

THE BASAL INSULIN/BOLUS INSULIN CONCEPT

Basal Insulin

- Suppresses glucose production between meals and overnight
- 50% of daily needs which is given by one or two injections per day or per insulin pump

Bolus Insulin (Meal Time or Post-prandial)

- Limits hyperglycemia after meals
- Immediate rise and sharp peak at 1 hour
- 10-20% of total daily insulin requirement at each meal

INSULIN REGIMENS

Regimen Considerations:

- Depends on individual characteristics (e.g., daily schedule, timing of meals, physical activity, age, and medication adherence)
- Willingness to monitor and take multiple injections
- Current pattern of high and low blood glucoses
- History of hypoglycemia unawareness

Common Insulin Regimens			
Intensive Insulin Regimens	Pre-Mixed or Split Mixed (NPH/Regular or Rapid-Acting Analogue twice a day)	Modified Split Mixed (NPH and Regular in AM, Regular in evening meal, NPH at bedtime)	Basal Insulin Only
<ul style="list-style-type: none"> ▪ Combines a basal insulin with injections of rapid-acting insulin before each meal ▪ Typically 3-4 injections/day ▪ More flexible with regard to timing of meals, content of meals, and activity ▪ Allows for frequent adjustments/ corrections ▪ Requires frequent monitoring of glucose ▪ Can get the best A1C with less hypoglycemia compared to conventional regimens 	<ul style="list-style-type: none"> ▪ 2 injections per day ▪ Inflexible (need to eat meals of consistent content and consistent times with snacks to avoid hypoglycemia) ▪ More hypoglycemia with this regimen when control is tight ▪ Does not allow for adjustment of insulin through the day 	<ul style="list-style-type: none"> ▪ Less nocturnal hypoglycemia and better control of fasting glucose ▪ 3 injections per day ▪ Need consistent meals through the day ▪ Substitute rapid acting insulin (Aspart, Lispro, glulisine) for Regular to further decrease risk of hypoglycemia 	<ul style="list-style-type: none"> ▪ May reduce fasting plasma glucose ▪ Used to improve glucose control when used with oral medications

Initiating Insulin Type 2 Diabetes: Examples of Various Options to Consider

- 10 units NPH or 0.1 to 0.15 units/kg at bedtime
- 10 units glargine or 0.1 to 0.15 units/kg once (morning or bedtime)
- 10 units detemir or 0.1 to 0.15 units/kg once daily (morning or at bedtime)
- 10 units of premixed insulin once a day (pre-breakfast or pre-dinner)
- 10 units premixed insulin twice daily (pre-breakfast and pre-dinner)