



NUTRITION, FOOD SERVICE & DINING IN LTC

The best practices within this document are recommendations to support regulatory compliance to Ontario LTC legislation, promote optimal nutrition and hydration care and support person centered care. It is important to note, however, that residents' rights and preferences are paramount and should be respected regardless of legislation or best practice. The best practice document is based on resources and expertise from industry professionals and where applicable, are evidence-based. This is a living document that will transition with the evolution of the industry over time.

| | |
|--|----------------------------|
| SUBJECT: DIABETES MANAGEMENT | Revised: 2023-03-06 |
| ONTARIO REGULATION 246/22 made under the FIXING LONG-TERM CARE ACT, 2021 | |
| Nutritional Care and Hydration Programs | |
| Table of Contents: <ol style="list-style-type: none"> 1. Purpose & Scope 2. Key Concepts 3. Practice Recommendations <ol style="list-style-type: none"> a. Assessment and Monitoring b. Use of Medications Instead of Diet Changes c. Diet d. Monitoring Health Changes e. Hypo and Hyperglycemia f. Laboratory Values 4. Home Specific Policies, Roles & Responsibilities 5. Resources & Tools 6. Evidence & References | |

1. Purpose & Scope

- Type 2 diabetes is a disease in which the pancreas does not produce enough insulin, or the body's cells do not effectively use the insulin it makes. Many frail senior residents in long term care (LTC) have type 2 diabetes.





NUTRITION, FOOD SERVICE & DINING IN LTC

2. Key Concepts

- Although tight glycemic controls through diet may prevent complications of diabetes in younger adults, targets for glycemic control for older adults are more generous to avoid hypoglycemia and promote quality of life.
- A restrictive diet may result in decreased food intake leading to unintentional weight loss and under-nutrition for these residents.

3. Practice Recommendations

a. Assessment and Monitoring

- The registered dietitian (RD) assesses residents individually to determine who may require a diabetic diet prescription e.g., residents with Type 1 diabetes, younger residents with type 2 diabetes, or those with fluctuating blood glucose levels.
- The RD is to provide education on the current evidence and recommendations for diabetes management to support an informed decision. However, the resident and power of attorney (POA)/substitute decision maker (SDM) preferences for a diet prescription are respected.
- Blood glucose control for all residents is managed with appropriate medications. Hemoglobin A1c (HA1c) is checked every 3 to 6 months.
- RD should review blood glucose trends, identifying any specific times in which hypoglycemia or hyperglycemia occurs. This can then be discussed with the physician to review options.
- Temporary episodes of hyperglycemia can be a result of infection or other forms of stress on the body (e.g. recent admission, UTI, wound status) and should be investigated.
- For most frail elderly, the effects of hypoglycemia are a greater risk than hyperglycemia.
- Frail older residents in LTC remain at higher risk of hypoglycemia due to their advanced age, multiple comorbidities, polypharmacy, hypoglycemia unawareness, impaired renal function, and inadequate food intake.
- Cognitive dysfunction in older people with diabetes has clearly been identified as a significant risk factor for the development of severe hypoglycemia. As such, hypoglycemia is a more immediate concern than hyperglycemia and should be reported to nursing staff immediately.





NUTRITION, FOOD SERVICE & DINING IN LTC

b. Use of Medications Instead of Diet Changes

- Most experts agree that using medication rather than dietary changes to control blood glucose, blood lipid levels, and blood pressure can enhance the joy of eating, improve quality of life, and reduce the risk of malnutrition for older adults in LTC.
- Resident education may be helpful for those who cannot choose their own meals. Any physical activity can also help to moderate high blood glucose levels.

