper recommends that Ontario integrate olfactory health (sense of smell) into long-term care resident assessment and care planning as part of a more comprehensive, resident-centered approach to dementia care. Despite growing evidence demonstrating the relationship between olfactory function, cognition, nutrition, emotional well-being, and memory, smell remains largely absent from long-term care assessment frameworks. Integrating olfactory health into existing care practices represents an opportunity to strengthen dementia-supportive environments, enhance quality of life, and expand the use of person-centered, non-pharmacological interventions across Ontario's long-term care sector.

Ontario's long-term care system faces increasing pressure as population aging and dementia prevalence continue to rise, creating greater demand for high-quality care while increasing financial and operational challenges (Nichols et al., 2022; Alzheimer Society of Canada, 2025; National Institute on Ageing, 2024). Existing assessment frameworks routinely evaluate vision and hearing but overlook olfactory health, despite its recognized role in flavour perception, nutritional intake, autobiographical memory, emotional regulation, environmental familiarity, and overall well-being (Herz, 2016; Olofsson et al., 2021). Addressing this gap supports Ontario's commitment to resident-centered care and dementia care modernization.

Drawing upon current scientific literature, long-term care policy, dementia research, and evidence supporting non-pharmacological interventions, this paper demonstrates why olfactory health should become a recognized component of resident assessment and individualized care planning. It examines the relationship between olfactory function and cognitive health, reviews existing policy gaps, highlights emerging evidence supporting olfactory-informed care, and presents practical recommendations for implementation within Ontario's long-term care system.

This paper recommends incorporating olfactory health into standardized resident intake assessments, developing individualized sensory histories to guide care planning, implementing scent-based interventions that reflect residents' personal and cultural experiences, supporting staff education on olfactory-informed dementia care, and expanding provincial pilot programs to evaluate implementation across diverse long-term care settings. Together, these recommendations establish a practical framework for integrating olfactory health into Ontario's existing long-term care system.

Integrating olfactory health into long-term care policy represents an opportunity to strengthen dementia care, improve resident quality of life, support more individualized and culturally responsive care, and advance Ontario's broader goals of resident-centered care and long-term care modernization. By recognizing smell as an essential component of sensory health, Ontario can lead the development of a more comprehensive and innovative model of dementia care.

2. Introduction & Policy Context (1–2 pages)

A. Ontario LTC Landscape

Ontario's long-term care (LTC) system is experiencing significant pressure as a result of rapid population aging, increasing clinical complexity among residents, and persistent workforce shortages. Seniors aged 75 and older represent the fastest-growing demographic in the province, driving increased demand for residential care, home care, and specialized dementia services. At the same time, LTC residents are entering care later in life with more complex medical and cognitive needs, placing additional strain on facilities and staff. These pressures have exposed systemic gaps in capacity, coordination, and quality of care, particularly highlighted during the COVID-19 pandemic.

In response, Ontario has pursued a series of legislative and policy reforms aimed at strengthening accountability, improving quality of life for residents, and expanding system capacity. Central to this reform is the Fixing Long-Term Care Act, 2021, which establishes a modernized legislative framework for LTC homes. The Act reinforces the *Residents' Bill of Rights*, emphasizing dignity, respect, privacy, and person-centered care as foundational principles. It also introduces stronger compliance mechanisms, increased inspection powers, and requirements for better staffing and care standards. This legislation reflects a shift toward prioritizing the lived experience of residents alongside clinical outcomes.

Complementing this framework, Bill 14: Support for Seniors and Caregivers Act signals a broader recognition of the role of caregivers and the need for integrated support across the continuum of aging. The Act promotes coordination between health and social services, aiming to improve transitions between home care, community care, and LTC. This alignment is particularly important given the growing reliance on informal caregivers and the need to reduce avoidable institutionalization.

Dementia care remains a central policy priority within Ontario's LTC landscape. The province's Developing Ontario's Dementia Strategy (2016) highlights the increasing prevalence of Alzheimer's disease and related dementias and underscores the need for early diagnosis, caregiver support, and specialized LTC environments. Given that a majority of LTC residents live with some form of cognitive impairment, this strategy informs staffing, training, and environmental design considerations across the sector.

Beyond LTC homes, Ontario's broader legislative environment includes the Retirement Homes Act, 2010, which governs privately operated retirement residences and establishes standards for safety, care, and consumer protection. While distinct from LTC, retirement homes are an important part of the continuum, often serving as an alternative or transitional setting for older adults who do not yet require full LTC services.

Finally, Ontario's Action Plan for Seniors (2017) provides a strategic lens through which these initiatives can be understood. The plan emphasizes aging in place, community engagement, and independence while recognizing the need for a robust LTC system for those with higher care needs. Together, these policies illustrate Ontario's multi-pronged approach: expanding capacity, improving quality, and integrating services, all while advancing resident-centered care.

B. Current Intake Assessments

Ontario's long-term care homes conduct resident intake processes upon admission to guide individualized care planning and identify residents' physical, cognitive, behavioural, and social care needs. Current assessments commonly collect information related to cognition, communication, mobility, behaviour, vision, hearing, activities of daily living, medical history, and overall functional status. However, there is no standardized requirement to assess or document olfactory (smell) and gustatory (taste) function or to routinely collect information about residents' meaningful scent experiences, smell preferences, or changes in olfactory function. As a result, these important aspects of sensory health are often overlooked or addressed inconsistently across long-term care homes.

This lack of standardized sensory assessment represents a significant gap in resident-centered care. Without consistent intake questions related to smell and taste, care teams may miss opportunities to identify residents experiencing sensory impairment, recognize changes that may be associated with cognitive decline, or develop individualized care strategies that incorporate familiar and specific scents that would benefit overall wellness. Standardizing these questions during admission would create a consistent process for identifying residents with smell and taste dysfunction while establishing a foundation for appropriate follow-up, including individualized sensory care planning and olfactory assessment where appropriate.

The need for a more comprehensive intake process is becoming increasingly important as Canada's population ages and dementia prevalence continues to rise. Long-term care homes are experiencing growing demand for dementia-supportive programming, behavioural supports, and quality-of-life-focused interventions while managing increasing operational and healthcare pressures (Nichols et al., 2022; Alzheimer Society of Canada, 2025). Strengthening resident assessments through standardized sensory questions represents one practical opportunity to support more individualized, person-centered care.

Emerging research has demonstrated that olfactory function is associated with memory, emotional processing, nutrition, environmental familiarity, and cognitive health, yet smell remains largely absent from standardized resident intake practices (Herz, 2016; Olofsson et al., 2021). Research has also shown that familiar scents can support emotional well-being, appetite, and behavioural outcomes among individuals living with dementia (D'Andrea et al., 2024). Incorporating standardized questions related to smell and taste into resident admission assessments would enable long-term care homes to identify sensory impairments earlier, inform individualized care planning, and support the implementation of evidence-informed scent-based interventions where appropriate.

3. Understanding Sensory Health & Cognitive Decline (2–3 pages)

A. Overview of Sensory Function

Sensory health refers to the functioning of systems that allow individuals to interact with and interpret their environment, including vision, hearing, taste, touch, and smell. Olfactory function (sense of smell) is increasingly recognized as neurologically significant because of its close relationship with the limbic system, the region of the brain involved in memory, emotional processing, and behaviour. Unlike other sensory systems, olfactory pathways have a uniquely direct relationship with memory and emotional processing, contributing to familiarity, comfort, and autobiographical recall (Herz, 2016).

Scientific understanding of olfactory function has been strengthened by foundational neurological research. Buck and Axel's (1991) landmark study, *A novel multigene family may encode odorant receptors: A molecular basis for odor recognition*, established the biological basis of smell by identifying olfactory receptors and explaining how odour signals are processed and transmitted to the brain. This work significantly advanced understanding of olfactory pathways and supports the neurological relevance of smell within broader discussions surrounding cognition and sensory health.

Recent advances in olfactory neuroscience have further strengthened scientific understanding of the importance of smell as a complex and highly organized sensory system. While researchers have long known that odor molecules interact with specialized receptors within the nasal cavity, the mechanisms by which the brain interprets and organizes thousands of distinct smells remained incompletely understood for decades. In 2026, researchers published the first comprehensive map of olfactory receptor organization, demonstrating that smell receptors are arranged in highly structured spatial patterns rather than being randomly distributed throughout the nose. The study identified molecular signaling mechanisms that guide receptor placement and revealed a close relationship between receptor organization in the nasal cavity and corresponding processing regions in the brain (Datta et al., 2026). These findings provide additional evidence that olfaction is a sophisticated neurological system with precise biological architecture, reinforcing growing recognition of smell as an important component of sensory, cognitive, and neurological health.

