GUIDELINES FOR HEALTH CARE PROVIDERS:
EARLY INITIATION OF BASAL INSULIN / ADDING BOLUS INSULIN

Type 1: Body makes little or no insulin. Injections of basal / bolus insulin can be initiated right from the start.

Type 2: Body makes insulin, but your cells cannot use it properly (called "insulin resistance").
Also, your ability to make insulin gradually decreases over time (called "insulin deficiency").
At the time of diagnosis, in a Type 2, the pancreas only functions at 50%.
Most patients with Type 2 diabetes will, in time, ultimately need insulin therapy.

Usual Total Daily Dose (TDD)
equals 0.5-1.0 units / kilogram / day.
50% Applied to basal insulin
50% Applied to prandial insulin

Type 2: When to start basal insulin:
Based on fasting blood glucose.
Can be used in monotherapy, most often added to a regimen of 1 or 2 oral medications with an A1C over 7% and fasting blood glucose above 110 mg/dl.

When adding Basal Insulin:
NPH, Lantus or Levemir:
Start with basal insulin 5-10U / day at bedtime.

Treat to target fasting plasma glucose 90 – 110 mg/dl.
Do not increase the dosage if plasma glucose was < 80 mg/dl at anytime during the preceding week.
Decrease insulin dose 2-4 units / day / adjustment if severe hypoglycemia occurred (requiring assistance) or plasma glucose < 60 during the preceding week.

Adjust basal insulin every 3-7 days.

Fasting 8hr Blood Glucose	Increase in Insulin Dosage
> 180 mg/dl	4 – 8 units
140 – 180 mg/dl	3 – 6 units
120 – 140 mg/dl	2 – 4 units
100 – 120 mg/dl	1 – 2 units

DRUG ALERT: If adding NPH, Lantus or Levemir to Sulfonylurea, reduce the Sulfonylurea to ½ the patient's maximum dose. Reduction of TZD's may be required. Monitor closely for weight gain.

Once morning Blood Glucose readings are in **normal range**, monitor 2 hour post-prandial glucose.
If > 140-180 mg/dl, bolus insulin is needed prior to meals.

When adding Bolus Insulin:
Humalog, Novolog, or Apidra
Onset < 15 minutes
Peak 1 – 1 ½ (2) hours*
Duration 4 – 6 hours
*Monitor blood glucose 2 hours after injection.
Goal < 140 – 180 ml/dl

Active Insulin
After 2 hours:
80% of active insulin has been used and
20% remains active and continues to drop blood glucose over the next 4 – 6 hours.

DRUG ALERT: Insulin Stacking
Active insulin working in the body at the same time as a previous dose may be overlapping, producing a hypoglycemic event.

Insulin Sensitivity / Correction Factor
1unit of insulin will drop blood glucose ___ points (mg/dl).
Usually 25 – 50 points (mg/dl).
If insulin sensitivity is high the correction factor number will be high (Example: a skinny child will drop 100 points (mg/dl). per unit)
If insulin sensitivity is low then the correction factor number will be low (Example: An overweight adult will have a 10 point (mg/dl). drop).

Rule of 1700: used to calculate insulin sensitivity / correction factor.
1700 / Total daily dose of insulin
= how many points 1 unit of insulin will drop blood glucose.

DRUG ALERT:
If blood glucose is below 100 mg/dl, remember to subtract Insulin Correction Factor.

Insulin to Carbohydrate Ratio:
1 unit of insulin will cover ___grams of carbohydrates
Usually 1 unit to 15 gm carbohydrate
If insulin sensitivity is high the number will be higher (Example: skinny child 1U:30 gm)
If insulin sensitivity is low, the number will be lower (Example: overweight adult 1U:10 gm)

Rule of 450: used to calculate meal bolus dose of insulin based on CHO consumption.
450 / total daily insulin dose
= CHO covered by 1u rapid acting insulin analogue (lispro, aspart, glulisine).

Lag Time: Approximate time meal should be delayed once insulin is injected. General lag time rules are as follows:

Pre-prandial Blood Glucose (mg/dL)	Lag Time (minutes)
<70	0 min
70-150	15 min
151-240	30 min
> 241	45-60 min

Health care providers: If you have questions in regard to basal / bolus therapy, please contact the diabetes education department at your local hospital or consider referral to endocrinologist.