c. Diet

- In older LTC residents, regular diets may be used instead of “diabetic diets” as part of a liberalized approach to quality care. This includes use of regular commercial supplements instead of diabetic supplements.
- Interventions are individualized in consultation with the resident/POA/SDM and based on individual needs, personal preferences, and medical complications and comorbidities, e.g.: kidney disease, liver failure, obesity, cognitive impairment.
- A more strictly regulated diet may be beneficial for functionally independent older adults with diabetes who have a life expectancy of greater than 10 years.
- Consider a more strictly regulated diet for residents who are younger or who have type 1 diabetes; a more traditional diabetes diet with carbohydrate restrictions may be of benefit to manage high blood glucose levels and reduce the risk of micro and macrovascular complications. The RD, as part of the care team, in consultation with the resident and family, should make this determination.
- Offer food substitutions, fortified foods, or oral nutritional supplements to residents whose food intake is consistently less than their usual intake and are losing weight.
- Keep a record of residents with diabetes who are on a regular diet, for the purposes of monitoring. Do not assume that a resident with diabetes on a regular diet does not require monitoring.
- Overweight residents with insulin resistance may show some improvement with a small amount of weight loss.





NUTRITION, FOOD SERVICE & DINING IN LTC

d. Monitoring Health Changes

- Be aware that any change in the residents' health or circumstance could lead to a fluctuation of previously stable blood glucose. This may include UTIs, other infections or colds/flu. ([Clinical Frailty Scale, 2018](#))
- Be aware of the increased risk of skin breakdown and infections, as well as slow healing in residents with diabetes.
- Watch for signs of confusion or dementia-like symptoms as a sign of worsening diabetes.
- Blood pressure, blood cholesterol and diabetes together can lead to the diagnosis of metabolic syndrome.
- Pain due to diabetic neuropathy or foot pain may reduce a resident's food intake.
- Be aware that high blood sugar can damage gums and teeth in the same way that it can damage the heart, eyes, and nerves. As a result, people with diabetes are at higher risk for tooth decay, gum inflammation and disease, and periodontitis.
- Monitor for signs of gastroparesis that may affect digestion and food/fluid intake.

e. Hypo and Hyperglycemia

- Process in place to monitor for signs and symptoms of hypoglycemia and report immediately to care team who will provide treatment following the 15/15 rule:
 - Provide 15 g of quickly absorbing carbohydrate (CHO) - 15 ml of sugar or honey stirred into a small glass of water or 150 ml of fruit juice or soft drink, glucose tablets as directed.
 - Check blood glucose level in 15 minutes.
 - If blood glucose level is still low (3.9 mmol/L or less), repeat the process.
 - A typical cup size in LTC is 125 ml or 250 ml, so ensure you use an appropriately sized cup.
 - Reference the Resources & Tools section for a useful poster on the treatment of hypoglycemia by Diabetes Canada (DC). <https://guidelines.diabetes.ca/GuideLines/media/Docs/Patient%20Resources/hypoglycemia-low-blood-sugar-in-adults.pdf>
- Providing more than 15 g of CHO at one time will result in blood glucose quickly rising to dangerously elevated levels. If there are more than 2 hours before the next meal, provide a CHO-protein snack such as a whole or half sandwich, cheese and crackers, muffin, Greek or another yogurt.





NUTRITION, FOOD SERVICE & DINING IN LTC

- Persistent hyperglycemia increases the risk of dehydration, electrolyte abnormalities, urinary incontinence, dizziness, and falls.

f. Laboratory Values

- HbA1c should be tested every 3 to 6 months with the following normal values - functionally dependent: 7.1–8.0%, frail and/or with dementia: 7.1–8.5%.
- Results of capillary blood glucose monitoring for functionally dependent seniors is pre-prandial 5-8 mmol/L and postprandial <12 mmol/L.
- Results of capillary blood glucose monitoring for residents who are frail and/or with dementia is pre-prandial 6-9 mmol/L and postprandial <14 mmol/L. It has been suggested that postprandial glucose values are a better predictor of outcome in older people with diabetes than A1C or pre-prandial glucose values.

