

Knowing Your Audience: Hypoglycemia Management Individualized Treatment Goals

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Our Health Care Team Hypoglycemia?

- **Educate / Empower / Engaged**
 - Staff
- **Home Blood Glucose readings** - We must ask about the numbers.
 - (Vital signs)
- **Defined Roles** - Expectations of your staff
 - Who teaches use of meter?
 - Do all or a designated? - Prevention, detection and treatment of hypoglycemia.
 - Must know several 15gm Simple CHO ?
 - Activity, Meals relationship to BG
- **Blood Glucose Readings** – patient hand or as provider desires
 - Download BG readings, copy BG readings from log, provide log

Who does what in your office?

Symptoms of Hypoglycemia

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*:



A diagram of a person's silhouette with various symptoms listed around it. The person is shown in profile on the left and from the front on the right. The symptoms are listed in two columns: one to the left of the person and one to the right.

- Mood Changes
- Seizure
- Rapid Heartbeat
- Sweating
- Unresponsiveness
- Unconsciousness
- Confusion
- Difficulty Speaking
- Shaking
- Hunger
- Poor Coordination
- Pale Skin

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

KNOW
BEFORE
THE LOW.

Hypoglycemia Treatment

15/15 rule

Treat low blood sugar: 15:15 rule



Check blood sugar

Eat 15 grams of carbohydrate

Wait 15 minutes for sugar to get into blood

- **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**



ADCES7 Self-Care Behaviors™ PROBLEM SOLVING

Problem solving is when you come up with ways to solve a problem, then try it and see if it works. When you have diabetes, you can follow your treatment plan, check your blood glucose (sugar) often and still find that you don't always get the results you hope for. Diabetes changes over time so you may need new ways to manage it. Using problem solving techniques can help.

Problems can be big or small, new or old, short-term or long-term, and everyone with diabetes faces them at some point. You can look ahead and plan for some but not others. There are 3 steps that make up the recipe for getting to the root of a problem and help you live well with diabetes:

STEP 1 - IDENTIFY THE PROBLEM

- **What has changed?**
New medicines? Different food? New job? New work schedule? Change in family situation? New insurance plan?
- **What is going to change?**
Traveling? Starting exercise? Long meeting scheduled? Holiday celebration?

You can develop a plan to prevent problems by knowing what is about to change. Sometimes an unexpected problem occurs that affects your diabetes. In that case, you must pin down the cause and try to solve it. It may not always be clear what will work. A diabetes care and education specialist can guide and support you through this. This takes you to step 2.

STEP 2 - FIND SOLUTIONS

- Think of ways to correct the problem based on your experience, tools and the support you have available.
- Check with your diabetes care and education specialist and healthcare provider to see if you have misunderstood anything about your treatment plan.

Here are some common situations where problem-solving may be needed:

Situation 1: Flu

You get the flu and notice your blood glucose levels are higher than normal.

What do you do?

Situation 2: Vacation

While on vacation, you don't have easy access to a gym or time for exercise. How will you handle this?

Situation 3: Traditional Foods

You have a hard time finding healthy food choices within your family's cultural or taste preferences. What steps can you take?

- Let them know if your life situation has changed. Work with them to help you decide what plan fits best for you.
- Share any issues you are experiencing, like not being able to afford all your diabetes supplies or medications.
- Ask them for ideas about new tools that could help.
- Having the right information can help you come up with the right solution for your problem. Then you move to step 3.

STEP 3 - TAKE ACTION

- Choose how to solve the problem once you have options.
- Set a realistic action plan.
- Pick a solution that you can handle; get help if you need it.
- Check to make sure your solution choice works.
- Try something different if one solution doesn't help.

When problem solving, be patient with yourself. Follow up with your diabetes care and education specialist to discuss how things went. They help others just like you every day to solve problems around taking medications, monitoring, healthy eating, being active and reducing risks. Ask your provider to refer you. You deserve it!"



Improve Your Problem-Solving Skills

When you succeed in solving problems you have identified, you gain confidence. You can better handle future challenging situations. Because things change over time, you will always need to do some problem solving to keep making progress. Learning from your previous choices and then revising your plans based on that information greatly enhances your ability for successful self-care.

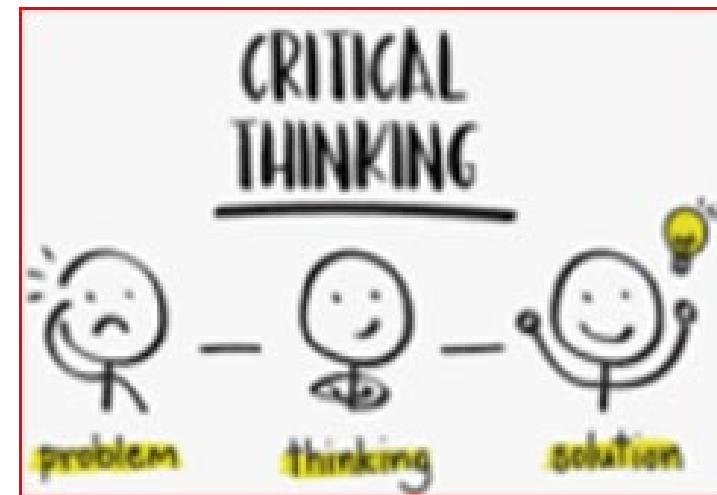
To learn how a diabetes care and education specialist can help you, visit DiabetesEducator.org/LivingWithDiabetes.