Research examining scent perception has also contributed to understanding how olfactory experiences may differ across individuals. Turin's (1996) *A spectroscopic mechanism for primary olfactory reception* explored how scent molecules may generate different sensory experiences, contributing to broader scientific discussions surrounding individualized responses to smell and environmental familiarity. Although more theoretical than clinical, this work provides important background for understanding how scent experiences may differ between residents in long-term care environments.

Dr. Rachel Herz's research has further strengthened understanding of smell and emotional processing. In *The role of odor-evoked memory in psychological and physiological health* (2016), Herz examined how odours may activate emotionally significant autobiographical

memories and influence psychological well-being. Herz's work suggests that familiar scents may contribute to emotional grounding, memory recall, familiarity, and comfort, particularly among individuals experiencing cognitive decline. These findings are especially relevant within long-term care settings where residents living with dementia may experience confusion, emotional withdrawal, or distress.

Similarly, Gilbert's *What the Nose Knows: The Science of Scent in Everyday Life* (2008) examines how smell influences behaviour, mood, emotional responses, memory, and everyday functioning, often outside conscious awareness. Gilbert challenges the perception that smell is secondary or cosmetic, instead positioning olfactory experiences as meaningful contributors to quality of life, environmental comfort, and behavioural engagement. This perspective is particularly relevant within long-term care settings, where sensory deprivation, emotional disengagement, and environmental unfamiliarity may influence resident well-being.

In long-term care environments, sensory health is already partially incorporated into resident care planning through hearing and vision assessments. However, olfactory health is rarely considered despite emerging literature suggesting potential relevance to cognition, emotional well-being, appetite, and environmental familiarity among older adults.

B. Existing Research Landscape

Emerging research has explored associations between olfactory decline and neurodegenerative conditions, including Alzheimer's disease, Parkinson's disease, and mild cognitive impairment (Olofsson et al., 2021). In *Olfaction and Aging: A Review of the Current State of Research and Future Directions*, Olofsson and colleagues examined how smell dysfunction may be associated with age-related cognitive decline and neurodegenerative disease. Several studies reviewed suggest that reduced olfactory function may occur alongside, or in some cases precede, cognitive symptoms, though evidence remains insufficient to support smell assessment as a standalone clinical screening tool.

Canadian neurological research has also explored smell dysfunction in relation to Parkinson's disease. Research associated with Ottawa Hospital has examined olfactory decline as a possible early neurological indicator in Parkinson's disease, contributing to growing scientific interest in smell as part of broader conversations surrounding cognitive and neurological health.

Research has also examined the role of olfactory stimulation within dementia-care-supportive environments. In *Olfactory stimulation for people with dementia: A rapid review*, D'Andrea et al. (2024) examined scent-related interventions and reviewed associations with emotional well-being, cognition, behavioural symptoms, sleep quality, resident engagement, and food intake among older adults living with dementia. Similarly, Cha et al. (2022), in *Effects of olfactory stimulation on cognitive function and behavior problems in older adults with dementia: A systematic literature review*, explored whether olfactory stimulation may be associated with improvements in cognition, emotional regulation, agitation, and behavioural symptoms in dementia-care environments.

Additional literature has examined how scent may influence emotional well-being and quality of life. Lavender has emerged as one of the more commonly studied scents in dementia literature, particularly in relation to calming effects, behavioural regulation, anxiety reduction, and sleep support. Rosemary has been explored in relation to memory and attention, peppermint in relation to alertness and cognitive stimulation, bergamot and jasmine in relation to mood and emotional regulation, and citrus-related compounds such as limonene in relation to emotional activation and stress reduction. While findings remain mixed and evolving, these studies contribute to broader discussions surrounding sensory enrichment and non-pharmacological supportive care.

Public awareness surrounding olfactory health also increased substantially during the COVID-19 pandemic, when anosmia (smell loss) emerged as one of the most widely recognized symptoms of infection. Research examining post-COVID olfactory dysfunction has linked anosmia with reduced appetite, depression, anxiety, social isolation, and diminished quality of life, reinforcing broader discussions surrounding olfactory health as more than sensory perception alone.

Collectively, emerging research suggests that olfactory health may warrant further consideration within long-term care and dementia-care-supportive environments, particularly as healthcare systems increasingly prioritize resident-centered, quality-of-life-focused, and non-pharmacological approaches to care. These findings contribute to broader discussions regarding whether sensory-supportive and olfactory-health-informed approaches may complement emotional well-being, familiarity, engagement, and overall quality of life among residents living with dementia.

C. Limitations in Existing Research

Despite growing scientific and policy interest in olfactory health, important limitations remain within the evidence base. Current literature examining olfactory dysfunction and cognitive decline is largely associative rather than causal. While studies such as *Olfaction and Aging: A Review of the Current State of Research and Future Directions* (Olofsson et al., 2021) suggest links between smell dysfunction and neurodegenerative conditions including Alzheimer's disease, Parkinson's disease, and mild cognitive impairment, findings are not sufficiently consistent to support smell assessment as a standalone diagnostic or predictive tool.

Similarly, research examining scent-related interventions in dementia-care-supportive environments remains heterogeneous. Reviews such as *Olfactory stimulation for people with dementia: A rapid review* (D'Andrea et al., 2024) and *Effects of olfactory stimulation on cognitive function and behavior problems in older adults with dementia* (Cha et al., 2022) report potential associations with emotional regulation, sleep, behavioural symptoms, agitation, and resident engagement. However, intervention methods, scent types, exposure durations, participant populations, and outcome measures vary substantially across studies, limiting standardization and broader implementation.

The work of researchers such as Rachel Herz and Avery Gilbert highlights an additional complexity: smell perception is highly individualized and influenced by lived experience, emotional memory, cultural background, and personal familiarity. A scent that evokes comfort or positive memory for one resident may have little relevance—or potentially negative associations—for another. Similarly, Luca Turin's work on scent perception reinforces the complexity of individual responses to different scent molecules, while Linda Buck's foundational biological research emphasizes that olfactory processing itself is neurologically complex.

Operational considerations also remain relevant within long-term care settings. Practical challenges such as staffing realities, scent sensitivities, healthcare scent-free policies, palliative care environments, infection prevention standards, and implementation feasibility would require careful consideration before any olfactory-health-informed approaches could be integrated into care planning frameworks.

For these reasons, current evidence should be interpreted cautiously. Rather than supporting immediate system-wide implementation, the literature suggests that olfactory health may warrant further research, pilot exploration, stakeholder engagement, and policy dialogue as part of broader efforts to strengthen resident-centered and quality-of-life-focused long-term care environments.

4. Policy Gap Analysis (1–2 pages)

Key Question: *Should Ontario's senior care system implement a standardized sensory-based questionnaire as part of routine assessments to improve early detection of cognitive decline?*

Ontario's long-term care homes conduct resident intake assessments to identify care needs, guide individualized care planning, and support resident safety, well-being, and quality of life. These assessments commonly address cognition, communication, behaviour, mobility, hearing, vision, activities of daily living, medical history, and functional status. However, intake questions related to smell and taste are not consistently standardized or routinely included. This creates a clear policy gap: residents may enter long-term care with unrecognized olfactory or gustatory impairment, leaving care teams without important information that directly affects daily care.

This gap matters because smell and taste are connected to several core areas of resident well-being. When sensory changes are not identified at intake, homes may miss issues affecting appetite, nutrition, food enjoyment, hydration, environmental awareness, emotional memory, comfort, and quality of life. For residents living with dementia, missed smell and taste impairments may also limit opportunities to use familiar scents, culturally meaningful aromas, and sensory-based interventions to support recognition, emotional grounding, appetite, and behavioural well-being. In practical terms, if care teams do not ask about smell and taste, they cannot plan for smell and taste loss.

The consequence of doing nothing is that long-term care homes continue to treat sensory health as mainly vision and hearing, while overlooking smell and taste as part of comprehensive

resident care. This leaves residents with possible sensory impairments unidentified, prevents early care planning around nutrition and comfort, and limits the ability of staff to use sensory history as a tool for resident-centered dementia care. The absence of standardized intake questions also means that homes lack consistent information to determine which residents require follow-up, scent testing, dietary support, or individualized scent-based care strategies.

This problem is urgent because Ontario's long-term care system is already under pressure from population aging, rising dementia prevalence, staffing challenges, and increasing demand for non-pharmacological approaches that improve quality of life. As Ontario continues to modernize long-term care, including dementia programming and resident-centered care planning, intake assessment must become more comprehensive. Standardizing smell and taste questions at admission is a practical, low-cost policy change that can help identify residents with sensory impairments, guide appropriate follow-up, and strengthen individualized care from the beginning of residency.

