



DRUG CLASS	How It Works	Generic Name	Brand Name	Cost*
<b>TYPE 2 ORAL MEDICATIONS</b>				
<b>Biguanide</b> (available as a generic)	<b>Lowers the amount of glucose produced by the liver</b>	Metformin	Glucophage	Low
		Metformin extended release	Glumetza, Fortamet	High
<b>Sulfonylureas</b> (available as a generic)	<b>Helps beta cells in the pancreas release more insulin</b>	Glimepiride	Amaryl	Low
		Glipizide	Glucotrol	
		Glipizide extended release	Glucotrol XL	
		Glyburide, glibenclamide	Micronase, Glynase, Diabeta	
<b>Meglitinides</b> (available as a generic)		Nateglinide	Starlix	Moderate
		Repaglinide	Prandin	
<b>TZDs</b> (available as a generic)	<b>Helps insulin work better in muscle and fat cells. Lowers glucose production in the liver.</b>	Pioglitazone	Actos	Low
<b>Alpha-glucosidase inhibitors</b> (available as a generic)	<b>Blocks the breakdown of starches in the intestines</b>	Acarbose	Precose	Moderate
		Miglitol	Glyset	
<b>DPP-4 inhibitors</b> (not available as a generic)	<b>Prevents the breakdown of GLP-1, a compound in the body that lowers blood glucose levels</b>	Alogliptin	Nesina	High
		Linagliptin	Tradjenta	
		Saxagliptin	Onglyza	
		Sitagliptin	Januvia	
<b>Bile acid sequestrants</b> (not available as a generic)	<b>Lowers cholesterol and blood glucose levels</b>	Colesevelam	Welchol	High
<b>Dopamine-2 agonists</b> (not available as a generic)	<b>Lowers blood glucose levels after a meal</b>	Bromocriptine quick release	Cycloset	High

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<b>SGLT2 inhibitors</b> (not available as a generic)	<b>Blocks glucose from being reabsorbed by the kidneys. Excess glucose is released in the urine.</b>	Canagliflozin	Invokana	High
		Dapagliflozin	Farxiga	
		Empagliflozin	Jardiance	

\*Cost is based on the lowest-priced drug in its class. Low-cost drugs cost less than \$1 per day. Medium-cost drugs cost between \$1 and \$2 per day. High-cost drugs cost more than \$2 per day. There is much variation in cost, even within drug classes. Each medication has its own side effects; read labels carefully to be sure you know what they are. The sulfonylureas chlorpropamide (Diabinese) and tolazamide and the TZD rosiglitazone (Avanda) are available but rarely prescribed.

#### Oral Combination Therapy

Because the drugs listed in this chart act in different ways to lower blood glucose levels, providers will often prescribe multiple drugs to a patient. For example, a doctor might prescribe both a biguanide and a sulfonylurea. Several of the more popular combinations of oral drugs can be prescribed together in a single pill.

### TYPE 2 INJECTED MEDICATIONS (NON-INSULIN)

<b>Amylin</b> (not available as a generic)	<b>Slows food moving through the stomach. Also indicated for type 1 diabetes.</b>	Pramlintide	Symlin	High
<b>GLP-1 receptor agonists</b> (not available as a generic)	<b>Helps release insulin when blood glucose is high and lower the amount of glucose produced by the liver.</b>	Abiglutide	Eperzan, Tanzeum	High
		Dulaglutide	Trulicity	
		Exenatide	Byetta	
		Exenatide extended release	Bydureon	
		Liraglutide	Victoza	
		Lixisenatide	Adlyxin	

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#### Injected Combination Therapy

One injectable type 2 medication on the market combines insulin with a GLP-1 receptor agonist. Insulin glargine/lixisenatide (Soliqua 100/33) works in two ways. The insulin helps glucose enter the cells to be used as fuel. The GLP-1 helps release insulin when blood glucose is high and lower the amount of glucose.

