Knowing Your Audience: Hypoglycemia Management Individualized Treatment Goals

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Hypoglycemia – Multifactorial

- Patients at greatest risk for hypoglycemia
- A1C <6% (4x risk),
- A1C <6.5% (2.25x risk),
- Insulin (5x risk)
- Sulfonylurea (2x risk);
- *Age >75*; and/or cognitive impairment or dementia. (7x risk)

https://www.qualityandsafety.va.gov/ChoosingWiselyHealthSafetyInitiative/HypoglycemiaSite/For_Clinicians.asp

Table 6.4—Classification of hypoglycemia

	Glycemic criteria/description
Level 1	Glucose <70 mg/dL (3.9 mmol/L) and ≥54 mg/dL (3.0 mmol/L)
Level 2	Glucose <54 mg/dL (3.0 mmol/L)
Level 3	A severe event characterized by altered mental and/or physical status requiring assistance for treatment of hypoglycemia

Reprinted from Agiostratidou et al. (72).

Glycemic Targets:
Standards of Medical Care in Diabetes - 2022. Diabetes Care 2022;45(Suppl. 1):S83-S96

Hypoglycemia

13.4 Because older adults with diabetes have a greater risk of hypoglycemia than younger adults, episodes of hypoglycemia should be ascertained and addressed at routine visits. B

13.5 For older adults with type 1 diabetes, continuous glucose monitoring should be considered to reduce hypoglycemia. A

Pharmacologic Therapy

13.13 In older adults with type 2 diabetes at increased risk of hypoglycemia, medication classes with low risk of hypoglycemia are preferred. B

13.14 Overtreatment of diabetes is common in older adults and should be avoided. B

13.15 Deintensification (or simplification) of complex regimens is recommended to reduce the risk of hypoglycemia and polypharmacy, if it can be achieved within the individualized A1C target. B

13.16 Consider costs of care and insurance coverage rules when developing treatment plans in order to reduce risk of cost related nonadherence. B

Table 13.2—Considerations for treatment regimen simplification and deintensification/deprescribing in older adults with diabetes (85,123)

Patient characteristics/ health status	Reasonable A1C/ treatment goal	Rationale/considerations	When may regimen simplification be required?	When may treatment deintensification/ deprescribing be required?
Healthy (few coexisting chronic illnesses, intact cognitive and functional status)	A1C <7.0–7.5% (53–58 mmol/mol)	• Patients can generally perform complex tasks to maintain good glycemic control when health is stable • During acute illness, patients may be more at risk for administration or dosing errors that can result in hypoglycemia, falls, fractures, etc.	• If severe or recurrent hypoglycemia occurs in patients on insulin therapy (regardless of A1C) • If wide glucose excursions are observed • If cognitive or functional decline occurs following acute illness	• If severe or recurrent hypoglycemia occurs in patients on noninsulin therapies with high risk of hypoglycemia (regardless of A1C) • If wide glucose excursions are observed • In the presence of polypharmacy
Complex/intermediate (multiple coexisting chronic illnesses or 2+ instrumental ADL impairments or mild-to-moderate cognitive impairment)	A1C <8.0% (64 mmol/mol)	• Comorbidities may affect self-management abilities and capacity to avoid hypoglycemia • Long-acting medication formulations may decrease pill burden and complexity of medication regimen	• If severe or recurrent hypoglycemia occurs in patients on insulin therapy (even if A1C is appropriate) • If unable to manage complexity of an insulin regimen • If there is a significant change in social circumstances, such as loss of caregiver, change in living situation, or financial difficulties	• If severe or recurrent hypoglycemia occurs in patients on noninsulin therapies with high risk of hypoglycemia (even if A1C is appropriate) • If wide glucose excursions are observed • In the presence of polypharmacy

Table 13.2—Considerations for treatment regimen simplification and deintensification/deprescribing in older adults with diabetes. (1 of 2)

Older Adults: *Standards of Medical Care in Diabetes - 2022. Diabetes Care* 2022;45(Suppl. 1)

Table 13.2—Considerations for treatment regimen simplification and deintensification/ deprescribing in older adults with diabetes. (2 of 2)

