Interior Health

INSULIN SUBCUTANEOUS ORDERS
ADULT – NPO / Continuous Enteral Feeds

Weight (kg)

Bulleted orders are initiated by default, unless crossed out and initialed by the physician / prescriber. Boxed orders (☐) require physician / prescriber check mark (☑) to be initiated.

NOTE: COMPLETE A NEW PPO FOR ANY SINGLE CHANGE TO THE PREPRINTED ORDER.
DO NOT USE FOR PATIENTS ON AN INSULIN PUMP (PPO #826387) OR FOR INTRAPARTUM CARE (PPO #829384 or #829385)

1. ALLERGIES: See Allergy / ADR record

2. BLOOD GLUCOSE MONITORING *(see back of page for guide)*
- Check blood glucose Q4H *(for rapid acting insulins – routine 0200 checks are essential to detect nocturnal hypoglycemia)*[1]
- Follow Acute Care Adult Hypoglycemia Protocol *(# 829518)* if blood glucose is less than 4 mmol / L
- Notify physician of poor glucose control, including hypoglycemia or hyperglycemia *(see back of page)*

3. CALCULATION OF TOTAL DAILY DOSE [TDD]
- Patient's TDD = sum of all insulins in a 24-hour period = _____ **units** *(see back of page for calculation if not known)*

4. INSULIN – SCHEDULED BASAL – Usual BASAL dose calculated at ½ TDD
- **Discontinue all previous insulin orders** *(see back of page for therapeutic interchange and Formulary equivalent conversion)*
- TYPE 1: no reduction, or estimate up to 10% reduction of usual basal insulin dose
- TYPE 2 (on insulin): estimate 30% to 50% reduction of usual basal insulin dose *(see back of page for calculation)*

BASAL [check one]	Morning	Mid Day	Evening	Bedtime 2200 H	
☐ **glargine**	**units**	**units**	**units**	**units**	Usually given at 2200H *****OR***** split dose 50% morning and 50% evening or 2200H
☐ **NPH**	**units**	**units**	**units**	**units**	
Non Formulary: Use Patient's Own ***Concentration Alert*** ☐ **degludec 100 unit / mL (Tresiba®)** ☐ **degludec 200 unit / mL (Tresiba®)** ☐ **glargine 300 unit / mL (Toujeo®)**	**units**	**units**	**units**	**units**	

5. INSULIN – CORRECTION

☐ **aspart SUBCUT Q4H** *(dose from table below)*

☐ **ISF: 4** If TDD 30 units or less		☐ **ISF: 3** If TDD 31 to 50 units		☐ **ISF: 2** If TDD 51 to 80 units		☐ **ISF: 1** If TDD 81 units or more		☐ **CUSTOM**	
Blood glucose	Insulin	Blood glucose	Insulin	Blood glucose	Insulin	Blood glucose	Insulin	Blood glucose	Insulin
				4.1 – 8	0 units	4.1 – 8	0 units		units
				8.1 – 10	1 unit	8.1 – 10	2 units		units
		4.1 – 8	0 units	10.1 – 12	2 units	10.1 – 12	4 units		units
4.1 – 9	0 units	8.1 – 11	1 unit	12.1 – 14	3 units	12.1 – 14	6 units		units
9.1 – 12	1 unit	11.1 – 14	2 units	14.1 – 16	4 units	14.1 – 16	8 units		units
12.1 – 16	2 units	14.1 – 17	3 units	16.1 – 18	5 units	16.1 – 18	10 units		units
16.1 – 20	3 units	17.1 – 20	4 units	18.1 – 20	6 units	18.1 – 20	12 units		units
20 or greater	☐ Call MD ☐ See CUSTOM	**20 or greater**	☐ Call MD ☐ See CUSTOM	**20 or greater**	☐ Call MD ☐ See CUSTOM	**20 or greater**	☐ Call MD ☐ See CUSTOM		Call MD

ISF = Insulin Sensitivity Factor *(see back of page for calculation)*

6. INSULIN – PERI-PROCEDURAL BASAL

BASAL [check one]	Morning	Mid Day	Evening	Bedtime 2200 H	
☐ **glargine**	**units**	**units**	**units**	**units**	Usually given at 2200H *****OR***** split dose 50% morning and 50% evening or 2200H
☐ **NPH**	**units**	**units**	**units**	**units**	
Non Formulary: Use Patient's Own ***Concentration Alert*** ☐ **degludec 100 unit / mL (Tresiba®)** ☐ **degludec 200 unit / mL (Tresiba®)** ☐ **glargine 300 unit / mL (Toujeo®)**	**units**	**units**	**units**	**units**	

7. INSULIN – AFTER PATIENT IS EATING – Write new orders using the Insulin Subcutaneous Eating PPO *(# 829523)*

[1] Institute for Clinical Systems Improvement. Subcutaneous Insulin Management 5th ed. July 2010

Date *(dd / mm / yyyy)*	Time	Prescriber's Signature	Printed Name or College ID#
/ /			

