

# The influence of the 5 senses on meal time, nutrition and quality of life in long term care homes

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## Introduction

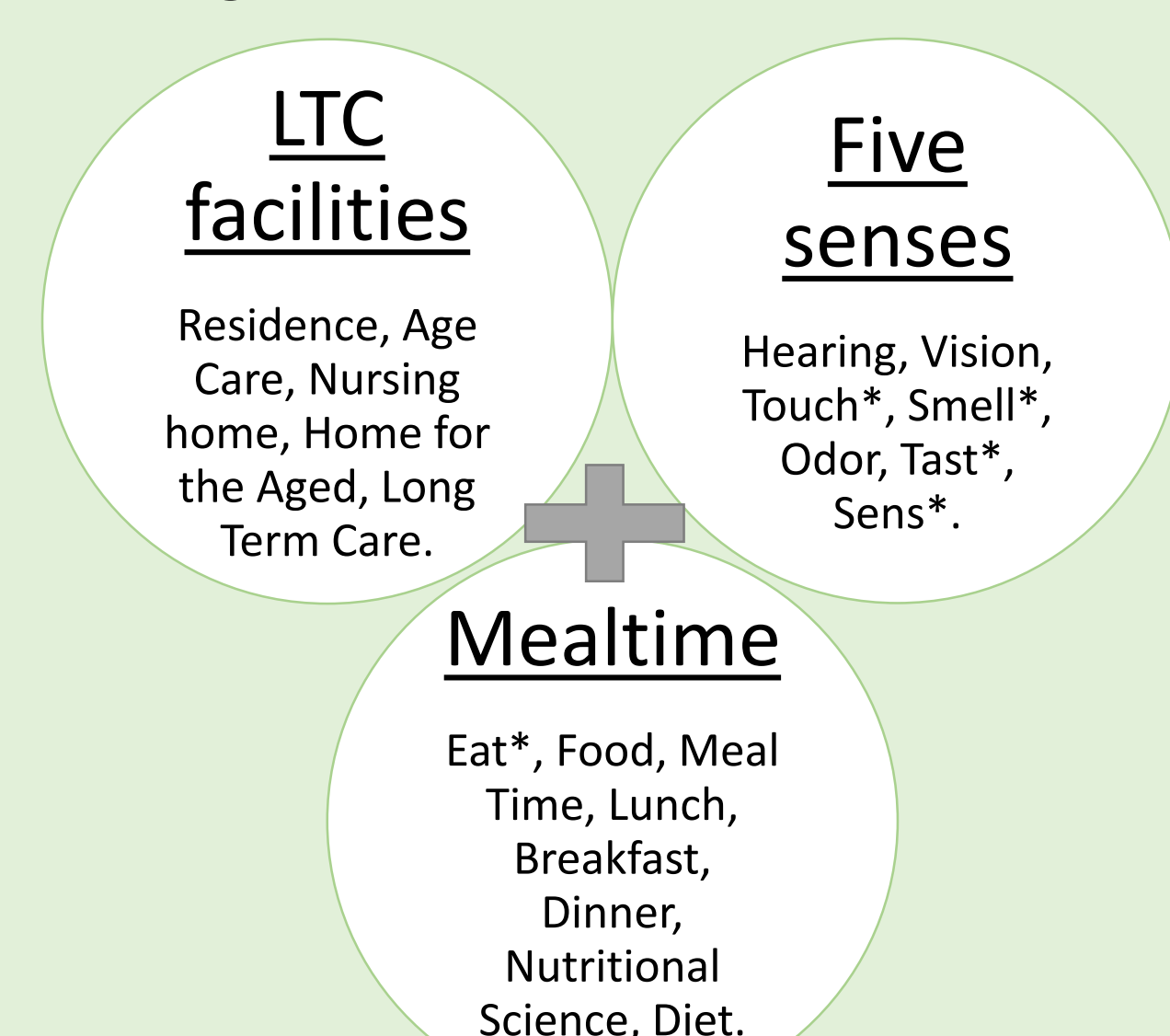
- **Sensory loss** is a common phenomenon that occurs with age<sup>1</sup>  
→ Little is known about its impact on mealtime and ultimately **nutritional status** of residents living in long-term care (LTC) homes.
- **Malnutrition** is a serious problem that may result from reduced food intake<sup>2</sup>  
→ May ultimately limit the ability to carry out activities of daily living (ADL)<sup>3</sup>.
- Residents in LTC homes are at risk of malnutrition; sometimes even malnourished at admission<sup>4</sup>.
- The role of the five senses on **mealtime** should therefore be explored in order to develop strategies and interventions that will ultimately improve quality of life.
- In 2017, Sodexo and the uOttawa LIFE Research Institute published *How and Why the Five Senses Matter for Quality of Life*<sup>5</sup>.  
→ Suggests practices to adapt LTC environments to sensory impairment<sup>5</sup>.  
→ Not specific to mealtime and nutrition.

## Objective

- A scoping review was performed to offer evidence-informed recommendations and identify gaps for future research and practice on the topic of the 5 senses during mealtime in LTC homes.

