

## Drug Information Table

**Insulin – lispro (Humalog), regular (Humulin R), NPH (Humulin N), insulin glargine (Lantus)**

Therapeutic Use	Administration – Health Care Professional	Administration – Patient
<ul style="list-style-type: none"> <li>• Diabetes mellitus (type 1, type 2, gestational)</li> </ul>	<ul style="list-style-type: none"> <li>• Injection considerations                             <ul style="list-style-type: none"> <li>◦ Give subcutaneously (using an insulin syringe) or IV (Humulin R).</li> <li>◦ Select an appropriate needle length for injecting insulin into subcutaneous tissue versus intradermal (too short) or intramuscular (too long).</li> <li>◦ For insulin suspensions (cloudy insulins), gently rotate the vial between your palms to disperse the particles.</li> <li>◦ When mixing short-acting insulin with longer-acting insulin, draw the short-acting insulin into the syringe first, then the longer-acting insulin.</li> <li>◦ Do not mix insulin glargine or insulin detemir with any other insulin.</li> <li>◦ Do not administer short-acting insulins if they appear cloudy or discolored.</li> <li>◦ Instruct patients to self-administer insulin subcutaneously in one general area for consistent absorption rates.</li> </ul> </li> <li>• Storage of insulin                             <ul style="list-style-type: none"> <li>◦ Keep vials in use at room temperature for 1 month.</li> <li>◦ Refrigerate unopened vials of a single type of insulin until their expiration date.</li> <li>◦ Keep insulins premixed in syringes for 1 to 2 weeks under refrigeration and vertical, with the needles pointing upward. Prior to administration, resuspend the insulin via gentle motion.</li> <li>◦ Expect dosage adjustments in response to caloric intake, infection, exercise, stress, growth spurts, and pregnancy.</li> <li>◦ Make sure adequate glucose is available at onset and peak insulin times.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Instruct on principles of daily insulin injections.</li> <li>◦ Draw up prescribed amount of insulin using insulin syringe</li> <li>◦ Administer subcutaneously – have patient demonstrate proper technique.</li> <li>◦ Rotate injection sites systematically and space them 1 inch apart.</li> <li>◦ Do not inject cold insulin. Keep insulin at room temperature.</li> </ul>
Side/Adverse Effects	Interventions	Patient Instructions
<ul style="list-style-type: none"> <li>• Hypoglycemia</li> </ul>	<ul style="list-style-type: none"> <li>• Monitor for signs of hypoglycemia (with abrupt onset: tachycardia, palpitations, diaphoresis, shakiness; with gradual onset: headache, tremors, weakness).</li> <li>• Check blood glucose level to confirm, then give 15 g of carbohydrate (4 oz fruit juice, 1 tbsp honey, glucose tablets per manufacturer’s suggestion to equal 15 g).</li> <li>• For unconscious patients, administer glucose or glucagon parenterally.</li> </ul>	<ul style="list-style-type: none"> <li>• Wear a medical alert bracelet.</li> <li>• Watch for symptoms of hypoglycemia. Test blood glucose to confirm, then consume a snack of 15 to 20 g carbohydrates, and retest in 15 to 20 min and repeat treatment if still low.</li> <li>• Carry a carbohydrate snack at all times.</li> <li>• Report recurring episodes of hypoglycemia to provider.</li> </ul>
<ul style="list-style-type: none"> <li>• Lipohypertrophy</li> </ul>	<ul style="list-style-type: none"> <li>• Monitor skin for subcutaneous fat accumulation.</li> </ul>	<ul style="list-style-type: none"> <li>• Rotate injection sites systematically and space them 1 inch apart.</li> <li>• Do not inject cold insulin.</li> </ul>
<ul style="list-style-type: none"> <li>• Hypokalemia</li> </ul>	<ul style="list-style-type: none"> <li>• Monitor potassium levels.</li> <li>• Monitor ECG.</li> <li>• Monitor for indications of hypokalemia.</li> </ul>	<ul style="list-style-type: none"> <li>• Report weakness, nausea, palpitations, or paresthesias.</li> </ul>
Contraindications	Precautions	Interactions
<ul style="list-style-type: none"> <li>• Hypersensitivity to insulin</li> </ul>	<ul style="list-style-type: none"> <li>• Older adults</li> <li>• Renal or hepatic dysfunction</li> <li>• Fever</li> <li>• Thyroid disease</li> </ul>	<ul style="list-style-type: none"> <li>• Sulfonylureas, meglitinides, beta blockers, salicylates, and alcohol increase hypoglycemic effects.</li> <li>• Thiazide and loop diuretics, sympathomimetics, thyroid hormones, and glucocorticoids increase blood glucose levels, thus counteracting hypoglycemic effects.</li> <li>• Beta blockers mask manifestations of hypoglycemia (tachycardia, tremors).</li> </ul>

Classification	Drug	Onset	Peak	Duration
Rapid-acting	Lispro insulin (Humalog)	Less than 15 min	30 min to 1 hr	3 to 4 hr
Short-acting	Regular insulin (Humulin R)	30 min to 1 hr	2 to 3 hr	5 to 7 hr
Intermediate-acting	NPH insulin (Humulin N)	1 to 2 hr	4 to 12 hr	18 to 24 hr
Long-acting	Insulin glargine (Lantus)	1 hr	None – Levels are steady	24 hr