FOCUS ON LONG TERM CARE

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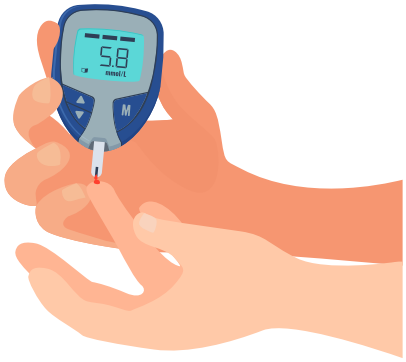
Blood Sugars in Older Adults – Avoid the Lows!

The most important goal
when managing diabetes in older adults in long term care (LTC)
is to avoid episodes of low blood sugar (< 4 mmol/L).



See the back side of this page for a guide to managing blood sugars to achieve this goal.

DID YOU KNOW?

- Just one episode of low blood sugar (<4 mmol/L) can increase the risk of serious harm (falls, seizures, coma, cardiac events, cognitive impairment) or death.[1-5]
- Occasional episodes of high blood sugar (>20 mmol/L) are ***not*** harmful. It takes many days for blood sugars over 20 mmol/L to cause harm.[6]

Frequently Asked Questions

Why are blood sugar targets not usually as strict in older adults in LTC?

- Tight blood sugar control has been shown to increase the risk of severe harm and death in older adults.[7, 8]
- Residents with limited life expectancy often do not receive benefit from tight blood sugar control. This is because it takes 5-30 years of treatment before the beneficial effects on the heart and kidneys are seen.
- Note: there are some special situations where tighter blood sugar control may be appropriate (e.g. a resident with recurrent urinary tract infections may benefit from tighter blood sugar control). These special situations should be identified on a case-by-case basis with the most responsible provider.

When should a continuous glucose monitor (CGM) be used (e.g. Freestyle Libre, Dexcom)?

- CGMs are most useful for individuals on mealtime insulin.
- Residents only on once daily insulin and/or non-insulin medications often do ***not*** need CGM.

How often should blood sugar levels be checked?

If not on insulin:	Checking blood sugar is only required if an episode of low blood sugar is suspected.
If on insulin:	In general, **the number of blood sugar checks/day = number of insulin injections/day.** Also check when an episode of low blood sugar is suspected.[6]

Testing more often than needed can lead to over-treatment and is disruptive to the resident.

Practice Tips

- Pausing certain medications (see tinyurl.com/RxFiles-SADMANS) during periods of acute illness and dehydration can help prevent low blood sugar.
- Residents and their families/caregivers may be in the habit of aiming for lower blood sugars. It is important to educate/reassure that higher blood sugar targets are recommended in older adults to prevent dangerous low blood sugars.
- Sulfonylureas (such as gliclazide DIAMICRON, glyburide) and insulins have the highest risk of causing low blood sugar. These medications are usually the first to be stopped or reduced when concerned about low blood sugar.
- Some diabetes medications have benefits beyond blood sugar lowering. For example, SGLT2 inhibitors (such as empagliflozin JARDIANCE, dapagliflozin FORXIGA, canagliflozin INVOKANA) may lower the risk of hospitalization for heart failure and preserve kidney function in select residents.

DIABETES MEDICATIONS TO PAUSE WHEN SICK

Blood Sugars in Older Adults – Avoid the Lows!

Blood Sugar Levels & Possible Symptoms	Recommended Management for *Most* LTC Residents*
Usually less than 7 mmol/L • With or without signs/symptoms of low blood sugar (e.g. tremor, sweating, hunger, anxiety, confusion). Note: many older adults may not experience any signs/symptoms of low blood sugar.[1,2]	Notify prescriber to reduce diabetes treatment. **Not adjusting treatment could lead to...** falls, injuries, seizures, coma, cardiac events (such as arrhythmias, ischemia) and dementia.[2]
Usually between 7 – 10 mmol/L • Symptoms are unlikely.	This range is acceptable. If the resident has an episode of low blood sugar (< 4mmol/L), notify prescriber to reduce diabetes treatment. Risk of harm is low.
Usually between 10 – 20 mmol/L • With or without signs/symptoms of high blood sugar (e.g. frequent urination, increased thirst). These symptoms are most common at the higher end of this range.[1,2]	This range is acceptable if the resident has no reversible symptoms such as frequent urination/thirst. →If there are reversible symptoms, a dietitian can assess food intake. Notify the prescriber to assess diabetes treatment. Increased diabetes treatment may not improve symptoms if due to other causes. Risk of harm is low.
Usually greater than 20 mmol/L • With or without signs/symptoms of high blood sugar (e.g. frequent urination, increased thirst).[1,2]	Notify prescriber to increase diabetes treatment. **Not adjusting treatment could lead to...** dehydration, confusion, coma.[2]
Greater than 33 mmol/L • With or without signs/symptoms of high blood sugar (e.g. frequent urination, increased thirst, confusion).[1,2]	Notify prescriber to increase diabetes treatment semi-urgently. **Not adjusting treatment could lead to...** dehydration, confusion, coma.[2]

This chart was adapted from the Diabetes Care Program of Nova Scotia Guidelines for Elderly Residents in Long-Term Care Facilities Pocket Reference.
***The above recommendations apply to many LTC residents; however, lower/higher blood sugar targets may be appropriate in select cases (e.g., a resident with recurrent urinary tract infections may benefit from lower blood sugar targets).**

References:

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4. Whitmer RA, Karter AJ, Yaffe K, et al. Hypoglycemic episodes and risk of dementia in older patients with type 2 diabetes mellitus. J Am Med Assoc 2009; 301:1565–72. 62.

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6. Diabetes Canada Clinical Practice Guidelines Expert Committee. Diabetes Canada 2018 Clinical Practice Guidelines for the Prevention and Management of Diabetes in Canada. Can J Diabetes. 2018:42 (Suppl 1):S1-S325.

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8. Conway BN, Long DM, Figaro MK, et al. Glycemic control and fracture risk in elderly patients with diabetes. Diabetes Res Clin Pract 2016:115:47–53.

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