

Change in Condition: Diabetes and Hypoglycemia

February 1, 2019



Objectives

1. Short review of type 2 diabetes
2. Basic care goals
3. Medications often prescribed
4. Common causes of low blood sugar (BS)
5. Early signs of low/high BS
6. What to do and when to do it

Definition – Diabetes

Diabetes - A chronic disease manifested by a persistent increase in blood sugar levels. Diabetes is a metabolic disorder in which the body does not produce or use insulin effectively or produces insufficient amounts. This makes it impossible for the glucose (sugar) to enter the cells to be burned; instead of burning, it accumulates in the blood. There are three main types of diabetes:

- Type 1
- Type 2
- Gestational diabetes

General Overview

- The prevalence of diabetes in the world is increasing at an alarming rate.
- Increased adipose tissue often leads to increased insulin resistance.
- Changes in diet and activity levels seem to be contributing factors in an ever-increasing body mass index (BMI) in the world's population.

General Overview

- As we age, metabolic, physical and digestive tract functional changes can significantly change one's body composition (i.e., the percent of body fat).
- Decreased activity and dietary modifications may increase BMI.
- Type 2 diabetes is fairly common in the older population.
- Low blood sugar episodes tend to be more significant in this population.

Basic Goals

More individualized “clinical” goals in elderly or frail populations

- Quality of life considerations and life expectancy
- Is prevention of slow developing complications an issue?
- Acute concerns versus long-term worries
- Some providers raise the hemoglobin A1c (Hg-A1c) goal to 8.0 while other keep it at 7.0
- Some consider a post-prandial BS of 180 just fine, while others want to see 140

Basic Goals

Goals



Avoidance of hypoglycemic/hyperglycemic episodes



Avoidance of developing or worsening of long-term diabetic complications



Maintenance of a healthy, individualized weight

Medications Abound



Insulins

- Regular, fast-acting, super-fast acting, long-lasting, super-long lasting, medium-lasting, etc.
- Different concentrations
- Still use pens or syringes



Oral medications for BS control

- For the pancreas to make more insulin
- For the liver to stop making insulin
- For the gut to slow digestion
- For the muscle cells to uptake the glucose
- To help the liver, pancreas and stomach work together
- For the kidneys to release glucose into the urine

Medications Abound



Hypertension medications

- Ace inhibitors
- Angiotensin ii receptors blockers
- Calcium channel blockers
- Alpha/beta blockers
- Diuretics
- Vasodilators
- Central alpha -2 agonists



Cholesterol medications

- Statins
- Nicotinic acid
- Fibrates
- Ezetimibe

Common Causes Affecting Blood Sugar

Medication

- Over/under medicated?
- Need medication review?
- BS too tightly controlled or not enough?
- Was the last medication reconciliation?
- Missed dose/s?

Food

- BS medications taken, but meal/snack missed?
- Poor appetite – is there a significant decrease in food intake?
- Meal composition drastically different (e.g., decrease in carbohydrates)?

Common Causes Affecting Blood Sugar (cont'd)

Illness

- Vomiting and/or diarrhea (interferes with absorption of oral medications and food)
- Dehydration
- Infection increases BS

Dehydration

- Inaccurate lab values
- Symptoms overlap those of hypoglycemia (may mask a BS problem)

Other

- Pain (increases BS, decreases appetite)
- Stress - such as family issues, lonely, worry, loss of sleep, etc. (increases BS, decreases appetite)

Hypoglycemia Symptoms

Hypoglycemia or low blood sugar is when your blood sugar is less than 70 mg/dl.

If you have these symptoms:



Shaking



Anxious



Sweating



Dizzy



Hunger



Fast
Heartbeat



Blurred
Vision



Weakness/
Fatigue



Headache



Irritable

Hyperglycemic Symptoms

Hyperglycemia or high blood sugar is when your blood sugar is over 200 mg/dl.