This white paper recommends that Ontario standardize sensory-based intake questions across long-term care homes, with specific attention to smell and taste. These questions should identify whether residents have experienced changes in smell or taste, whether these changes affect appetite or food enjoyment, whether certain scents are comforting or distressing, and whether culturally or personally meaningful smells should be incorporated into care planning. By addressing this policy gap, Ontario can improve resident assessment, strengthen dementia-supportive care, and make quality-of-life planning more complete, practical, and resident-centered.

5. Stakeholder & Operational Considerations (1–2 pages)

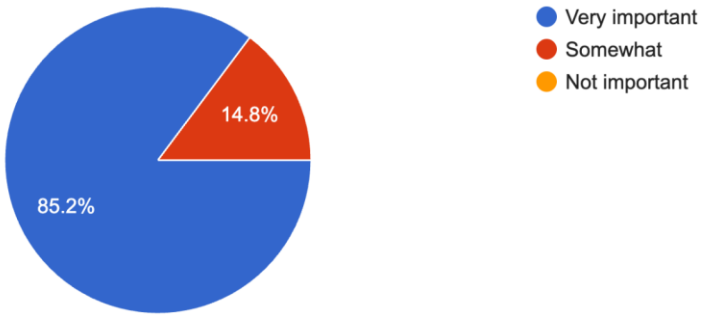
A large-scale survey was conducted, which gathered insights from 121 healthcare professionals and stakeholders, including members of the Canadian Association of Retired Persons (CARP). This survey highlights a significant opportunity to enhance long-term care through improved sensory screening. The results of these findings argue for a more comprehensive approach to senior health, where proactive screening serves as a cornerstone for improving quality of life and clinical management.

Key Takeaways

- **Strong Support for Modernizing LTC Assessments**: There is overwhelming consensus on the need for modernization. 85% of respondents (103 out of 121) believe it is "Very important" for governments to include new health indicators like sensory loss in LTC assessments.

How important is it for governments to modernize long-term care assessments to include new health indicators like sensory loss?

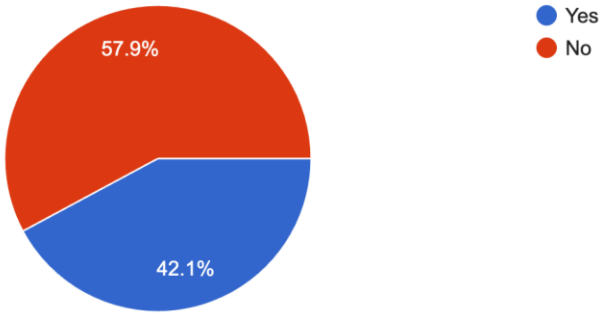
122 responses



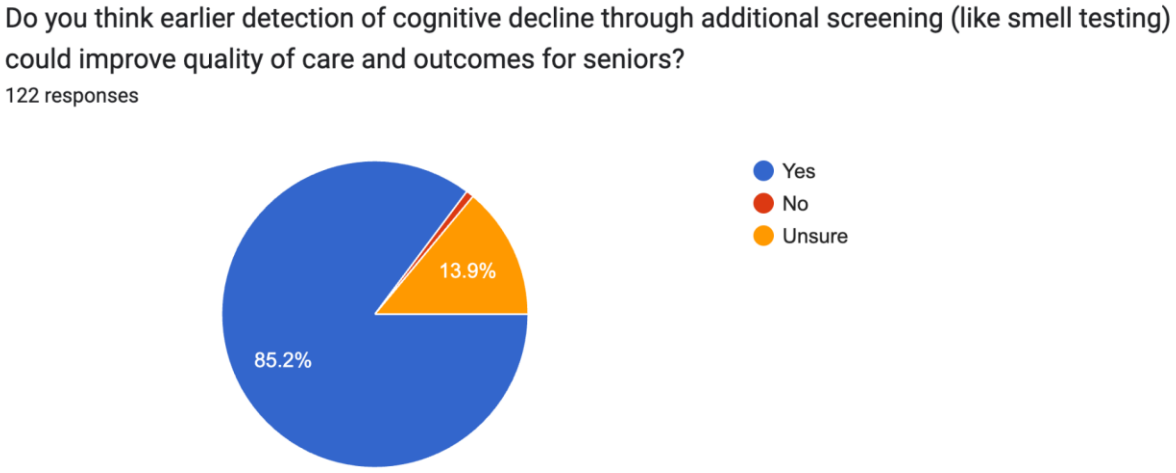
- **Awareness Gap Regarding Early Indicators**: Despite the high support for testing, there is a notable lack of prior knowledge. 57% of respondents (69 out of 121) were not aware that loss of smell can be an early sign of conditions like dementia, Alzheimer's, or Parkinson's before participating in the survey.

Before today, were you aware that loss of smell can be an early sign of conditions like dementia, Alzheimer's, or Parkinson's?

121 responses



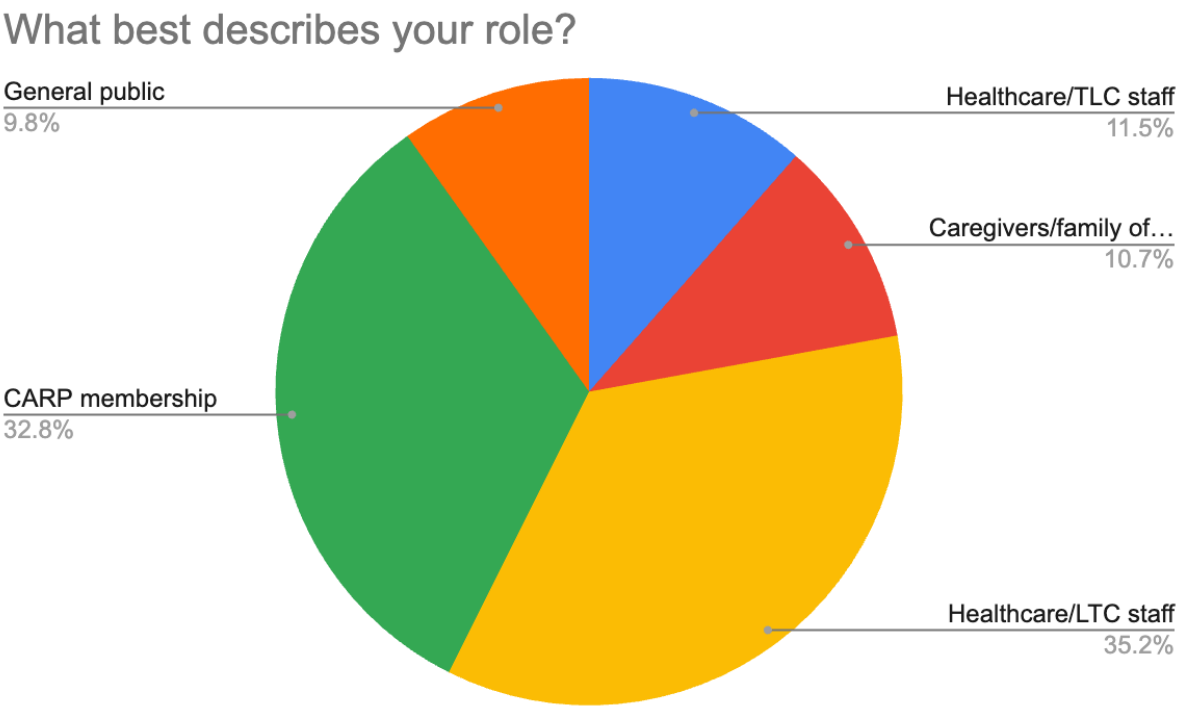
- **Potential for Improved Care**: Respondents strongly believe in the clinical benefits of earlier detection. 85% (103 out of 121) agree that additional screening like smell testing could improve the quality of care and outcomes for seniors.



Respondent Profile

The survey captured perspectives from various stakeholders, with the largest group being healthcare professionals.

- **Healthcare/LTC staff: 57 respondents**
- **CARP membership: 39 respondents**
- Caregivers/family of seniors: 13 respondents
- General public: 12 respondents



6. Potential Policy Implications (1–2 pages)

Earlier Identification Conversations

One potential policy implication of olfactory-health-informed approaches involves earlier conversations surrounding cognitive decline and neurodegenerative disease risk within long-term care and senior support systems. Research suggests that olfactory dysfunction may emerge during the early stages of neurodegenerative disease and, in some cases, years before more visible cognitive symptoms become apparent (Attems et al., 2015; Murphy, 2019). Olfactory impairment has been identified as one of the earliest non-motor symptoms of Parkinson's disease and is also associated with mer's disease and Lewy body dementia (Doty, 2012; Fullard et al., 2017). In some individuals, smell loss may precede a Parkinson's disease diagnosis by several years, highlighting its potential value as an early clinical indicator of neurological change.

