

Goal Glucose: 100-140 fasting, <180 random. Goal may be individualized.

Oral meds: Hold sulfonylureas. Stop TZDs if volume overload or liver dysfunction. Stop metformin if acidosis or renal insufficiency.

Scheduled Insulin: for patients on insulin, and oral medications presenting with hyperglycemia, or newly found hyperglycemia.

Type 1 Diabetes, regardless of glucose: Continue home program initially or weight-based program below. Consider GLUC or DM nurse practitioner consult.

Type 2 Diabetes, glucose >180: Follow Steps 1-3 below for initial inpatient insulin program, designed for safety and effectiveness in the hospital environment. Titration required! See reverse.

Step 1: Find initial TDD (Total Daily Dose) by taking baseline estimate and subtracting/adding for EACH risk factor:

Baseline TDD estimate	0.5 units/kg/day
If age >70	- 0.1 unit/kg/day
If renal insufficiency:	- 0.1 unit/kg/day
If advanced cirrhosis:	- 0.1 unit/kg/day
If chronic pancreatitis, h/o heavy EtOH or pancreas resection	- 0.1 unit/kg/day
If A1c >10%	+ 0.1unit/kg/day
FINAL TDD estimate	=

Step 2: Determine % basal/nutritional

Patient with relatively low basal needs: Renal insufficiency Cirrhosis Chronic pancreatitis, h/o heavy EtOH, pancreas resection Corticosteroids* (see reverse)	Basal = 40% of TDD <i>Glargine q24 or NPH split 2/3 qAM and 1/3 qHS, OR NPH ½ qAM and ½ qPM</i> Nutritional = 60% of TDD <i>Lispro or Regular. Divide this by number of doses per day (e.g. by 3 for TID meals or by 4 for q6 dosing for enteral feeds)</i>
All other patients:	Basal = 50% of TDD <i>Glargine q24 or NPH split 2/3 qAM and 1/3 qHS, OR NPH ½ qAM and ½ qPM</i> Nutritional = 30-50% of TDD <i>Lispro or Regular. Divide this by number of doses per day(e.g. by 3 for TID meals or by 4 for q6 dosing for enteral feeds)</i>

Step 3: Order insulin program and correction insulin (see reverse)

When to page GLUC: Insulin pump patients

Consider paging GLUC if: Type 1 Diabetes; If patient takes >1.0 units/kg/day at home or you are ordering >1 units/kg/day for the hospital; If you need help.

See also the Pharmacy website Medication Guidelines for more info

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***Steroid-related Hyperglycemia:**

- Pattern: post-prandial hyperglycemia that worsens as the day goes on
- see FRONT to calculate TDD
- Consider using NPH instead of glargine for basal insulin
- Schedule more prandial insulin as the day goes on.
- Ex: TDD=44 units = NPH 10 units BID + 6 lispro breakfast, 8 lunch, 10 dinner + correction scale
- For patients without prior hyperglycemia who develop elevated glucose levels on steroids and have a fasting glucose <140, consider nutritional insulin only with a TDD of 0.2 units/kg/day

Orders in SCM:

- Type "insulin" in the search field & select the appropriate order set

Correction "Scale" Insulin:

All patients on an insulin program or on fingerstick monitoring need orders for correction insulin. Use scales within order sets or build your own.

1500/TDD = "correction factor" = the effect that one unit of insulin will have on the glucose = the interval in a "sliding scale."

Ex: TDD=50. 1500/50=30. One unit of insulin should lower BG by 30mg/dl.

Use as a scale: 150-180 2 units, 181-210 3 units, 211-240 4 units, etc.

Titration to reach goal:

- Glargine: Δ dose QOD prn by 20-30% based on fasting BG.
- NPH: Δ AM based on pre-dinner BG; Δ PM NPH based on fasting BG.
- Lispro/Regular: Increase by 1-4 units/dose if correction insulin is being given consistently. Not approaching your goal? Re-calculate TDD.
- Patients with insulin resistance often require >0.7 units/kg/day

Hypoglycemia:

- Treatment is part of all insulin order sets
- For BG <70, review cause. Reduce "at fault" insulin by 30-50%

****Do not hold basal insulin in type 1 diabetes****

Insulin pumps: requires diabetes consultation, insulin must be ordered using pump order sets and be verified by pharmacist.

AVAILABLE INSULINS						
Class	Name	Brand	Onset	Peak	Duration	
Rapid Acting	*Lispro (analog)	Humalog	5-15 min	1-2 hr	4-6 hr	
	Aspart (analog)	Novolog				
	Gulisine (analog)	Apidra				
Short Acting	*Human Regular	*Humulin R Novolin R	30-60 min	2-4 hr	6-10 hr	
Intermediate Acting	*Human NPH	*Humulin N Novolin N	2-4 hr	6-12 hr	12-18 hr	
Long Acting	*Glargine (analog)	Lantus	2-4 hr	None	24 hr	
	Detemir (analog)	Levemir				
	Human NPH/Regular	Humulin 70/30				
		Novolin 70/30				
**Pre-mixed	Lispro Protamine/Lispro	Humalog mix 75/25	5-15 min	1-2 hr	12-18 hr	
		Humalog mix 50/50				
	Aspart Protamine/Aspart	Novolog mix 70/30	5-15 min	1-2 hr	12-18 hr	
	Human NPH/Regular	Humulin 50/50	30-60 min	2-12 hr	12-18 hr	
		Novolin 70/30				

*On formulary **Names of pre-mixed insulins refer to the % makeup of the insulin. 1st % (ex: 70) is the intermediate-acting insulin (similar to NPH). 2nd % is the short-acting insulin

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