If you have these symptoms:



Very thirsty



Hunger



Weakness/Fatigue



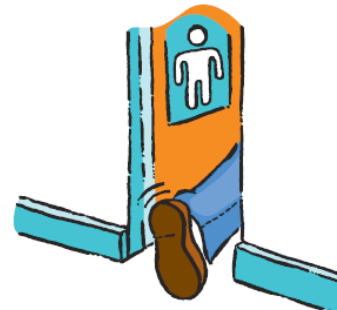
Blurred vision



Dry skin



Sore is not healing



Urinating often



Nausea

Connecting the Dots

What to do and when to do it ...

Change noted in resident
at **risk for hypoglycemia**,
with the conditions below:

- *Shaking*
- *Anxious*
- *Sweating*
- *Dizzy*
- *Hunger*
- *Fast heartbeat*
- *Blurred vision*
- *Weakness/fatigue*
- *Headache*
- *Irritable*

Take vital signs

- Finger stick glucose
- Evaluate for dehydration

Vital sign criteria met
for dehydration

Treat per
protocols/notify
provider

BS >70

- Provide a small snack (provide a larger snack if the meal is more than an hour away)
- Re-check BS in 15 minutes
- Problem solve
- Blood sugar still lowering, follow BS>60 & <70 recommendations (see below)

BS >60 & <70

- Provide small snack*
- Re-check BS in 15 minutes
- Problem solve case

BS >60

- Administer glucose tube or honey
- Prevent choking
- Re-check BS in 10 minutes
- Inform provider

Blood Sugar >70

Blood sugar >70



Provide small snack (at least 15 grams of carbohydrates, 4 ounces of fruit juice or regular pop, glucose tablets or two pieces of hard candy)



Provide a larger snack if next meal is more than one hour away (avoid too much protein and fat at first)



Re-check BS in 15-minutes



Problem-solve cause (re-check every 15 minutes until BS has risen to 90 and patient has eaten a meal)

Blood sugar still lowering



Follow BS >60 & <70 suggestions

Blood Sugar >60 and <70

Patient responsive

- Provide 15 grams of carbohydrate (4 ounces of fruit juice/regular pop, glucose tablets, two pieces of hard candy, etc.)
- Re-check BS in 15 minutes

Patient having difficulty swallowing

If safe to do so:

- Slowly administer glucose tube in mouth (will slowly melt and absorb in mouth)
- 1 table spoon of honey (will melt and absorb)
- Prevent choking
- Re-check BS in 15 minutes

BS <60 and Poor Responsiveness

If safe to do so:

- Slowly administer glucose tube in mouth (will slowly melt & absorb in mouth—remember policies and procedures)
- 1 tablespoon of honey (will slowly melt)
- Prevent choking
- Re-check BS in 10 minutes
- Inform provider

If patient unresponsive:

- Administer glucagon per facility procedures
- Prepare for emergency room, per physician orders
- Do not give liquids or food if unconscious

INTERACT Flowcharts and Tools

INTERACT has a wide variety of flowcharts/tools available:

- **Change in condition** – http://www.pathway-interact.com/wp-content/uploads/2018/09/INTERACT-File-Card-Change_in_Condition-June-2018.pdf
- **Stop and watch** – http://www.pathway-interact.com/wp-content/uploads/2018/09/INTERACT-Stop-and-Watch-v4_0-June2018_June-2018.pdf
- **SBAR communication form** – http://www.pathway-interact.com/wp-content/uploads/2018/09/INTERACT-V4-SBAR_Communication_Form-Dec_June-2018.pdf

INTERACT Flowcharts and Tools (cont'd)

INTERACT has a wide variety of flowcharts/tools available:

- **Gastrointestinal symptoms** – http://www.pathway-interact.com/wp-content/uploads/2018/09/INTERACT-Care_Path_GI_SYMPTOMS_v4-June-2018.pdf
- **Change in behavior** – <http://www.pathway-interact.com/wp-content/uploads/2018/09/INTERACT-V4-Care-Path-Behavior-Change-V4.0-June-2018.pdf>
- **Dehydration** – http://www.pathway-interact.com/wp-content/uploads/2018/09/INTERACT-Care_Path_DEHYDRATION_v4.0-June-2018.pdf
- **Mental status** – http://www.pathway-interact.com/wp-content/uploads/2018/09/INTERACT-Care_Path_MENTAL_STATUS_CHANGE_v4.0-June-2018.pdf

Questions?

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