

Types of Insulin

Types of insulin			
Insulin type (trade name)	Onset	Peak	Duration
Basal insulins			
Intermediate-acting (cloudy) • Insulin neutral protamine Hagedorn (Humulin®-N, Novolin® ge NPH)	1 – 3 h	5 – 8 h	Up to 18 h
Long-acting insulin (clear) • Insulin detemir (Levemir®) • Insulin glargine U-100 (Basaglar®§, Lantus®, Semglee®§)	90 min	Not applicable	16 – 24 h 24 h
Ultra long-acting insulin (clear) • Insulin glargine U-300 (Toujeo®) • Insulin degludec U-100, U-200 (Tresiba®)	90 min	Not applicable	>30 h 42 h
Once weekly basal insulin (clear) • Insulin icodex U-700 (Awiqli®)	16 h	2 – 4 days	>7 days
Bolus (preprandial or mealtime or correction) insulin			
Short-acting insulins (clear) • Insulin regular (Humulin®-R, Novolin® ge Toronto) • Insulin regular (Entuzity® U-500)	30 min 15 min	2 – 3 h 4 – 8 h	6.5 h 17 – 24 h
Rapid-acting insulin analogues (clear) • Insulin aspart (Kirsty®†, NovoRapid®, Trurapi®†) • Insulin glulisine (Apidra®) • Insulin lispro U-100 (Admelog®‡, Humalog® U-100) • Insulin lispro U-200 (Humalog® U-200)	9 – 20 min 10 – 15 min 10 – 15 min 10 – 15 min	1 – 1.5 h 1 – 1.5 h 1 – 2 h 1 – 2 h	3 – 5 h 3.5 – 5 h 3 – 4.75 h 3 – 4.75 h
Ultra rapid-acting insulin analogues (clear) • Faster-acting insulin aspart (Fiasp®)	4 min	0.5 – 1.5 h	3 – 5 h
Premixed insulins			
Premixed regular insulin – NPH (cloudy) • Humulin® 30/70 • Novolin® ge 30/70	A single vial or cartridge contains a fixed ratio of insulin (% of rapid-acting or short-acting insulin to % of intermediate-acting insulin)		
Premixed insulin analogues (cloudy) • Biphasic insulin aspart (NovoMix® 30) • Insulin lispro/lispro protamine (Humalog® Mix25 and Mix50)			
Fixed Ratio Combinations			
Fixed ratio basal/GLP-1 RA products (clear) • Insulin degludec/liraglutide 100 units + 3.6 ug /mL (Xultophy®) • Insulin glargine/lixisenatide 100 units + 33 ug/mL (Soliqua®)	Prefilled pen contains a combination fixed ratio of basal insulin and once-daily GLP-1 RA		
Data represents estimations derived from pooled data analysis using various experimental conditions. There is significant inter- and intra-individual variation in pharmacokinetics and pharmacodynamics depending on a variety of clinical factors, including dose.			
Health-care providers should refer to the most current edition of Compendium of Pharmaceutical and Specialties (Canadian Pharmacists Association; Ottawa, Ontario, Canada) and product monographs for detailed information.			

§ Biosimilar of Lantus® insulin

† Biosimilar of NovoRapid® insulin

‡ Biosimilar of Humalog® U-100 insulin