Rather than serving as a diagnostic tool, smell-based observations may provide an additional opportunity to identify residents who could benefit from closer monitoring, family discussions, or referral for further cognitive assessment. Within Ontario's aging population, where dementia prevalence is expected to increase substantially over time, early supportive interventions may contribute to more proactive care planning and individualized support (Ontario Ministry of Health, 2023). While olfactory impairment alone cannot diagnose a neurodegenerative condition, incorporating smell-related observations into routine assessments may help identify sensory changes that warrant further evaluation.

Olfactory-health-informed approaches may also encourage staff and caregivers to initiate conversations regarding sensory changes that might otherwise go unnoticed. Because smell loss often receives less attention than vision or hearing decline, incorporating smell-related observations into care discussions could support more comprehensive resident assessments and foster greater awareness of potential neurological changes among aging adults.

Enhanced Intake Comprehensiveness

Current resident intake processes in Ontario long-term care homes are designed primarily to collect information necessary for admission, regulatory compliance, clinical documentation, and the development of an initial care plan. While assessments commonly include information related to medical history, medications, cognition, mobility, nutrition, hearing, vision, and activities of daily living, there is no standardized requirement to ask residents about changes in smell or taste. As a result, sensory impairments affecting these senses may go unidentified from the time a resident enters long-term care.

This gap has important implications for resident care. Without standardized questions related to smell and taste, care teams cannot consistently identify residents experiencing sensory impairment or determine whether these changes are affecting appetite, food enjoyment, nutrition, emotional well-being, or overall quality of life. The absence of this information also

limits the ability to develop individualized care plans that incorporate sensory-based interventions or monitor changes in sensory function over time.

Ontario should address this gap by introducing standardized smell and taste questions into the resident intake process. Every resident should be asked a consistent set of evidence-informed questions regarding changes in smell and taste, the impact of these changes on eating and daily life, and whether familiar scents play an important role in comfort or emotional well-being. Standardizing these questions would ensure that sensory health is assessed consistently across long-term care homes rather than relying on individual staff practices or informal conversations.

Once sensory impairments are identified through standardized intake, care teams can incorporate relevant sensory information into individualized care planning. This may include documenting meaningful scent preferences, culturally significant aromas, favourite foods, cooking traditions, or other sensory experiences that support familiarity, comfort, and engagement for residents living with dementia. Beginning with a standardized assessment process ensures that these individualized interventions are informed by consistent and complete resident information rather than occurring only when sensory concerns happen to be recognized.

The value of incorporating smell and taste into resident intake extends beyond documenting personal preferences. Olfactory stimuli have a direct neurobiological connection to the limbic system, the region of the brain responsible for memory, emotion, and behaviour. Unlike other sensory pathways, olfactory information reaches these brain regions rapidly, allowing familiar scents to evoke autobiographical memories and influence emotional and physiological responses (Herz, 2016). Emerging research has also demonstrated that specific scent compounds can produce measurable neurological and behavioural effects. For example, limonene, commonly found in citrus fruits, has been associated with improved mood and reduced stress responses, while camphor has been investigated for its stimulating properties and effects on alertness. Other scent compounds, including lavender and linalool, have been studied for their potential to reduce agitation, promote relaxation, and improve sleep among older adults, including individuals living with dementia (D'Andrea et al., 2024).

These findings demonstrate that scent is not simply a matter of personal preference but represents a biologically active sensory input with potential implications for resident care. Because smell influences appetite, emotional regulation, behaviour, memory, and environmental familiarity, failing to assess smell and taste during admission means that long-term care homes may overlook information that could inform individualized care planning and non-pharmacological interventions. Without standardized intake questions, residents experiencing olfactory or gustatory impairments may remain unidentified, and opportunities to incorporate evidence-informed scent-based strategies into dementia care may be missed.

Standardizing smell and taste questions at intake would establish a consistent process for identifying residents with sensory impairments while also creating an opportunity to collect information about scents that have demonstrated personal or therapeutic relevance. Once these

sensory profiles are established, care teams can determine whether scent-based interventions are appropriate and tailor them to the resident's history and needs rather than relying on generalized approaches.

Family members play an important supporting role in this process because they often possess knowledge about scents that have been meaningful throughout a resident's life, including favourite foods, cooking traditions, gardens, religious practices, occupations, and other experiences associated with positive memories. Collecting this information during admission enables families to contribute to evidence-informed care planning while helping care teams select sensory interventions that are both personally meaningful and grounded in the neurobiological relationship between smell, memory, and emotional well-being.

Ontario's long-term care intake process does not consistently collect information about residents' culturally meaningful smell and taste experiences. As a result, care teams often lack information that could support culturally responsive, individualized care planning. This gap is particularly important because smell is closely linked to memory, emotion, identity, and behaviour through the limbic system. Without standardized sensory questions during admission, opportunities to incorporate culturally meaningful scents into dementia care and quality-of-life planning may be missed.

This issue is becoming increasingly important as Ontario's population continues to diversify. According to the 2021 Statistics Canada Census, South Asians represent approximately 10.8% of Ontario's population, Chinese individuals account for approximately 5.8%, and Indigenous peoples represent approximately 2.9% of the province's population (Statistics Canada, 2021). Despite this diversity, access to culturally responsive long-term care remains uneven across the province. As of 2026, Ontario has no operational long-term care homes specifically dedicated to South Asian seniors, although Niwaas Long-Term Care in Brampton is expected to become the province's first Sikh-Punjabi long-term care home. By comparison, Chinese communities currently have access to seven culturally and linguistically responsive long-term care homes, primarily operated by Yee Hong Centre for Geriatric Care and Mon Sheong Foundation. Indigenous-focused long-term care homes also remain limited, with four currently operating across Ontario according to AdvantAge Ontario's 2025 Member Directory.

These disparities demonstrate that many residents will continue to receive care in long-term care homes that are not specifically designed around their cultural background. Standardizing smell and taste questions during resident intake provides a practical way to support culturally responsive care regardless of where a resident lives. Rather than relying solely on specialized facilities, every long-term care home could collect sensory information that reflects each resident's cultural experiences, personal history, and identity as part of individualized care planning.

Scientific evidence supports this approach. Because olfactory information is processed directly through the limbic system, familiar scents can evoke autobiographical memories, influence emotional regulation, affect appetite, and shape behavioural responses (Herz, 2016). Research has also demonstrated that specific scent compounds produce measurable physiological and

neurological responses. For example, limonene, commonly found in citrus fruits, has been associated with improved mood and reduced stress responses, while linalool, a major component of lavender, has been studied for its calming effects and potential to reduce agitation and improve sleep. These findings demonstrate that scent represents a biologically active component of care rather than simply a personal preference.

Once standardized sensory assessments are incorporated into resident intake, care teams can document culturally and personally meaningful scent experiences that inform individualized interventions. For example, a South Asian resident may identify familiar aromas associated with cardamom, chai spices, sandalwood, or traditional cooking. A Chinese resident may identify jasmine tea, traditional herbal preparations, or culturally significant cooking ingredients. An Indigenous resident may identify cedar, sage, sweetgrass, pine, or land-based environmental scents connected to cultural practices and healing. These examples illustrate the importance of collecting individualized sensory histories rather than making assumptions based on culture alone. The purpose of standardized intake questions is to ensure that each resident's personal sensory experiences are identified, documented, and incorporated into care planning in a consistent, evidence-informed manner.

Resident-Centered Care Through Scent

The incorporation of scent into care planning may align with broader movements toward resident-centered and person-directed care in Ontario long-term care homes. Smell has a uniquely direct neurological relationship with emotional processing and autobiographical memory because olfactory pathways connect closely with regions of the brain associated with memory and emotion, including the amygdala and hippocampus (Herz, 2016).

Research conducted by Rachel Herz suggests that odours often evoke emotionally significant autobiographical memories more directly than many other sensory experiences and may contribute to emotional regulation, familiarity, and psychological well-being (Herz, 2016). For individuals living with dementia, familiar scents may potentially help foster reassurance, reduce confusion, and strengthen emotional grounding in environments that may otherwise feel unfamiliar.

In this context, scent-informed and individualized sensory-care approaches may represent one possible avenue for integrating meaningful smells into resident-centered care using natural and familiar scents that hold personal significance to the individual. Potential applications may include calming routines, emotional comfort strategies, appetite stimulation, or memory engagement activities. However, further evaluation would likely be necessary to determine effectiveness across diverse long-term care settings.