GENERIC NAME	Brand Name	Manufacturer	Form	Delivery	Onset	Peak	Duration
<b>RAPID-ACTING INSULIN</b>							
<b>Insulin aspart</b>	<b>NovoLog</b>	Novo Nordisk	Analog	Syringe; prefilled, 300-unit disposable pen; reusable pen with 300-unit cartridges; pump	10 to 20 min.	40 to 50 min.	3 to 5 hours
<b>Insulin glulisine</b>	<b>Apidra</b>	Sanofi	Analog	Syringe; prefilled, 300-unit disposable pen; pump	10 to 20 min.	30 to 90 min.	2 to 4 hours
<b>Insulin human</b> (inhaled powder)	<b>Afrezza</b>	MannKind Corp.	Human	Inhaler with 4-, 8-, and 12-unit cartridges	3 to 7 min.	12 to 15 min.	2.5 to 3 hours
<b>Insulin lispro</b>	<b>Humalog*<sup>A</sup></b>	Eli Lilly and Co.	Analog	Syringe; prefilled, 300-unit disposable pen; reusable pen with 300-unit cartridges; prefilled, 600-unit disposable pen; pump	10 to 20 min.	30 to 90 min.	3 to 5 hours
<b>SHORT-ACTING INSULIN</b>							
<b>Regular</b>	<b>Humulin R<sup>+</sup></b>	Eli Lilly and Co.	Human	Syringe	30 to 60 min.	2 to 4 hours	5 to 8 hours
<b>Regular</b>	<b>Novolin R, ReliOn Novolin R</b>	Novo Nordisk	Human	Syringe	30 min.	80 to 120 min.	Up to 8 hours
<b>INTERMEDIATE-ACTING INSULIN</b>							
<b>NPH</b>	<b>Humulin N</b>	Eli Lilly and Co.	Human	Syringe; prefilled, 300-unit disposable pen	1 to 3 hours	8 hours	12 to 16 hours
<b>NPH</b>	<b>Novolin N, ReliOn Novolin N</b>	Novo Nordisk	Human	Syringe	90 min.	4 to 12 hours	Up to 24 hours
<b>LONG-ACTING INSULIN</b>							
<b>Insulin detemir</b>	<b>Levemir</b>	Novo Nordisk	Analog	Syringe; prefilled, 300-unit disposable pen	1.6 hours	No peak	Up to 24 hours
<b>Insulin glargine</b>	<b>Lantus</b>	Sanofi	Analog	Syringe; prefilled, 300-unit disposable pen	1 hour	No peak	24 hours
<b>Insulin glargine</b>	<b>Basaglar</b>	Eli Lilly and Co.	Analog	Prefilled, 300-unit disposable pen	1 hour	No peak	24 hours

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GENERIC NAME	Brand Name	Manufacturer	Form	Delivery	Onset	Peak	Duration
<b>ULTRA-LONG-ACTING INSULIN</b>							
<b>Insulin degludec</b>	<b>Tresiba*<sup>^</sup></b>	Novo Nordisk	Analog	Prefilled, 300-unit disposable pen; prefilled, 600-unit disposable pen	1 hour	No peak	At least 42 hours
<b>Insulin glargine (U-300)</b>	<b>Toujeo<sup>^</sup></b>	Sanofi	Analog	Prefilled, 450-unit disposable pen	6 hours	No peak	36 hours
<b>INSULIN MIXTURES</b>							
<b>50% lispro protamine (NPL)/ 50% insulin lispro</b>	<b>Humalog Mix 50/50</b>	Eli Lilly and Co.	Analog	Syringe; prefilled, 300-unit disposable pen	10 to 15 min.	1 to 4 hours	16 to 22 hours
<b>75% lispro protamine (NPL)/ 25% insulin lispro</b>	<b>Humalog Mix 75/25</b>	Eli Lilly and Co.	Analog	Syringe; prefilled, 300-unit disposable pen	10 to 15 min.	1 to 3 hours	16 to 22 hours
<b>70% aspart protamine/30% insulin aspart</b>	<b>NovoLog Mix 70/30<sup>-</sup></b>	Novo Nordisk	Analog	Syringe; prefilled, 300-unit disposable pen	10 to 20 min.	1 to 3 hours	Up to 24 hours
<b>70% NPH/30% Regular</b>	<b>Humulin 70/30</b>	Eli Lilly and Co.	Human	Syringe; prefilled, 300-unit disposable pen	30 to 60 min.	1 to 5 hours	12 to 16 hours
<b>70% NPH/30% Regular</b>	<b>Novolin 70/30<sup>-</sup>, ReliOn Novolin 70/30</b>	Novo Nordisk	Human	Syringe	30 min.	4.2 hours	Up to 24 hours
<b>LESS COMMONLY USED INSULIN</b>							
<b>Regular U-500</b>	<b>Humulin R U-500<sup>+^</sup></b>	Eli Lilly and Co.	Human	Syringe	30 min.	4 to 8 hours	Up to 24 hours

**KEY:** \*Note difference between Humalog and Humalog U-200. Note difference between Tresiba and Tresiba U-200. <sup>+</sup>Note difference between Humulin R and Humulin R U-500. <sup>-</sup>Note difference between NovoLog Mix 70/30 (70% aspart protamine/30% insulin aspart) and Novolin 70/30 (70% NPH/30% Regular). <sup>^</sup>U-100 is the standard concentration of insulin. U-200, U-300, and U-500 are increasingly higher concentrations. Higher concentrations of insulin are typically prescribed for people who need very large doses of insulin. The duration of action for human insulin and NPL-containing mixtures will increase as the dose increases. Only NPH insulin and mixtures containing NPH or NPL are cloudy; all other insulins are clear.