Table 1
Glycemic targets in older people with diabetes

| Status | Functionally independent | Functionally dependent | Frail and/or with dementia | End of life |
|---|--------------------------|------------------------|----------------------------|---|
| Clinical Frailty Index* | 1–3 | 4–5 | 6–8 | 9 |
| A1C target <i>Low-risk hypoglycemia</i> (i.e. therapy does not include insulin or SU) | ≤7.0% | <8.0% | <8.5% | A1C measurement not recommended. Avoid symptomatic hyperglycemia or any hypoglycemia. |
| A1C target <i>Higher-risk hypoglycemia</i> (i.e. therapy includes insulin or SU) | | 7.1–8.0% | 7.1–8.5% | |
| CBGM | | | | |
| Preprandial | 4–7 mmol/L | 5–8 mmol/L | 6–9 mmol/L | Individualized |
| Postprandial | 5–10 mmol/L | <12 mmol/L | <14 mmol/L | |

A1C, glycated hemoglobin; CBGM, capillary blood glucose monitoring; SU, sulfonylurea.

*Clinical Frailty Score (1 - very fit to 9 - terminally ill). Please see Figure 1.

- Normal range of blood glucose can range by individual. Understanding the resident's normal range is imperative.





NUTRITION, FOOD SERVICE & DINING IN LTC

4. Home Specific Policies, Roles & Responsibilities

- Policies exist for management of blood glucose levels including risk of hypoglycemia, and staff education to monitor diabetes for the frail elderly population and for the higher risk and/or younger residents.
- Policies exist for monitoring food and fluid intake at meals and snacks and for management of hypoglycemic episodes.
- Utilize these best practices to guide your home specific policies, roles, and responsibilities. Home specific policies take precedence over this document.

5. Resources & Tools

- Dalhousie University. *Clinical Frailty Scale*.
https://www.bgs.org.uk/sites/default/files/content/attachment/2018-07-05/rockwood_cfs.pdf
- Meneilly, G. S., Knip, A., Miller, D., B., Sherifali, D., Tessier, D., Zahedi, A. (2018). Diabetes in older people. *Diabetes Canada Clinical Practice Guidelines Expert Committee*. 42(Suppl 1): S1-S325.
<https://guidelines.diabetes.ca/cpg/chapter37#sec6>
- Diabetes Canada. (2018). *Hypoglycemia low blood sugar in adults*.
<https://guidelines.diabetes.ca/GuideLines/media/Docs/Patient%20Resources/hypoglycemia-low-blood-sugar-in-adults.pdf>

6. Evidence & References

- Munshi, M. N., Florez, H., Huang, E. S., Kalyani, R. R., Muponomunda, M., Pandya, N., Swift, C. S., Taveira, T. H., Haas, L., B. (2016 Jan 11). Management of diabetes in long-term care and skilled nursing facilities: A position statement of the American Diabetes Association. *American Diabetes Association*. 39(2):308-318. <https://doi.org/10.2337/dc15-2512>.
- Meneilly, G. S., Knip, A., Miller, D., B., Sherifali, D., Tessier, D., Zahedi, A. (2018). Diabetes in older people. *Diabetes Canada Clinical Practice Guidelines Expert Committee*. 42(Suppl 1): S1-S325.
<https://guidelines.diabetes.ca/cpg/chapter37#sec6>
- Lipscombe, L., Butalia, S., Dasgupta, K., Eurich, D. T., MacCallum, L., Shah, B. R., Simpson, S. M., Senior, P. A. (2020). Pharmacologic glycaemic management of type 2 diabetes in adults: 2022 update. *Canadian Journal of Diabetes*. (44):575-591.





NUTRITION, FOOD SERVICE & DINING IN LTC

<https://guidelines.diabetes.ca/cpg/chapter-13-2020-update>

- Dorner, B., Freidrich, E. K. (2018 March 22). Position of the academy of nutrition and dietetics: Individualized nutrition approaches for older adults: long-term care, post-acute care, and other settings. *Journal of the Academy of Nutrition and Dietetics*. 118(4):724-735.
<https://pubmed.ncbi.nlm.nih.gov/29576092/>