Community-dwelling patients receiving care in a skilled nursing facility for short-term rehabilitation	Avoid reliance on A1C Glucose target: 100–200 mg/dL (5.55–11.1 mmol/L)	• Glycemic control is important for recovery, wound healing, hydration, and avoidance of infections • Patients recovering from illness may not have returned to baseline cognitive function at the time of discharge • Consider the type of support the patient will receive at home	• If treatment regimen increased in complexity during hospitalization, it is reasonable, in many cases, to reinstate the prehospitalization medication regimen during the rehabilitation	• If the hospitalization for acute illness resulted in weight loss, anorexia, short-term cognitive decline, and/or loss of physical functioning
Very complex/poor health (LTC or end-stage chronic illnesses or moderate-to-severe cognitive impairment or 2+ ADL impairments)	Avoid reliance on A1C. Avoid hypoglycemia and symptomatic hyperglycemia	• No benefits of tight glycemic control in this population • Hypoglycemia should be avoided • Most important outcomes are maintenance of cognitive and functional status	• If on an insulin regimen and the patient would like to decrease the number of injections and fingerstick blood glucose monitoring events each day • If the patient has an inconsistent eating pattern	• If on noninsulin agents with a high hypoglycemia risk in the context of cognitive dysfunction, depression, anorexia, or inconsistent eating pattern • If taking any medications without clear benefits
At the end of life	Avoid hypoglycemia and symptomatic hyperglycemia	• Goal is to provide comfort and avoid tasks or interventions that cause pain or discomfort • Caregivers are important in providing medical care and maintaining quality of life	• If there is pain or discomfort caused by treatment (e.g., injections or fingersticks) • If there is excessive caregiver stress due to treatment complexity	• If taking any medications without clear benefits in improving symptoms and/or comfort

Treatment regimen simplification refers to changing strategy to decrease the complexity of a medication regimen (e.g., fewer administration times, fewer blood glucose checks) and decreasing the need for calculations (such as sliding-scale insulin calculations or insulin-carbohydrate ratio calculations). Deintensification/deprescribing refers to decreasing the dose or frequency of administration of a treatment or discontinuing a treatment altogether. ADL, activities of daily living; LTC, long-term care.

Symptoms of Hypoglycemia

KNOW BEFORE THE LOW.

Low Blood Sugar Signs and Symptoms

Recognizing the signs and symptoms of low blood sugar is important in managing and treating sugar levels. While the signs can differ from person to person and from low to low, symptoms *may include*:

It's also **possible** to experience no symptoms at all, and still have low blood sugar. This is called hypoglycemia unawareness.

Hypoglycemia Treatment

- **15** Grams Fast Acting CHO -
  - 3-4 Glucose tablets
  - ½ cup fruit juice or regular soda
  - Careful with Peppermints
- **15** minutes - Recheck BG (Repeat as needed)
  - 911
- Once normal –
  - CHO with Protein/healthy fat = Small Snack
  - Glucose tablets – Glucagon kit = **Easily Accessible**

http://thnm.adam.com/content.aspx?productid=117&pid=2&gid=19815#:~:text=After%20the%20carbohydrate%20is%20eaten,come%20within%20a%20safe%20range.

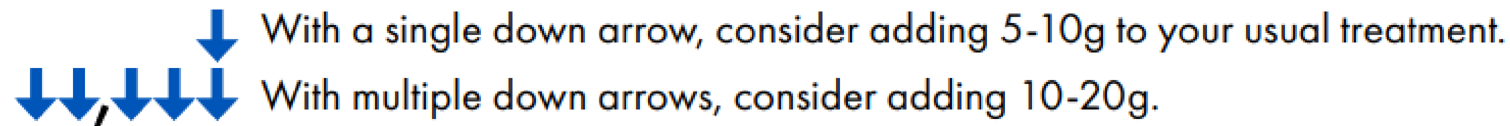
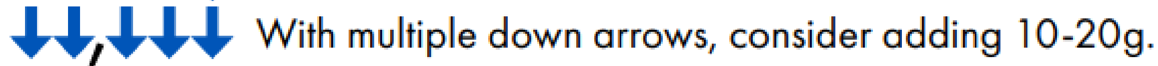
https://www.cdc.gov/diabetes/basics/low-blood-sugar-treatment.html

Hypoglycemia Treatment – Higher skill set.