Quality-of-Life Considerations

Quality of life is a central objective of dementia care within Ontario's long-term care system. Individuals living with dementia commonly experience confusion, agitation, anxiety, emotional withdrawal, sleep disturbances, reduced appetite, and social disengagement. Research demonstrates that olfactory function is closely linked to memory, emotional processing, behaviour, and appetite through its direct neurological connection to the limbic system. Familiar scents have been shown to support memory recall, emotional regulation, mood, and engagement in some individuals living with dementia (Herz, 2016; Rocha et al., 2022).

Despite this growing evidence, smell and taste are not routinely assessed during resident intake. As a result, long-term care homes may not identify residents experiencing olfactory or gustatory impairments or recognize how these changes affect appetite, nutrition, emotional well-being, environmental familiarity, and overall quality of life. Without standardized sensory assessment, individualized care planning remains incomplete because an important dimension of resident health is not consistently documented.

Standardizing smell and taste questions during admission would ensure that sensory impairments are identified early and incorporated into resident care planning. Establishing a consistent intake process would provide care teams with information that can support nutritional planning, quality-of-life initiatives, dementia-supportive care, and future sensory-based approaches where appropriate. By first identifying sensory deficits and documenting meaningful smell and taste experiences, Ontario's long-term care homes can develop more comprehensive, resident-centered care plans that better reflect each resident's individual needs and lived experiences.

Evidence Supporting Smell Therapy in Long-Term Care

Findings from the Smelling Pink Scent Therapy™ program implemented across Kindera Living long-term care homes demonstrate that structured smell therapy was associated with measurable improvements in resident outcomes. Reported findings included increased resident engagement and emotional responsiveness, reductions in anxiety and agitation ranging from 65–83%, improvements in sleep, appetite, and communication, and a 30% reduction in anxiety-related medication use in some participating homes. Staff also reported stronger connections with residents and more meaningful care experiences through individualized smell therapy integrated into daily care routines (MY NOSE INITIATIVE Inc. o/a Smelling Pink.

These documented outcomes demonstrate that smell therapy can function as a structured non-pharmacological approach within dementia care. Rather than replacing existing clinical care, the program complemented routine care by supporting emotional regulation, behavioural management, communication, and resident engagement. Program implementation emphasized individualized smell selection, structured documentation, and ongoing tracking of resident responses, reinforcing the importance of resident-specific assessment and consistent evaluation (MY NOSE INITIATIVE Inc. o/a Smelling Pink).

The documented improvements in resident engagement, behavioural responsiveness, emotional regulation, sleep, appetite, and communication demonstrate why smell therapy is relevant to Ontario's long-term care system. These outcomes align with provincial priorities to improve resident quality of life and expand evidence-informed, non-pharmacological approaches to dementia care. They also reinforce the importance of standardized smell and taste assessment during resident intake so that sensory impairments and meaningful smell preferences are identified early and incorporated into individualized care planning.

The Smelling Pink Scent Therapy™ report also presents an organizational financial analysis of program implementation. According to MY NOSE INITIATIVE Inc. o/a Smelling Pink, the observed improvements in cognition, emotional regulation, resident engagement, and reduced anxiety-related medication use were estimated to generate approximately $264,240 in annual operational savings for a 30-resident long-term care home (MY NOSE INITIATIVE Inc. o/a Smelling Pink). These estimates are presented by the organization as program-based financial projections associated with the documented resident outcomes.

7. Indigenous & Culturally Appropriate Care Considerations (1 page)

Smell plays an important role in memory, emotional processing, and identity through its direct connection to the limbic system (Herz, 2016). For Indigenous residents living with dementia, plant-based scents associated with the land, family, food, medicines, and cultural practices may evoke familiarity, emotional grounding, and autobiographical memories that support well-being and person-centered care. Because dementia can affect language, memory, and communication, familiar olfactory cues may become increasingly important in maintaining a resident's sense of identity and connection.

Many Indigenous communities have longstanding relationships with plants and natural environments that carry cultural, spiritual, and historical significance. Depending on the Nation, region, family, and individual, familiar aromas such as cedar, sweetgrass, Labrador tea, pine, spruce, balsam fir, or forest-floor environments may be associated with the land, healing, family, and community. These culturally resonant plant-based scent cues have the potential to support familiarity and emotional comfort within long-term care settings when they are identified through individualized resident assessment and developed in partnership with residents, families, Elders, and Knowledge Keepers.

It is important to distinguish these olfactory supports from Indigenous ceremonial practices. Smudging is a sacred ceremony involving smoke, intention, prayer, and Nation-specific protocols. Smell therapy and scent diffusion do not replicate, replace, or serve as substitutes for smudging or other Indigenous ceremonies. Rather, culturally appropriate plant-based scent cues may provide opportunities to support familiarity, memory, and emotional comfort when ceremonial smoke is not feasible within the physical environment of a long-term care home.

This distinction is particularly relevant because many long-term care homes cannot routinely accommodate indoor smoke due to fire regulations, ventilation requirements, and infection

prevention policies. While some homes have created designated ventilation rooms or outdoor ceremonial spaces to support Indigenous spiritual practices, these options are not universally available across Ontario. In these circumstances, individualized olfactory supports using culturally meaningful plant-based scents may offer a complementary approach to resident-centered care while respecting the distinct cultural and spiritual significance of ceremonial practices.

Any implementation of Indigenous plant-based olfactory supports must be guided by Indigenous leadership and cultural safety principles. Smell associations are not universal across First Nations, Inuit, or Métis communities, nor are they shared uniformly within Nations or families. Decisions regarding appropriate plant-based scents should therefore be made collaboratively with residents, families, Elders, and Knowledge Keepers to ensure that care remains culturally respectful, individualized, and grounded in Indigenous knowledge rather than assumptions. Incorporating these resident-identified olfactory cues into standardized intake assessments and individualized care planning provides one practical opportunity to strengthen culturally responsive dementia care while respecting the diversity of Indigenous experiences and traditions.

One important consideration involves ceremonial practices such as smudging, which may involve sacred medicines including sage, cedar, sweetgrass, or tobacco. In some long-term care settings, fire safety regulations and ventilation requirements may create barriers to traditional ceremonial practices. This raises important questions regarding how culturally meaningful sensory experiences can be supported respectfully within care environments. In situations where traditional practices are not feasible, culturally informed alternatives may warrant exploration, but only through meaningful consultation with Indigenous Elders, Knowledge Keepers, caregivers, and residents themselves. Such approaches should prioritize cultural safety and avoid substituting ceremonial practices in ways that may oversimplify or unintentionally diminish their meaning.

Beyond Indigenous communities, culturally diverse residents may similarly associate scent with identity, belonging, and lived experience. Smell is often closely connected to memory through family traditions, language, storytelling, food, caregiving, and spirituality. Emerging perspectives suggest that scent and language may share important relationships through autobiographical memory, particularly among older adults experiencing cognitive decline. Familiar scents may sometimes act as non-verbal prompts that evoke memories, emotions, or feelings of recognition even when verbal communication becomes more difficult (Herz, 2016).

For example, some South Asian residents may associate scents such as cardamom, chai spices, sandalwood, rose water, turmeric, eucalyptus, or familiar cooking aromas with home, caregiving traditions, spirituality, or family gatherings. In some cases, eucalyptus may also carry personal associations with comfort and wellness through steam remedies and caregiving practices. Similarly, some Chinese residents may connect with scents like jasmine tea, vertiver, and eucalyptus. Research involving jasmine has suggested possible associations with relaxation and emotional well-being, although evidence specific to dementia care settings remains limited.

Additionally, scents containing high limonene content (found in citrus) have been shown to improve sleep and relaxation in neurodiverse individuals.

At the same time, culturally meaningful care should not be interpreted as culturally standardized care. Not all residents from the same cultural background will respond positively to the same scents, nor should assumptions be made regarding preferences based solely on ethnicity or language. Personal experiences, migration histories, religion, trauma, family dynamics, and individual sensory preferences all shape how scents are interpreted and experienced. A scent that evokes comfort for one resident may hold no significance, or even negative associations, for another.

As Ontario's long-term care system continues to evolve, culturally appropriate olfactory-health-informed care may be best understood as an individualized and resident-centered process rather than a standardized intervention. Instead of implementing uniform scent programs, future approaches may benefit from personalized sensory profiles that consider a resident's cultural background, language, meaningful life experiences, spiritual practices, and sensory preferences.

