



Team Name: Pharmacy and Therapeutics Team Lead: Regional Director - Pharmacy Approved by: VP – Medical Services	Reference Number: CLI.6010.SG.007 Pharmacy and Therapeutics Policy Section: General
Issue Date: April 14, 2021 Review Date: Revision Date:	Subject: Emergency Management of Hypoglycemia (Adult/Pediatric)

Use of pre-printed documents: Users are to refer to the electronic version of this document located on the Southern Health-Santé Sud Health Provider Site to ensure the most current document is consulted.

STANDARD GUIDELINE SUBJECT:

Emergency Management of Hypoglycemia (Adult/Pediatric)

PURPOSE:

- To detect and treat a low blood glucose (BG) level promptly by using an intervention that provides the fastest rise in BG to a safe level, to eliminate the risk of injury and to relieve symptoms quickly. It is also important to avoid over-treatment since this can result in rebound hyperglycemia and weight gain.
- To provide patient education post emergency with a focus towards self-management to prevent, detect and treat further episodes of hypoglycemia and optimize blood sugar control within an inter-professional team working with the patient to improve outcomes.

DEFINITIONS:

Hypoglycemia: A low BG level (less than 4 mmol/L for people with diabetes treated with insulin or an insulin secretagogue)

Autonomic or neuroglycopenic symptoms:

Neurogenic (autonomic)	Neuroglycopenic
Trembling	Difficulty concentrating
Palpitations	Confusion
Sweating	Weakness, Drowsiness
Anxiety	Vision Changes
Hunger	Difficulty speaking
Nausea	Headache
Tingling	Dizziness

Severity of Hypoglycemia:

MILD	MODERATE	SEVERE
Autonomic symptoms are present. The individual is able to self-treat	Autonomic and neuroglycopenic symptoms are present. The individual is able to self-treat.	Individual requires assistance of another person. Unconsciousness may occur. BG is typically less than 2.8 mmol/L.

Insulin Secretagogues: Medicines that stimulate the beta cell to secrete insulin, includes the sulfonylureas and glinides

IMPORTANT POINTS TO CONSIDER:

Evidence suggests that 15 g glucose (monosaccharide) is required to produce an increase in BG of approximately 2.1 mmol/L within 20 minutes, with adequate symptom relief for most people. This has not been well studied in individuals with gastroparesis.

Examples of 15 g of carbohydrate for the treatment of mild-to-moderate hypoglycemia
<ul style="list-style-type: none">- 15 g of glucose in the form of glucose tablets (Recommended)- Glucose gel (15 g) or 4x glucose tabs- 15 mL or 3 packets of table sugar dissolved in water- 150 mL of juice, milk or regular soft drink- 6 Life Savers™ (1 = 2.5 g of carbohydrate)- 15 mL of honey

- A 20 g oral glucose dose will produce a BG increment of approximately 3.6 mmol/L at 45 minutes
- Other choices, such as orange juice or milk, are slower to increase BG levels and provide symptom relief
- Glucose gel is quite slow (less than 1 mmol/L increase at 20 minutes) and must be swallowed to have a significant effect
- **People taking an alpha glucosidase inhibitor (acarbose) must use glucose (dextrose) tablets or, if unavailable, milk or honey to treat hypoglycemia.**
- Glucagon 1 mg given subcutaneously or intramuscularly produces a significant increase in BG (from 3 to 12 mmol/L) within 60 minutes
 - The effectiveness of glucagon is reduced in individuals who have consumed more than 2 standard alcoholic drinks in the previous few hours, after prolonged fasting, or in those who have advanced hepatic disease
- For people with diabetes at risk of severe hypoglycemia, support persons should be taught how to administer glucagon

PROCEDURE:

- Treat hypoglycemia according to:
 - Adult Treatment for Hypoglycemia (Patients greater than 12 years of Age)
 - OR
 - Pediatric Treatment for Hypoglycemia (Patients less than 12 years of Age)

- Initiate **CODE 25** CLI.4510.PL.003 if, patient loses consciousness or clinical signs of progressing deterioration including hypotension, tachycardia or bradycardia or seizures
- In all situations when the blood glucose is under 4mmol/L, the attending or on-call prescriber shall be notified as soon as possible, prior to the next scheduled dose of diabetes medication to ensure appropriate ongoing orders are obtained (i.e. for blood glucose monitoring, changes to medications)
- Consult Dietician for any episodes of hypoglycemia
- Ensure the patient has been provided education on the signs and symptoms of hypoglycemia along with a copy of the Patient Handout: Hypoglycemia Low Blood Sugar Adult CLI.6010.SG.007.SD.03
- Document treatment on the appropriate age treatment standard order:
 - Adult treatment for Hypoglycemia (Patients over 12 years of Age) CLI.6010.SG.007.SD.01
OR
 - Pediatric Treatment For Hypoglycemia (Patients Less Than 12 Years Of Age) CLI.6010.SG.007.SD.02, and place a copy on the chart

EQUIPMENT/SUPPLIES:

- Blood Glucose Testing Strips
- Blood Glucose Monitor
- Glucose Tablets
- Glucagon

SUPPORTING DOCUMENTS:

CLI.6010.SG.007.SD.01	Adult Treatment for Hypoglycemia (Patients greater than 12 years of Age)
CLI.6010.SG.007.SD.02	Pediatric Treatment for Hypoglycemia (Patients less than 12 Years Of Age)
CLI.6010.SG.007.SD.03	Patient Handout: Hypoglycemia Low Blood Sugar Adult

REFERENCES:

CLI.4510.PL.003 **CODE 25**

Primary Care Practice Guidelines: Emergency Management of Hypoglycemia Adult / Child WRHA 2014
Hypoglycemia protocol: Deer Lodge Center: September 2018

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