Therapeutic Interchange Protocol and Formulary Equivalent Conversion Table

Pre-hospital (at home insulin)	Dose conversion	Insulin supplied
BASAL		
detemir (Levemir®)	reduce by 20%	glargine (Lantus®)*
glargine (Basaglar® or Lantus®)	unit-per-unit	glargine (Lantus®)
NPH (NovoLIN®ge NPH)	unit-per-unit	NPH (HumuLIN® N)
degludec 100 unit / mL ***OR*** 200 unit / mL (Tresiba®)	no substitution – use Patient's Own Med	
glargine 300 unit / mL (Toujeo®)	no substitution – use Patient's Own Med	
BOLUS		
aspart (Fiasp®), glulisine (Apidra®), lispro (HumaLOG®), regular (NovoLIN®ge Toronto, HumuLIN® R)	unit-per-unit	aspart (NovoRapid®)
PREMIXED		
HumuLIN® 30 / 70, NovoLIN®ge 30 / 70, NovoMix® 30	unit-per-unit	HumaLOG® **MIX 25**

* Note: administer glargine (Lantus®) twice daily if patient was on detemir (Levemir®) twice daily

Guidelines for Completion of the Insulin Subcutaneous Orders - Adult (NPO / Continuous Enteral Feeds)

- The NPO PPO should be used for adults on **continuous** enteral feeding and, at the discretion of the physician, for patients receiving clear fluids. Use the EATING PPO for adults on **intermittent** (bolus) enteral feeding.
- All adult insulin orders (except stat orders) must be on an appropriate Preprinted Order (PPO).
- Schedule surgery or any procedure as early in the day as possible for patients receiving insulin.

PHYSICIAN NOTIFICATION – required to assess and to change insulin orders:

- **Immediately** (or at least before next insulin dose) for severe hypoglycemia (hypoglycemia requiring assistance).
- **Within 24 hours** (e.g. during the next day's visit to the patient care unit) for:
  - Consistently low blood glucose (where 50% or more of the glucose values are between 4.0 and 5.0 mmol / L)
  - Mild hypoglycemia – requiring oral treatment
  - Hyperglycemia (where 50% or more of the glucose values are greater than 11 mmol / L).

INSULIN DOSING - ONCE TOTAL DAILY DOSE (TDD) IS KNOWN

Note: Certain people will require basal insulin even if not eating. These include: Type 1, Type 2 on insulin for more than 5 years or on higher doses (e.g. greater than 50 units per day), patients with a history of DKA and patients with pancreatectomy. Lack of basal insulin will cause large fluctuations in blood sugars, poor control and increased risk of DKA.

TDD depends largely on weight. To calculate TDD if not known:

- Type 1 or slim Type 2 (BMI less than or equal to 25): TDD = weight × 0.3 to 0.6 units / kg = _____ units / 24 H
- Type 2 obese (BMI greater than 25): TDD = weight × 0.3 *(if insulin naïve)* to 1 unit / kg = _____ units / 24 H

Basal Dosing Calculation – Two Options:

Basal is typically ½ of the Total Daily Dose [TDD] = sum of all insulins in a 24-hour period divided by 2.

- While NPO, the basal dose may have no reduction or reduced up to 10% (if Type 1) or by 30% to 50% (if Type 2)
  - Give either as an HS dose ***OR*** split: ½ at 0800H and ½ at HS

OR

If patient is already on basal with split dosing (AM and HS) pre-NPO:

- Reduce the AM basal dose by 50% (if intended to cover lunch) and reduce the HS basal dose by 10% to 30%.
  - While NPO, no regular dose of aspart insulin is given at lunch.

INSULIN CORRECTION DOSE – CALCULATION OF ISF (Insulin Sensitivity Factor)

- For the NPO patient with elevated blood sugars, a correction dose may be necessary for the patient not requiring basal insulin and for those (see above) who do continue to require basal insulin.
- **ISF calculation** = 100 divided by TDD. If TDD is 50, the ISF = 2 (100 / 50). 1 unit of insulin will drop blood glucose by 2 mmol / L.
  - The greater the pre-admission insulin dose, the less sensitive the patient is to insulin.
  - Select one column on the correction scale based on the calculated ISF.
  - For the sick NPO patient, often see ISF ~ 2 (more resistance), so higher insulin doses are needed.

PATIENT GOING TO SURGERY OR FOR A PROCEDURE

NPO patient **previously on insulin** – need a correction scale dose **and** some (see above) will require a basal dose:

- If basal dose known: calculate NPO dose as outlined above ***OR***
- If basal dose unknown: give 0.2 units / kg Q24H as split dose: 0.1 units / kg at 0800 and 2200. Adjust dose PRN.

NPO patient **NOT previously on insulin** and who will **not** require a basal insulin dose:

- Follow correction scale insulin orders if required.
- The evening before surgery or procedure: give regular ORAL diabetes medications.
- The day of surgery or procedure: **HOLD ORAL** diabetes medications; avoid use of dextrose in IV fluids (e.g. D5W, D5NS).