

Supplementary Figure 1 - Hypoglycemia Protocol at Sunnybrook Health Sciences Centre

HYPOGLYCEMIA – Detection, Treatment, Follow-up, and Prevention

1. Detection:

- Blood glucose (BG) test result 3.9 mmol/L or less (bedside or lab value).
- Demonstrated signs and symptoms (see table) followed by confirmatory blood glucose test.

<i>Mild</i>	Moderate	Severe
BG 3-4 mmol/L	BG 2.9 mmol/L or less	BG 1.9 mmol/L or less
Trembling Palpitations Sweating, pallor Anxiety, nervousness Hunger, nausea Headache	Confusion Difficulty concentrating or speaking Tiredness, weakness Dizziness, lack of coordination Anger or odd behaviour Vision changes	Stupor Seizures Coma

2. Treatment:

Goal: to raise blood glucose to 4.0 mmol/L or greater and to maintain blood glucose above 4.0 mmol/L.

Treatment: 15-20 g of glucose (dextrose) or source of rapidly absorbed carbohydrate.

Specific Treatment Modality: This must be individualized based – see table for options.

Patient Attribute	Treatment for Hypoglycemia
<ul style="list-style-type: none"> • <u>Can</u> chew tablets 	<ul style="list-style-type: none"> • Glucose (dextrose) tablets – 4 g each • Patient to chew 4 tablets, then swallow with water (available in Hypoglycemia Kit)
<ul style="list-style-type: none"> • <u>Cannot</u> chew tablets • <u>Can</u> swallow liquids 	<ul style="list-style-type: none"> • Fruit juice – apple preferred; orange acceptable • 2 mini-cartons or 2 Dixie Cups (approx. 200 mL)
<ul style="list-style-type: none"> • Dysphagic (requires thickened liquids) 	<ul style="list-style-type: none"> • Glucose gel (Insta-Glucose) Contents of 1 tube (24 g glucose) squeezed into mouth and swallowed (available in Hypoglycemia Kit)
<ul style="list-style-type: none"> • Enteral Feeding Tube 	<ul style="list-style-type: none"> • Fruit juice – apple preferred; orange acceptable • 2 mini-cartons or 2 Dixie Cups (approx. 200 mL) • Flush tube before and after juice with 30 mL of water to reduce risk of clogging due to interaction of juice with feeds
<p>If blood glucose is 3.4 mmol/L or less on two consecutive tests (over 10 minutes), follow table below according to patient needs.</p>	
<ul style="list-style-type: none"> • NPO • No Enteral Feeding Tube • <u>No IV Access</u> 	<ul style="list-style-type: none"> • Glucagon injection 1 mg (1 unit) subcutaneously • Check MAR for a PRN order for SC glucagon. If none, contact physician to request phone order.

<ul style="list-style-type: none"> • NPO • No Enteral Feeding Tube • <u>IV Access</u> 	<ul style="list-style-type: none"> • Check MAR for a PRN order for IV dextrose. If none, contact physician to request phone order. • IV dextrose 12.5 g to 25 g given by either of these methods: Hang a bag of D10W (dextrose 10%) and infuse 125 to 250 mL as fast as possible (over 5-10 min). OR Using a pre-filled syringe of dextrose 50%, add 25-50 mL to 100 mL minibag of D5W and infuse over 5 min.
---	---

3. Follow Up

- Re-test blood glucose after 15 min
 - **If 4.0 mmol/L or greater**, do not re-test. If available, offer a snack if meal not due within 1 h. **If 3.9 mmol/L or less after oral or enteral glucose or juice**, repeat the treatment and re-test in 15 min. If blood glucose remains 3.9 mmol/L or less after re-treatment, notify physician.
 - **If 3.9 mmol/L or less after IV dextrose or SC glucagon**, notify physician.
- Document the hypoglycemic episode and its treatment in the *nursing notes* and *Blood Glucose Monitoring Record* and notify MD.

4. Prevention

- Before next dose of diabetes medication, physician should:
 - Look for non-medication-related causes for this hypoglycemic episode.

- Review and reassess all orders for insulin or oral diabetes medication.