

INSULIN ADMINISTRATION

Preparation	Brand	Route	Administration	Mixing Insulins	Comments	
RAPID-ACTING						
Insulin	Afrezza	ⓘ	oral inh	At the beginning of a meal	— Loss of drug effect if inhaler is mishandled. See full labeling.	
Insulin Aspart	NovoLog	ⓘ	SC CSII IV	Within 5–10mins before a meal	SC: May mix with NPH insulin. Draw NovoLog into syringe first. Inject immediately after mixing. May dilute with Insulin Diluting Medium for NovoLog to 1:10 (U-10) or 1:2 (U-50) concentrations. CSII: Do not dilute/mix with other insulins IV: Do not mix with other insulins	CSII: Change inj site at least every 3 days and reservoir at least every 6 days.
Insulin Glulisine	Apidra	ⓘ	SC CSII IV	Within 15mins before a meal or 20mins after starting a meal	SC: May mix with NPH insulin. Draw Apidra into syringe first. Inject immediately after mixing. CSII: Do not dilute/mix with other insulins IV: Do not mix with other insulins	CSII: Change inj site at least every 48hrs and reservoir at least every 2 days.
Insulin Lispro	Humalog	ⓘ	SC CSII	Within 15mins before or immediately after a meal	SC: May mix with Humulin N. Draw Humalog into syringe first. Inject immediately after mixing. May dilute with STERILE DILUENT for Humalog to 1:10 (U-10) or 1:2 (U-50) concentrations. CSII: Do not dilute/mix with other insulins	CSII: Change inj site at least every 3 days and reservoir at least every 7 days.
SHORT-ACTING						
Insulin Injection Regular (R)	Humulin R U-100	OTC	SC IM IV*	Individualize	SC: May mix with longer-acting human insulins. Draw clear insulin into syringe first.	Use syringes marked with U-100.
	Novolin R		SC IM IV	≥3 times daily within 30mins before a meal		
INTERMEDIATE-ACTING						
Insulin Ispohane Suspension (NPH)	Humulin N	OTC	SC	Individualize	May mix with Humalog or Humulin R. Draw clear insulin into syringe first then Humulin N.	Rotate vial to mix. Should look uniformly cloudy. Use syringes marked with U-100.
	Novolin N				May mix with other insulins. Draw clear insulin into syringe first then Novolin N.	Rotate vial to mix. Should look uniformly cloudy. Use syringes marked with U-100 or U-40. Inject rapidly over 2–4secs to avoid clogging needle tip.
SHORT- AND INTERMEDIATE-ACTING MIXTURES						
Insulin Aspart Protamine/Insulin Aspart	NovoLog Mix 70/30	ⓘ	SC	Twice daily within 15mins before a meal	Do not mix with other insulins	Roll vial, prefilled syringe 10 times until uniformly cloudy.
Insulin Ispohane Suspension (NPH)/Regular Insulin (R)	Humulin 70/30	OTC	SC	Individualize	See product label	Rotate vial to mix. Should look uniformly cloudy. Use syringes marked with U-100.
	Novolin 70/30				Do not change the ratio by adding NPH or Regular insulin to the vial. Use separate insulin formulations (Novolin N and Novolin R).	Rotate vial to mix. Should look uniformly cloudy. Use syringes marked with U-100 or U-40. Inject rapidly over 2–4secs to avoid clogging needle tip.
Insulin Lispro Protamine/Insulin Lispro	Humalog Mix 50/50 Humalog Mix 75/25	ⓘ	SC	Within 15mins before a meal	Do not mix with any other insulins	Rotate vial to mix. Should look uniformly cloudy.
LONG-ACTING						
Insulin Detemir	Levemir	ⓘ	SC	Once daily (PM) or twice daily (12hrs apart)	Do not dilute/mix with other insulins	Should look clear, colorless.
Insulin Glargine	Basaglar Lantus	ⓘ	SC	Once daily at the same time every day	Do not dilute/mix with other insulins	Should look clear, colorless.
	Toujeo					
Insulin Injection Regular (R)	Humulin R U-500	ⓘ	SC	Individualize	See product label	Caution with dosage. Should look water-clear. Use with U-500 insulin syringes.

NOTES

Key: CSII = continuous subcutaneous insulin infusion; *IV to be used in a clinical setting under proper medical supervision.
 Rate of insulin absorption, onset and duration of action may be affected by the injection site, blood supply, temperature, exercise, and other variables.
 Caution with changes in strength, manufacturer, preparation, species of insulin source.
 Not an inclusive list of medications and/or dosing instructions. Please see drug monograph at www.eMPR.com and/or contact company for full drug labeling.