For this reason, any future exploration of smell-informed care should prioritize meaningful engagement with residents, caregivers, healthcare providers, Indigenous partners, seniors' organizations, and ethnocultural communities. Co-development and consultation would likely be necessary to ensure that future pilot initiatives are respectful, culturally safe, inclusive, and aligned with resident-centered care principles.

Given the evolving nature of this policy area, culturally appropriate smell-based care should be framed as an area requiring collaboration, engagement, and ongoing dialogue rather than standardized implementation.

8. Policy Options / Recommendations (1–2 pages)

Given the emerging nature of olfactory-health-informed care, policy development in this area should be approached cautiously and grounded in evidence, resident-centered care principles, and meaningful stakeholder engagement. At present, smell-based and olfactory-health-informed approaches should not be viewed as replacements for established dementia care practices or cognitive assessment tools. Rather, they may represent a possible complementary avenue for exploration within Ontario's long-term care system. The following recommendations outline potential pathways for consideration while recognizing the need for further research, consultation, and evaluation.

Recommendation 1: Pilot Implementation of Standardized Sensory Assessment

Ontario should initiate pilot projects across selected long-term care homes to evaluate the implementation of standardized sensory assessment during resident intake. While emerging evidence supports the relationship between olfaction, memory, emotional regulation, and quality

of life among people living with dementia (Herz, 2016; Rocha et al., 2022), pilot implementation would provide Ontario-specific evidence regarding how standardized sensory assessment can be integrated into existing admission processes and individualized care planning.

Rather than focusing solely on smell therapy, pilot projects should evaluate system-level approaches that embed smell and taste assessment within routine long-term care practice. This would allow Ontario to assess implementation processes, staff experiences, resident outcomes, and operational feasibility before broader provincial adoption.

Priority areas for pilot implementation should include:

- The development and evaluation of standardized admission questions related to smell and taste, including history, changes in smell or taste, and personally meaningful or culturally significant scent experiences.
- The integration of smell and taste information into individualized resident care plans to support person-centered care.
- Education and training for long-term care staff on the role of olfaction in cognition, memory, emotion, behaviour, nutrition, and wellbeing.
- The implementation of individualized smell therapy informed by resident intake assessments and documented sensory histories.

Pilot evaluation should incorporate quantitative and qualitative outcome measures, including resident feedback, family perspectives, staff experiences, behavioural indicators, and quality-of-life measures. Because smell preferences are highly individualized and influenced by personal history, culture, and lived experience, pilot programs should emphasize resident-directed care planning and individualized sensory profiles rather than standardized scent protocols.

Pilot implementation would provide Ontario with practical evidence to inform province-wide adoption of standardized smell and taste assessment while establishing best practices for integrating individualized smell therapy into resident-centered dementia care.

Recommendation 2: Targeted Stakeholder Engagement to Inform Implementation

Prior to province-wide implementation, Ontario should undertake targeted stakeholder engagement to establish practical implementation parameters for standardized smell assessment within long-term care homes.

Engagement should focus on stakeholders directly involved in long-term care delivery and lived experience, including long-term care operators, frontline care teams, clinicians involved in geriatric and dementia care, family and unpaid caregivers, and residents where appropriate. Engagement should be structured to inform practical implementation questions, including how smell history can be documented within resident intake and care planning processes, what

education and training staff require, and how smell therapy can be appropriately incorporated into existing non-pharmacological dementia care practices.

Indigenous partners, Elders, and Knowledge Keepers should be engaged through culturally appropriate and Nation-specific processes to ensure that Indigenous plant-based scent cues, land-based knowledge, and ceremonial practices are approached respectfully and are not generalized across First Nations, Inuit, or Métis communities.

Stakeholder engagement should also establish implementation guidance related to resident autonomy, informed consent, documentation standards, and the appropriate use of smell-based approaches within long-term care. The objective is not to position smell therapy as a standalone care model, but to determine how standardized smell assessment and smell history can be responsibly integrated into existing resident-centered care systems.

Recommendation 3: Standardize Smell History Within Resident Intake and Care Planning

A practical and operationally relevant policy direction is to integrate a standardized smell history into existing resident intake and care planning processes across Ontario's long-term care homes.

Current intake assessments routinely document medical history, medications, cognition, functional status, nutrition, and psychosocial information; however, they do not document smell history, including preferences, or associations that may be relevant to person-centered care. Standardizing the intake process and assessment during admission would strengthen individualized care planning by ensuring this information is consistently identified and documented from the beginning of residency.

A standardized smell history should include:

- Smells associated with home, family life, food, or meaningful environments.
- Smells connected to comfort, familiarity, or emotional grounding.
- Favourite food-related, cooking, or environmental smells relevant to daily routines.
- Smell-related aversions or distressing triggers identified by residents or families.
- Personally or culturally meaningful smell associations that residents wish to maintain as part of daily life.
- Overall smell assessment, including the resident's current ability to detect, identify, and distinguish smells, as well as any known changes or loss of smell (e.g., reduced or absent sense of smell).

The purpose of documenting this information is to strengthen individualized care planning and support resident-centered dementia care. A standardized smell history would also provide care teams with information that can inform smell therapy, reminiscence activities, dining

experiences, and other existing non-pharmacological approaches while avoiding the creation of parallel or burdensome assessment processes.

Recommendation 4: Interdisciplinary Policy and Practice Dialogue on Smell in Dementia Care

Ontario should support structured interdisciplinary dialogue on the role of smell within dementia care and long-term care modernization.

This dialogue should be situated within existing provincial priorities related to quality of life, behavioural supports, and non-pharmacological dementia care rather than positioned as a separate policy area. Discussion should focus on practical implementation questions, including how standardized smell assessment can be integrated into resident intake, how smell history can support individualized care planning, how staff education can strengthen implementation, and how smell therapy can be incorporated into existing care practices.

Participation should include long-term care providers, clinicians with expertise in geriatric and dementia care, occupational and recreation therapists, researchers in neuroscience and dementia, health system planners, Indigenous health leaders, and organizations representing residents and caregivers. The emphasis should be on translating the growing evidence linking smell, memory, emotion, and behaviour into practical, ethical, culturally safe, and implementable approaches that strengthen resident-centered dementia care.

This dialogue should support the ongoing refinement of standardized smell assessment, care planning practices, workforce education, and implementation guidance as Ontario continues to strengthen dementia care and modernize its long-term care system.

9. Conclusion (1 page)

Ontario's long-term care system continues to evolve in response to population aging, increasing dementia prevalence, and a growing emphasis on resident-centered care and quality of life. This white paper examined the role of smell within dementia care and identified a policy gap within current resident intake and care planning practices. Although smell has well-established neurological connections to memory, emotion, appetite, and behaviour, smell history is not routinely assessed during admission to long-term care homes despite its potential relevance to individualized dementia care.

The evidence reviewed in this paper suggests that smell is an important yet underrecognized component of resident assessment. Research demonstrates associations between smell, autobiographical memory, emotional regulation, familiarity, and quality of life, while emerging evidence from long-term care settings indicates that individualized smell-based approaches are associated with improvements in resident engagement, emotional responsiveness,

communication, sleep, appetite, and behavioural outcomes. Together, these findings support further consideration of smell within existing resident-centered and non-pharmacological dementia care practices.

At the same time, the current evidence base does not support the widespread implementation of standardized smell-based interventions across Ontario's long-term care system. Existing research remains limited, implementation studies are few, and additional evaluation is needed to better understand long-term effectiveness, operational feasibility, and implementation within diverse long-term care environments. The strongest policy implication at this stage is not the immediate adoption of smell-based interventions, but the integration of standardized smell assessment into resident intake and individualized care planning, accompanied by pilot implementation, workforce education, stakeholder engagement, and continued evaluation.

Accordingly, this white paper recommends that Ontario prioritize the development of standardized smell assessment during resident admission, integrate smell history into individualized care planning, support pilot implementation within long-term care homes, and strengthen interdisciplinary collaboration to guide future policy development. These recommendations build upon existing resident-centered care frameworks and provide practical implementation pathways that can be evaluated within Ontario's long-term care system.

Smell should not be viewed as a replacement for established dementia assessment or care practices. Rather, it represents an additional source of resident information that can strengthen individualized care planning, support person-centered dementia care, and contribute to quality-of-life-focused approaches within long-term care. By integrating smell assessment into existing care processes and continuing to build the evidence base through structured implementation and evaluation, Ontario can take a practical, evidence-informed step toward strengthening dementia care for older adults living in long-term care.