If you are skilled at counting grams of carbohydrates, you can match the treatment to the specific situation. The bigger you are and the lower your blood sugar, the more carbs you will need to return the blood sugar to a safe range. To avoid over- or under-treatment, use the chart below as a guide.

BLOOD SUGAR	IF YOU WEIGH <100 LBS.	IF YOU WEIGH 100-199 LBS.	IF YOU WEIGH 200+ LBS.
60-69 mg/dl	8-10g carbs	12-15g carbs	15-20g carbs
50-59 mg/dl	10-12g carbs	15-18g carbs	20-25g carbs
Less than 50	12-15g carbs	18-20g carbs	25-30g carbs

If you use a CGM (continuous glucose monitor), check for "down arrows" when you go to treat your low blood sugar. The faster you are dropping, the more carbohydrates you will need.

With a single down arrow, consider adding 5-10g to your usual treatment.

With multiple down arrows, consider adding 10-20g.

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Glucagon

- Considerations
  - Types
  - Coverage
  - Cost
  - Individual Patient

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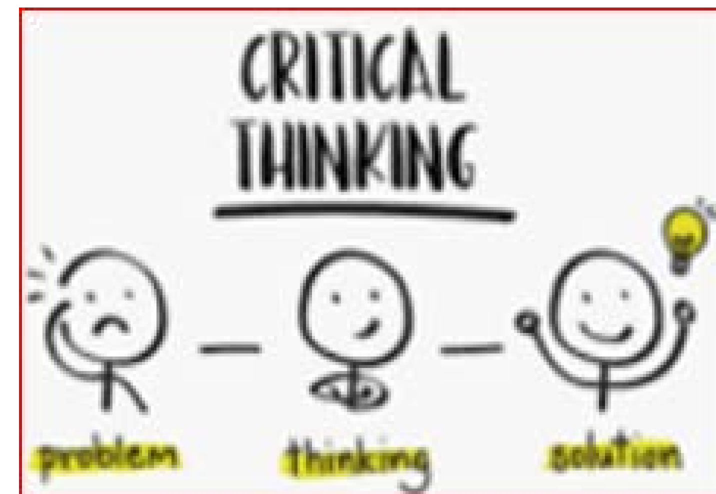
Hypoglycemia

Consistency - Mindfulness

- Skipping Meals – Work with patients habits
  - Snack / Meal
- Types of Meals – Work with patients habits
  - Fast food / Portions
- Physical Activity
  - House work / Yard work
- ETOH – Wine / Mixed drink
- Medication?
- Communication – HCP



Hypoglycemia - Your Team & Your Patient

- Do your patients?...
  - Have and use meter?
  - Know their Target BG?
  - Know what number is “low”
  - Know what to do when “low”
    - Prevention
    - Detection
    - Treatment

- Do your staff members?....
  - Ask patient if they have and use meter
  - Know their patients target BG
  - Know what number is low
  - Know what to do if low
    - Prevention
    - Detection
    - Treatment

Hypoglycemia - Your Team & Your Patient

- Vital signs - BG
- Home BG Records
- Blood Glucose Readings – patient hand or as provider desires
  - Download BG readings, copy BG readings from log, provide log
  - Review Trends with patient – Critical Thinking – Increase Self-Efficacy
- Cheerleader

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Hypoglycemia Patient - Handouts

- https://beyondtype1.org/glucagon/
- Knowbeforealow
- https://www.diabeteseducator.org/docs/default-source/living-with-diabetes/tip-sheets/Hypoglycemia/hypoglycemia-causes-and-prevention-tip-sheet.pdf?sfvrsn=0
- https://www.diabeteseducator.org/docs/default-source/legacy-docs/_resources/pdf/general/Hypoglycemia_Tip_Sheet.pdf

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