

Insulin and Other Injectable Medications

THE DIABETES CENTER

Insulin

There are three main characteristics of insulin:

Onset is the length of time from injection to when the insulin starts to work.

Peak time is the time during which the insulin works hardest or is at its maximum strength to lower blood sugar.

Duration is how long the insulin can continue to lower blood sugar.

All insulins are human insulin but some are classified as insulin analogs.

Analog insulins are chemically identical to human insulin.

Type	Form	Appearance	Onset	Peak	Duration
Rapid-acting: lispro – Humalog aspart – Novolog glulisine – Apidra	Analog	Clear	<15 minutes	1 to 2 hours	3 to 4 hours
Short-acting: Regular Insulin Humulin R Novolin R	Human	Clear	30 minutes to 1 hour	2 to 3 hours	3 to 6 hours
Intermediate-acting: NPH Humulin N Novolin N	Human	Cloudy	2 to 4 hours	4 to 10 hours	10 to 16 hours
Long-acting: detemir – Levemir do not mix with other insulin glargine – Lantus do not mix with other insulin	Analog	Clear	1 to 2 hours	No peak – flat	Up to 24 hours 24 hours



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Mixtures of insulins

Some insulins are pre-mixed. The table below lists these insulins. Lantus and Levemir are not mixed with other insulins.

Type	Form	Appearance	Onset	Peak	Duration
NPH 70 percent/ regular 30 percent: Humulin 70/30 Novolin 70/30	Human	Cloudy	30 minutes	2 to 10 hours	10 to 16 hours
NPH 50 percent/ regular 50 percent: Humulin 50/50	Human	Cloudy	30 minutes	2 to 10 hours	10 to 16 hours
50 to 75 percent lispro protamine/ 50 to 25 percent lispro: Humalog Mix 50/50 Humalog Mix 75/25	Analog	Cloudy	<15 minutes	1 to 10 hours	10 to 16 hours
70 percent aspart protamine/30 percent aspart: Novolog Mix 70/30	Analog	Cloudy	<15 minutes	1 to 10 hours	10 to 16 hours

Other Injectable Drugs

Synthetic Amylin Hormone

- For use by people with either Type 1 or Type 2 Diabetes
- Slows movement of food through the stomach
- Suppresses the appetite and lowers the high blood glucose after meals
- Reduces the amount of glucose that is released by the liver

Drug Name	Common Dose	Comments and Side Effects
pramlintide: Symlin	Type 1 Diabetes: • 15-60 mcg injected right before each meal Type 2 Diabetes: • 60 120 mcg right before meals Dose is gradually increased	<ul style="list-style-type: none"> • Take only with major meals of at least 30 grams of carbohydrate or 250 calories • Main side effect is hypoglycemia • Nausea • Should not be used in people that have gastroparesis • Insulin doses generally need to be reduced after starting the medication



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Incretin Mimetic

- For use in treating Type 2 Diabetes.
- Helps the pancreas make the right amount of insulin after eating
- Stops the liver from making too much sugar
- Regulates food release from the stomach and may suppress the appetite

Drug Name	Common Dose	Comments and Side Effects
exenatide: Byetta	5-10 mcg Dose is gradually increased	<ul style="list-style-type: none">• Take twice daily within 60 minutes before the morning and the evening meal• Skip the dose if you started to eat and haven't taken it• May help with weight loss• Low blood sugar and nausea are the most common side effects• May need to reduce dose of sulfonylurea (glipizide, Glucotrol or glimepiride)• Taken once a day, at any time, not dependant on a meal
liraglutide: Victoza	0.6-1.8 mg Dose is gradually increased	<ul style="list-style-type: none">• May help with weight loss• Low blood sugar and nausea are the most common side effects• May need to reduce dose of sulfonylurea (glipizide, Glucotrol or glimepiride)• Before you start taking Victoza, tell your healthcare provider if you or any family member have had thyroid cancer, especially medullary thyroid cancer, or Multiple Endocrine Neoplasia syndrome type 2. Do not take Victoza if this is the case.



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