10. Appendices

Include stakeholder engagement summaries, interview questions, survey framework, literature table, glossary, policy timeline

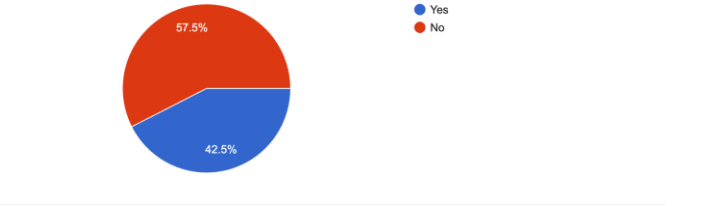
The survey was conducted at two LTC homes: Berkshire Care Centre in Windsor and Cooksville Care Centre in Mississauga. A digital survey was given to workers and volunteers at the centres via Google Form. The survey was also circulated among the members of The Canadian Association of Retired Persons (CARP) and the general public. The survey consists of 6 questions and received 121 responses.

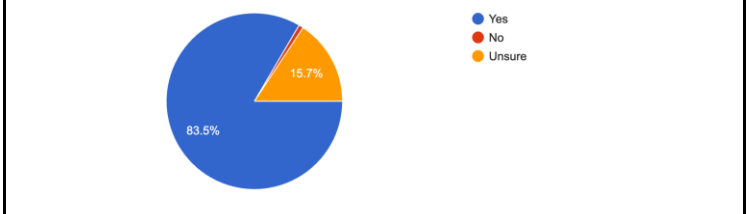
List of survey questions and response options:

1. Before today, were you aware that loss of smell can be an early sign of conditions like dementia, Alzheimer’s, or Parkinson’s?
    a. Yes
    b. No

2. Do you believe long-term care assessments should include smell (olfactory) testing, similar to hearing and vision checks?
    a. Yes
    b. No
    c. Unsure
3. Do you think earlier detection of cognitive decline through additional screening (like smell testing) could improve quality of care and outcomes for seniors?
    a. Yes
    b. No
    c. Unsure
4. How important is it for governments to modernize long-term care assessments to include new health indicators like sensory loss?
    a. Very important
    b. Somewhat
    c. Not important
5. Do you have a family member currently in long-term care?
    a. Yes
    b. No
6. What best describes your role?
    a. Healthcare/LTC staff
    b. Caregivers/family of seniors
    c. General public
    d. CARP membership

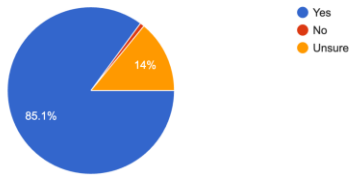
Survey responses:





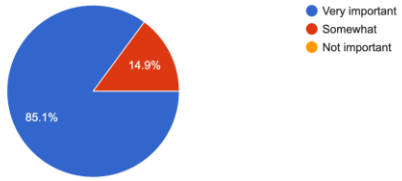
Do you think earlier detection of cognitive decline through additional screening (like smell testing) could improve quality of care and outcomes for seniors?

121 responses



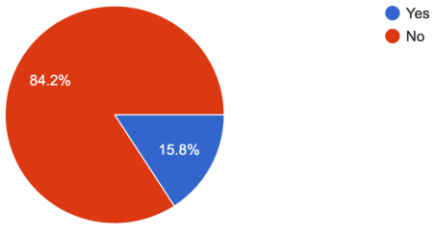
How important is it for governments to modernize long-term care assessments to include new health indicators like sensory loss?

121 responses

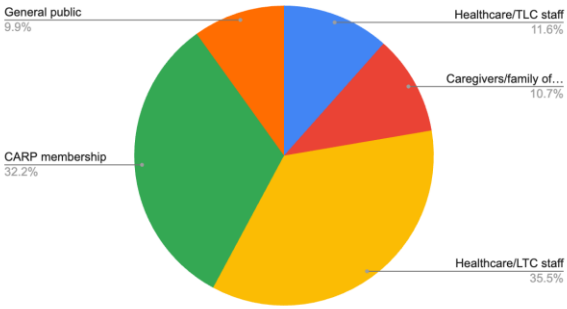


Do you have a family member currently in long-term care?

120 responses



What best describes your role?



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Research:

Research Gathering Framework

The research foundation for the white paper should focus on the relationship between olfactory health (sense of smell), cognitive health, dementia-care-supportive environments, and resident quality of life within long-term care settings. Research gathering should prioritize peer-reviewed healthcare literature, government reports, gerontology research, dementia-care frameworks, sensory neuroscience, and evidence related to non-pharmacological supports in senior care environments.

Research should emphasize cautious, evidence-based language and avoid overstating clinical conclusions. Olfactory health should be framed as an emerging area of interest within broader conversations surrounding sensory enrichment, resident-centered care, emotional well-being, and quality-of-life-focused interventions in long-term care settings.

Research Networks & Communities

The Olfactive Group (LinkedIn)
https://www.linkedin.com/groups/2397889/

The Olfactive Group may be useful for identifying emerging researchers, healthcare discussions, interdisciplinary collaborations, and contemporary perspectives surrounding olfactory science. While not a formal academic source, it may assist in identifying experts, institutions, and recent developments relevant to sensory neuroscience and olfactory-health-informed care.

Foundational Researchers to Prioritize

Dr. Rachel Herz

Specific article to prioritize:
Herz, R. S. (2016). *The role of odor-evoked memory in psychological and physiological health.*

What the article discusses:
This article examines how smell has a uniquely direct relationship with emotional processing and autobiographical memory. Herz explains that odours activate brain regions involved in memory and emotion more directly than many other senses, often triggering vivid emotional recall and familiarity. The article also discusses how smell influences emotional regulation, stress, mood, and psychological well-being.

Why this article should be included in the white paper:
This is one of the strongest foundational articles for explaining why olfactory health matters in dementia-care-supportive environments. Residents living with dementia often experience

confusion, distress, emotional withdrawal, and difficulty recognizing surroundings. Herz's work helps support the argument that familiar scents may contribute to:

- emotional grounding
- memory recall
- familiarity
- resident comfort
- emotional well-being
- sensory engagement

Best sections to incorporate it into:

- Smell, Memory & Emotional Processing
- Dementia-care-supportive environments
- Resident-centered quality-of-life interventions

Key phrase from Herz's work to incorporate into the white paper:

> "Olfaction has a uniquely direct relationship with memory and emotional processing."

Dr. Avery Gilbert

Specific source to prioritize:
Gilbert, A. (2008). *What the Nose Knows: The Science of Scent in Everyday Life.*

What the work discusses:
Gilbert explores how smell influences behaviour, mood, emotional responses, memory, daily functioning, and environmental experience, often outside conscious awareness. He challenges the misconception that smell is secondary or merely cosmetic, arguing that olfactory experiences meaningfully shape quality of life and behavioural responses.

Why this source should be included in the white paper:
Gilbert's work is particularly important for policymakers because it reframes olfactory health as clinically meaningful rather than cosmetic. This perspective strengthens arguments that smell may affect:

- daily functioning
- emotional well-being
- resident experience
- comfort in care environments
- behavioural engagement

In long-term care settings, where sensory deprivation and social withdrawal may be common, Gilbert's work helps justify why olfactory health may deserve greater consideration within resident-centered care discussions.

Best sections to incorporate it into:

- Resident quality of life
- Sensory health in aging
- Emotional well-being and environmental familiarity

Dr. Linda Buck

Specific article to prioritize:
Buck, L., & Axel, R. (1991). *A novel multigene family may encode odorant receptors: A molecular basis for odor recognition.*

What the article discusses:
This Nobel Prize-winning research established the biological foundation for understanding smell by identifying olfactory receptors and explaining how odour signals are detected and transmitted to the brain.

Why this article should be included in the white paper:
Buck's research provides scientific legitimacy to the broader discussion surrounding olfactory health. Although not dementia-specific, it is important because it establishes smell as neurologically meaningful and biologically complex rather than secondary or superficial.

This article helps justify:

- why smell matters neurologically
- why olfactory pathways are relevant to cognition
- why olfactory health warrants greater healthcare attention

Best sections to incorporate it into:

- Overview of Sensory Function
- Neurological relevance of olfactory health
- Scientific background section

Dr. Luca Turin

Specific article to prioritize:
Turin, L. (1996). *A spectroscopic mechanism for primary olfactory reception.*

What the article discusses:
Turin proposes the vibration theory of olfaction, exploring how scent molecules may generate different neurological responses and sensory experiences.

Why this article should be included in the white paper:
Turin's work helps strengthen scientific explanations for why certain scent profiles may produce different emotional and behavioural responses. This may help support discussions surrounding:

- individualized sensory experiences
- scent familiarity
- personalized care environments
- culturally responsive scent experiences

However, Turin's work is more theoretical/basic science than clinical and should therefore be used cautiously and primarily in scientific background sections rather than policy recommendations.