## Methodology

- Medline (Ovid) and Web of Science databases were searched using various combinations of key words for the following **3 themes**:



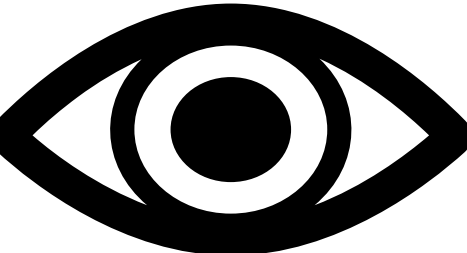
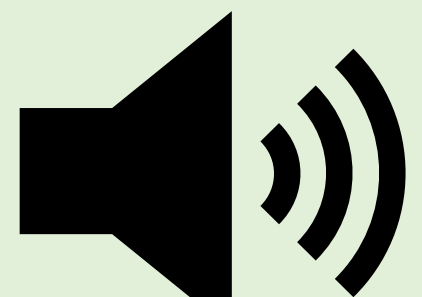


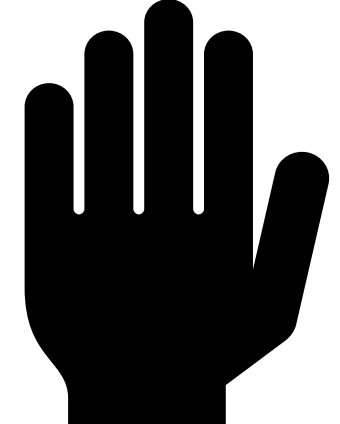
- Articles including the three themes were selected based on relevance of the title, abstract, and full text.
- A total of 15 of 87 Medline results, and 4 of 17 Web of Science results were selected.

## Acknowledgements

- Professor Garcia for supervising this project and providing me with constant guidance and support.
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## Results

The link between sensory impairment and nutritional status in LTC residents is not well studied and can be summarized as follows.

Literature findings	
 <h3>Vision</h3>	<ul style="list-style-type: none"> <li>• <b>Large portions</b> overwhelm<sup>23</sup> residents and therefore, they eat less<sup>22</sup>.</li> <li>• Solution? → Serving smaller portions to promote food intake<sup>24</sup>.</li> <li>• For residents with modified texture diets, appearance plays a key role in <b>overall food appeal</b><sup>25, 26</sup></li> <li>• Issue? → Inability to <b>distinguish</b> modified texture foods and the lack of its <b>variety</b> leads to discontent<sup>27,28</sup>.</li> </ul>
 <h3>Hearing</h3>	<ul style="list-style-type: none"> <li>• Sparse literature surrounding this sense in relation to mealtime.</li> <li>• Plays a role in the ability to detect <b>textural cues of food</b><sup>17</sup>.</li> <li>• Solutions? → Minimizing <b>noise distractions</b> at mealtime to help patients with Alzheimer's disease focus on eating<sup>18</sup>.</li> </ul>
 <h3>Smell</h3>	<ul style="list-style-type: none"> <li>• Smell of food provides a "<b>home-like atmosphere</b>" (p.6)<sup>15</sup>.</li> <li>• Possible practice? → Residents with lower olfactory sensitivity ate more when given <b>flavour enhancement</b><sup>16</sup>.</li> </ul>
 <h3>Taste</h3>	<ul style="list-style-type: none"> <li>• Quality and safety evaluation of food<sup>8</sup> through taste.</li> <li>• <b>Unpleasant taste is a source of complaint</b> and decreases food intake<sup>9</sup>.</li> <li>• Solutions? → <b>Oral Nutrition Supplement</b> in the shape and taste of a butter cookie<sup>10</sup>.</li> <li>→ Monosodium glutamate (<b>MSG</b>) to enhance flavour<sup>11,12, 13</sup>.</li> <li>→ <b>Citric acid</b> flavouring improved swallowing of modified consistency fluid in residents with dysphagia<sup>14</sup>.</li> </ul>
 <h3>Touch</h3>	<ul style="list-style-type: none"> <li>• Plays a role in performing the <b>actions</b> required to eat and detecting <b>thermal and textural cues</b> of food<sup>19</sup>.</li> <li>• Issue? → A loss in somatosensory perception may render eating more <b>hazardous, difficult and unpleasant</b><sup>20, 21</sup>.</li> <li>→ Hard, fibrous foods are often rejected due to the pain and discomfort they inflict<sup>20, 21</sup>.</li> </ul>
<h3>Interactions</h3>	<ul style="list-style-type: none"> <li>• "<b>if food does not look appetizing or taste good, residents will not eat it, generating resident discontent, an increased number of resident complaints, and food wastage. Poor food intake can lead to weight loss, increased morbidity, and possible death.</b>" (p.29)<sup>29</sup>.</li> <li>• the physiology of eating is the result of various interactions between the five senses, along with other factors such as sociocultural context<sup>30</sup>.</li> </ul>

## Discussion

- There is evidence that the 5 senses play a major role in LTC residents' mealtime experience, and that sensory impairment can have an impact on food intake.
- The five senses provide **familiarity, pleasure, safety**, help with **physical aspects** of eating.
- More data is needed to design future malnutrition-prevention practices aiming to improve quality of life of LTC resident<sup>31</sup> and their families<sup>32</sup>.
- Preliminary evidence suggests modifying the visual appearance and taste of food, along with the noise environment in which mealtime takes place.
- Focussing on the role of the senses might promote food intake and nutritional status, thereby increasing participation in ADLs.

## Conclusion

- Little is known about sensory impairment's relationship to nutritional status. Future research should therefore explore this avenue.

## Recommendations

Based on the present literature, the following recommendations apply to LTC homes:

- Food should be easily recognizable, by focusing on its presentation (ex: variety of colourful foods, shapes for modified textures).
- Palatability of food should be increased by using cooking methods that soften hard, fibrous foods in order to promote their intake.
- Menus should offer a wide variety of foods that residents are familiar with.
- Mealtime ambience should have minimized noise distractions, pleasant smells of food and overall good quality of service.
- More studies should be done to confirm the use of flavour enhancers and citric acid in foods and fluids.
- RCT studies should be used to determine the effectiveness of sensory-based interventions on nutritional status.

## Literature cited

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