For more on this and other behaviors for better diabetes management, visit DiabetesEducator.org/ADCES7.

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



Classification of Hypoglycemia



BG \leq 70 mg/dL

Level 1

Hypoglycemia alert: \leq 70 and \geq 54 mg/dL

- Treat with rule of 15*



BG $<$ 54 mg/dL

Level 2

Clinically significant hypoglycemia $<$ 54mg

- Neuroglycopenic sx
- Treat with rule of 15*
- Have access to Glucagon



Assistance Required

Level 3

Severe hypoglycemia

- No specific glucose threshold
- Associated with severe cognitive impairment
- Requires external assistance for recovery

CGM Goal: $<$ 4% time $<$ 70mg/dL and $<$ 1% $<$ 54mg/dL

*Treatment may vary based on weight and age. Pediatric Diabetes 2018 no19(suppl 27)178-192.


1. ADA. *Diabetes Care*. 2019;41(suppl 1):S1-S193; 2. International Hypoglycemia Study Group 2017. *lhsgonline.com*/lhsgonline.com. 3. Seaquist ER et al. *Diabetes Care* 2013 May; 36(5): 1384-1395.


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.

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

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**

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)	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • 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)	<ul style="list-style-type: none"> • Comorbidities may affect self-management abilities and capacity to avoid hypoglycemia • Long-acting medication formulations may decrease pill burden and complexity of medication regimen 	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • 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
deintensificatio
n/deprescribing
in older adults
with
diabetes.
(1 of 2)**

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

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)	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • If treatment regimen increased in complexity during hospitalization, it is reasonable, in many cases, to reinstate the prehospitalization medication regimen during the rehabilitation 	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • No benefits of tight glycemic control in this population • Hypoglycemia should be avoided • Most important outcomes are maintenance of cognitive and functional status 	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • If there is pain or discomfort caused by treatment (e.g., injections or fingersticks) • If there is excessive caregiver stress due to treatment complexity 	<ul style="list-style-type: none"> • If taking any medications without clear benefits in improving symptoms and/or comfort

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

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

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.

Glucagon

- Considerations

- Types
- Coverage
- Cost
- Individual Patient



HYPOGLYCEMIA

What causes it? And how can I prevent it?

Hypoglycemia, or **low blood sugar**, can happen to anyone who takes insulin or any of the medications listed in the box to the right. If you don't take insulin or any of the medications listed, you have very little chance of having low blood sugar.

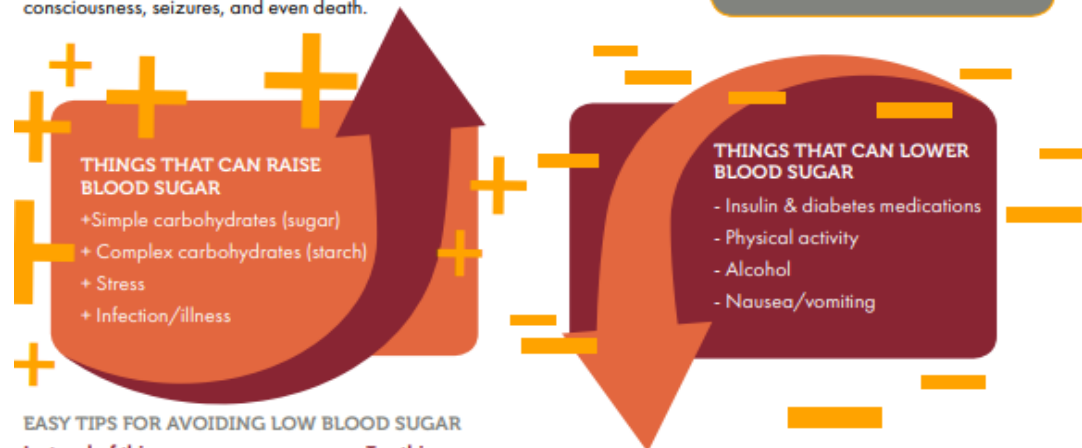
Why does low blood sugar occur? When there are too many things lowering blood sugar and not enough raising it, low blood sugar can take place.