Best sections to incorporate it into:

- Scientific background
- Sensory neuroscience
- Personalized sensory-supportive environments

Additional Core Articles to Prioritize

Olofsson et al. — *Olfaction and Aging: A Review of the Current State of Research and Future Directions*

What the article discusses:
Reviews smell loss in aging and explores associations between olfactory dysfunction and:

- Alzheimer's disease
- Parkinson's disease
- mild cognitive impairment
- neurodegenerative disease

Why include it:
This is one of the strongest scientific background papers supporting the argument that olfactory decline may be **associated with** cognitive decline and neurological disease.

Best use:
Scientific background + cognitive decline section.

D'Andrea et al. — *Olfactory Stimulation for People with Dementia: A Rapid Review*

What the article discusses:
Reviews olfactory stimulation interventions in dementia care, including scent-related supports associated with:

- cognition
- sleep
- behavioural symptoms
- emotional well-being
- food intake

Why include it:
Strongest policy-relevant review for long-term care because it directly examines olfactory supports in dementia settings.

Best use:
Non-pharmacological dementia supports + long-term care recommendations.

Cha et al. — *Effects of Olfactory Stimulation on Cognitive Function and Behavior Problems in Older Adults with Dementia*

What the article discusses:
Examines literature suggesting olfactory stimulation may support:

- agitation reduction
- behavioural symptoms
- cognition
- emotional regulation

Why include it:
Supports discussions around sensory-supportive, resident-centered, non-pharmacological care.

Best use:
Behavioural symptom management section.

COVID Smell-Loss Literature (Croy et al., Kohli et al.)

What the literature discusses:
Examines how smell dysfunction is linked with:

- depression
- anxiety
- social isolation
- reduced appetite
- lower quality of life

Why include it:
Important policy argument:

> Olfactory health is not cosmetic — it may affect cognition, emotional regulation, mental health, nutrition, and quality of life.

This helps justify why olfactory health deserves attention in aging populations and long-term care environments.

Core Research Areas

1. Olfactory Dysfunction & Cognitive Decline

Research in this section should examine emerging literature exploring associations between changes in olfactory function and neurological or cognitive conditions, including:

- Alzheimer's disease
- Parkinson's disease
- Mild cognitive impairment (MCI)
- Neurodegenerative conditions

Research should prioritize:

- *Olfaction and Aging: A Review of the Current State of Research and Future Directions* (Olofsson et al.)
- Ottawa Hospital / Parkinson's smell-loss research
- National Institute on Aging (NIA)
- Johns Hopkins Medicine
- Parkinson's Foundation
- Alzheimer Society of Canada

Key themes:

- olfactory decline as a possible early indicator

- neurological pathways connected to smell
- cognitive health implications
- smell and dementia risk
- smell loss as an aging biomarker
- limitations of current evidence

Important terminology:
Use cautious language such as:

- “associated with”
- “linked to”
- “emerging research suggests”
- “may contribute to”

Avoid definitive clinical claims or diagnostic language.

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2. Smell, Memory & Emotional Processing

Research should explore the relationship between olfactory stimuli, emotional memory, familiarity, and resident engagement in dementia-care-supportive environments.

Research in this section should prioritize:

- Rachel Herz
- Avery Gilbert
- Linda Buck
- Luca Turin

Key themes:

- emotional memory and scent recall
- smell and autobiographical memory
- familiarity and environmental comfort
- emotional grounding
- smell and emotional regulation
- sensory stimulation and resident engagement

This section may support discussions surrounding:

- emotional well-being
- resident comfort
- memory-supportive environments
- sensory enrichment in long-term care
- quality-of-life-focused dementia care

Key supporting phrase:

> “Olfaction has a uniquely direct relationship with memory and emotional processing.”

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3. Olfactory Health, Appetite & Quality of Life

Research should examine how reduced olfactory function may affect:

- flavour perception
- appetite
- meal enjoyment
- nutrition
- emotional well-being
- overall quality of life among older adults

This area is particularly relevant in long-term care settings where nutrition decline, appetite loss, frailty, and resident well-being are ongoing concerns.

Suggested institutional sources:

- National Institute on Aging
- Cleveland Clinic
- geriatric nutrition literature
- post-COVID smell-loss studies

COVID-related literature should also examine how smell dysfunction has been linked with:

- depression
- anxiety
- social isolation
- reduced appetite
- diminished quality of life

Key policy framing:
Olfactory health is not cosmetic — it may influence cognition, emotional regulation, nutrition, mental health, and overall resident well-being.

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4. Non-Pharmacological Supports in Dementia Care

Research gathering should include evidence related to broader sensory-supportive and non-pharmacological approaches used in dementia-care-supportive environments.

Prioritize:

- *Olfactory Stimulation for People with Dementia: A Rapid Review* (D'Andrea et al.)
- *Effects of Olfactory Stimulation on Cognitive Function and Behavior Problems in Older Adults with Dementia* (Cha et al.)

Potential scent-related themes:

- calming effects
- emotional comfort
- behavioural support
- sleep quality
- resident engagement
- familiarity and comfort

Scents explored in the literature:

- Lavender (strongest evidence)
- Rosemary (potential memory/attention support)
- Peppermint (alertness and attention)
- Bergamot & Jasmine (mood and anxiety support)
- Citrus/Limonene (stress reduction and emotional activation)

Important wording:
Avoid framing as treatment or aromatherapy. Instead frame as:

- sensory enrichment
- environmental supports
- dementia-care-supportive programming
- resident-centered non-pharmacological care
- quality-of-life-focused interventions

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5. Long-Term Care Policy & Assessment Frameworks

Policy research should examine:

- existing long-term care intake assessments
- resident-centered care standards
- dementia-care legislation
- hearing and vision assessment frameworks
- gaps in sensory-health-related assessment considerations

Key Ontario policy references:

- Fixing Long-Term Care Act, 2021
- Support for Seniors and Caregivers Act, 2025 (Bill 14)
- Residents' Bill of Rights
- dementia-care modernization initiatives
- Ontario Health Teams
- Ontario's Dementia Strategy

Key policy question:
Why are hearing and vision routinely considered in long-term care assessment while olfactory health remains comparatively overlooked despite emerging research surrounding cognition, memory, emotional well-being, and quality of life?

Tab 3

A.2. Manitoba LTC Landscape

Manitoba's long-term care system is similarly shaped by demographic pressures and the growing demand for services that support aging with dignity. While the province faces comparable challenges to Ontario, recent policy directions emphasize rebuilding capacity, strengthening infrastructure, and improving access to care.

In March 2026, the Manitoba government reaffirmed its commitment to LTC reform, highlighting that system capacity had fallen behind demand, with previously stalled projects and bed closures contributing to access challenges. The provincial budget outlined investments aimed at expanding LTC capacity, reopening or developing beds, and stabilizing the system to meet the needs of a growing senior population. This framing positions LTC reform not only as a health system priority but also as a broader social commitment to ensuring dignity and quality of life for older adults.

Manitoba has also placed a strong emphasis on dementia care through its Framework for Alzheimer's Disease and Other Dementias. This framework promotes a coordinated approach to prevention, early diagnosis, community support, and specialized care environments. As in Ontario, dementia is highly prevalent among LTC residents, making this policy central to care planning, workforce training, and system design. The framework underscores the importance of person-centered care, cultural sensitivity, and family involvement.

A series of provincial announcements between 2023 and 2025 further reflect Manitoba's focus on improving LTC quality and access. These include commitments to expand staffing, enhance care standards, and invest in infrastructure upgrades. Collectively, these initiatives acknowledge longstanding concerns regarding wait times, facility conditions, and workforce sustainability.

At the federal-provincial level, a 2024 announcement highlighted investments in health human resources and system capacity, including measures that indirectly support LTC, such as increasing the number of healthcare professionals and reducing system bottlenecks. The emphasis on helping Canadians "age with dignity" aligns with Manitoba's provincial priorities and reinforces the importance of integrated care across jurisdictions.

Stakeholder organizations also play a key role in shaping Manitoba's LTC landscape. The Long Term & Continuing Care Association of Manitoba (LTCAM) advocates for high-quality, accessible care and supports member facilities in delivering services that prioritize resident well-being. Their mission reflects sector-wide commitments to safety, dignity, and continuous improvement.

Overall, Manitoba's approach to LTC reform is characterized by a focus on rebuilding capacity, strengthening system foundations, and enhancing quality of care. While integration models such as Ontario Health Teams are less formally established, Manitoba's policy direction emphasizes collaboration across sectors and sustained investment in infrastructure and workforce. As both provinces respond to similar demographic and systemic challenges, their differing policy tools and governance approaches offer important context for comparative analysis.