Onset and Mechanisms of Action of Various Types of Insulin

Type	Onset and Mechanisms of Action
Lispro/Aspart	Very short acting; onset of action within 15 minutes; peak action 30-90 minutes; maximum 5 hours
Regular	Short acting; onset of action within 1 hour; duration typically 4-8 hours, maximum 12 hours
NPH	Intermediate acting; onset within 2-3 hours; duration typically 8-12 hours, maximum 24 hours
Lente	Intermediate acting; onset within 2-3 hours; duration typically 8-12 hours, maximum 24 hours
Glargine	Long acting up to 24 hours
Ultralente	Longest acting (up to 28 hours)
Premixed (regular and long acting [usually NPH]; concentrations vary)	Onset and duration are similar to the component parts

Note: All insulins (regular insulin; insulin aspart; insulin lispro; insulin glulisine; isopahne insulin [NPH]; lente insulin; ultralente insulin; insulin glargine; insulin detemir; insulin lispro, insulin lispro protamine; insulin aspart, insulin aspart protamine; regular insulin, isophane insulin [NPH]; semilente insulin; protamine zinc insulin [PZI]) act directly on glucose metabolism. Starting dose is highly variable; weight based algorithms can be used with a total starting dose of 0.1 to 0.15 units per kg (NPH or Lente insulin) divided into two doses being typical. Insulins improve HbA_{1c} by 1-2%; in some studies, titrated doses can result in all patients achieving HbA_{1c} <7%

Table from *Physicians Information and Education Resource* (*PIER) Diabetes Mellitus, Type 2* module.