It is common for people with diabetes to have low blood sugar once in a while. However, it can be dangerous to have low blood sugar more than a few times a week or to be so low that self-treatment becomes difficult. Frequent or severe lows (when blood sugar dips below 54 mg/dl or when you need the assistance of another person) can be dangerous and lead to accidents, weight gain, poor performance at work or school, loss of consciousness, seizures, and even death.

IMPORTANT INFORMATION

FOR THOSE WHO TAKE:

- Insulin of any kind
- Glyburide
- Glipizide
- Glimeperide
- Chlorpropamide
- Repaglinide
- Nateglinide
- Combination medications that contain any of these



EASY TIPS FOR AVOIDING LOW BLOOD SUGAR

Instead of this...

Try this

Delaying a meal	Have a snack such as a handful of crackers or a piece of fruit at your usual meal time to keep you satisfied until you can have your meal.
Skipping a meal entirely	Drink something that has sugar or carbs in it at your usual mealtime, such as milk, juice or regular (non-diet) soda.
Sudden physical activity (remember: housework, yardwork and shopping count)	Plan your activity for after a meal or have a carb-containing snack beforehand, such as a sandwich or a sports drink. Talk to your healthcare provider about reducing your insulin/medication.
Having more than a couple of drinks	After one or two alcoholic drinks, switch to seltzer, diet soda, or non-alcohol beer.
Dealing with illness on your own	Call your healthcare provider for instructions if you vomit or are too nauseous to eat, then work with them to develop strategies for the next time you're sick.
Guessing your carb counts (especially for those who match insulin doses to carb intake)	Check the nutrition facts on the food label. If there is no label, you can usually still find carb counts in online resources, apps or in books.
Taking insulin doses too close together	Try to space your mealtime insulin doses at least three hours apart. If you forget to take your long-acting insulin or travel across time zones, ask your healthcare provider for instructions on when/how much to take.
Not knowing what your blood sugar is	Check your blood sugar regularly and often, or use a continuous glucose monitor (CGM) with the low alert turned on.

HYPOGLYCEMIA (LOW BLOOD SUGAR)

Know the Symptoms and How to Help Prevent and Manage It

According to new survey findings, more than half (60%) of people living with diabetes have experienced hypoglycemia, or low blood sugar (glucose), and 81% view it as a significant health concern. In addition, the survey, conducted by the American Association of Diabetes Educators (AADE) and supported by Sanofi US, indicated that respondents were uncertain of how to prevent and manage the condition. Untreated, severe cases of hypoglycemia can have serious health consequences, such as seizure, a loss of consciousness or death.¹

IT'S IMPORTANT TO KNOW ABOUT HYPOGLYCEMIA, THE WARNING SIGNS AND HOW TO MANAGE IT.



What is Hypoglycemia?

People living with type 1 or type 2 diabetes may experience **HYPOGLYCEMIA** when their **BLOOD SUGAR** reaches an abnormally low level, usually 70mg/dL or below. Hypoglycemia can be due to meals or snacks that are too small, delayed or skipped, increased physical activity, drinking alcoholic beverages and/or certain medications.²

Symptoms of Hypoglycemia

Common symptoms of hypoglycemia can include:



Shakiness



Sweating, chills and clamminess



Confusion



Rapid/fast heartbeat



Hunger and nausea



Sleepiness



Headaches

Hypoglycemia can happen even while you sleep. Look out for signs like crying out or nightmares, sweating excessively, and feeling tired, confused or irritable when you wake up.³

Know How to Prevent It

- Take your diabetes medication as prescribed
- Eat regular meals and snacks
- Monitor your blood sugar as directed by your healthcare professional
- Limit your alcohol intake⁴

Know How to Treat It

Consult with your doctor or diabetes educator to determine the best steps to manage your hypoglycemia. Treatment may include:

- Consume 15-20 grams of glucose tablets or simple carbohydrates such as fruit juice, soda or hard candy
- Recheck your blood sugar after 15 minutes; repeat as needed
- Once blood sugar returns to normal, eat a small snack if your next planned meal or snack is more than an hour or two away
- Call your healthcare provider if low blood sugar continues⁵
- Keep your glucose tablets or glucagon injection kit on hand in case needed

¹ <http://www.mayoclinic.org/diseases-conditions/hypoglycemia/basics/complications/con-20021103>

² <http://diabetes.niddk.nih.gov/dm/pubs/hypoglycemia/index.aspx>

³ <http://diabetes.niddk.nih.gov/dm/pubs/hypoglycemia/#symptoms>

⁴ <http://diabetes.niddk.nih.gov/dm/pubs/hypoglycemia/#prevention>

⁵ <http://www.diabetes.org/living-with-diabetes/treatment-and-care/blood-glucose-control/hypoglycemia-low-blood.html#sthash.aHLd8Cce.dpuf>

Hypoglycemia Patient - Handouts

- <https://beyondtype1.org/glucagon/>
- <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