

Drug Class and How It Works	Brand and Generic Names	Manufacturer	Usual Starting Dose
INSULIN SECRETOGOGUES Sulfonylureas: The first three types of oral diabetes medications listed here—the sulfonylureas, the meglitinides and the phenylalanine derivatives—act by causing the pancreas to secrete more insulin. Because of this action of increasing insulin production, which in turn has the potential to cause hypoglycemia (low blood glucose), these three types of drugs are also called hypoglycemic agents or insulin secretagogues.	Amaryl (glimepiride)	Aventis	1 mg to 2 mg once a day, taken with the first meal.
	Diabinese (chlorpropamide)	Pfizer	100 mg to 250 mg.
	DiaBeta (glyburide)	Aventis	2.5 mg or 5 mg a day, taken at the first meal of the day. For those more sensitive to hypoglycemic agents, the recommended dose is 1.25 mg.
	Micronase (glyburide)	Pharmacia & Upjohn	2.5 mg or 5 mg a day, taken at the first meal of the day. For those more sensitive to hypoglycemic agents, the recommended dose is 1.25 mg.
	Glynase (glyburide)	Aventis	1.5 mg a day, taken at the first meal of the day. For those more sensitive to hypoglycemic agents, the recommended dose is 0.75 mg.
	Glucotrol (glipizide)	Pfizer	5 mg a day, taken before the first meal of the day. For the elderly and those with liver disease, the recommended dose is 2.5 mg.
	Glucotrol XL extended-release tablets (glipizide)	Pfizer	2.5 mg or 5 mg a day, taken at the first meal of the day.
Meglitinides: Hypoglycemic agents or insulin secretagogues; see the entry for sulfonylureas.	Prandin (repaglinide)	Novo Nordisk	Available in 0.5 mg, 1 mg and 2 mg tablets. If you've never taken an oral hypoglycemic agent and your A1C is less than 8%, the starting dose is 0.5 mg before each meal. If you've previously been treated with an oral hypoglycemic agent and your A1C is greater than 8%, the starting dose is 1 mg or 2 mg before each meal.
Phenylalanine Derivatives: Hypoglycemic agents or insulin secretagogues; see the entry for sulfonylureas.	Starlix (nateglinide)	Novartis	Available in 60 mg and 120 mg tablets. The recommended starting dose is 120 mg before each main meals. In patients who are near their A1C goal, 60 mg is the starting dose.
Biguanides: These drugs work by decreasing the liver's glucose production.	Glucophage* (metformin)	Bristol-Myers Squibb	Generally, significant effects are not seen with doses below 1,500 mg a day, but starting with lower doses and gradually increasing is recommended to minimize gastrointestinal reactions. The suggested starting dose is one 500 mg tablet taken with both the morning and evening meals, or one 850 mg tablet taken once a day with the morning meal.
	Metformin* (generic)	Teva Pharmaceuticals	
	Riomet* (metformin oral solution)	Ranbaxy	
	Glucophage XR* Extended-release tablets (metformin)	Bristol-Myers Squibb	

* Lactic acidosis—a rare but very serious (often fatal) complication—has been associated with the use of Glucophage (metformin). However, the reported incidence of lactic acidosis in people taking this medication is very low. Lactic acidosis happens more often in people with kidney problems. Signs of lactic acidosis are feeling very weak, tired or uncomfortable; experiencing unusual muscle pain, trouble breathing or unusual stomach discomfort; feeling cold, dizzy or lightheaded; suddenly developing a slow or irregular heartbeat. Contact your physician if your medical condition suddenly changes.


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	Maximum Daily Dose	Side Effects and Special Considerations	Average Cost**
	8 mg	All sulfonylureas can cause hypoglycemia and weight gain. May cause sun sensitivity. Sulfonylureas are not approved for use during pregnancy or lactation.	\$81.19
	500 mg	Diabinese is very long-acting (72 hours). Caution advised for use by the elderly and those with kidney disease. Diabinese may cause a flushing (reddened face) reaction with alcohol use. May cause low blood sodium problems.	\$58.29 (\$49.78 generic)
	20 mg. Doses of 15 mg or more should be divided and given twice a day before meals.	-	\$107.29 (\$52.69 generic)
	20 mg. Doses of 15 mg or more should be divided and given twice a day before meals.	-	\$123.29 (\$52.69 generic)
	12 mg. Doses of more than 6 mg a day should be divided and given twice a day before meals.	-	\$95.69
	40 mg	Take 30 minutes before a meal for greater effectiveness.	\$133.19 (\$60.49 generic)
	20 mg	May be taken with a meal. Do not divide, crush or chew these tablets.	\$61.49
	16 mg	Prandin may be used by people with kidney disease. Prandin and Starlix work faster than sulfonylureas and have a shorter duration of action. They may cause hypoglycemia, but this is less likely than with sulfonylureas. Prandin and Starlix also cause less weight gain than sulfonylureas. Do not take a dose if you are skipping a meal. Do not take Prandin or Starlix in combination with sulfonylureas. Prandin or Starlix may be used in combination with metformin. Not approved for use during pregnancy or lactation.	\$274.39
	360 mg		\$111.99
	2,500 to 2,550 mg per day. Maximum effective dose is 2,000 mg per day.	Metformin rarely causes hypoglycemia when used alone. Metformin does not cause weight gain and does improve triglycerides. Gastrointestinal disturbances such as diarrhea, nausea, vomiting, abdominal bloating and flatulence occur in up to one-third of users. Minimize side effects by taking with food. Do not use if kidney disease or active liver disease is present. Use caution with people 80 years old and older, or if heart failure is present. Do not use during medical tests that involve IV contrast drugs. Do not use for people who are going to have surgery. Do not use for people with significant alcohol intake. Not approved for use during pregnancy or lactation.	\$115.59
			\$76.79
	2550 mg (25.5 ml) in divided doses with meals.	-	\$100.00
	Dosage increases should be made in increments of 500 mg or 750 mg weekly, up to a maximum of 2,000 mg or 2,250 mg taken once daily with the evening meal.	See the entry for Glucophage/metformin. In some clinical trials, Glucophage XR lost the triglyceride-lowering benefit. Do not divide, crush or chew these tablets.	\$116.09

Chart prepared by Brian Gates, PharmD; Cindy Onufer, RN, MA, BC-ADM, CDE; Stephen Setter, PharmD, CGP, DVM, CDE

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<p>Alpha-Glucosidase Inhibitors: These drugs work in the intestines to slow the digestion of some carbohydrates so that after-meal blood glucose peaks are not so high.</p>	<p>Precose (acarbose)</p> 	Bayer	25 mg (half a 50 mg tablet), taken orally three times a day at the start of each main meal.
	<p>Glyset (miglitol)</p>	Pharmacia & Upjohn	25 mg to 50 mg taken with meals.
<p>Thiazolidinediones (glitazones, "TZDs"): These drugs help the muscle cells respond to insulin and use glucose more effectively.</p>	<p>Avandia (rosiglitazone maleate)</p>	GlaxoSmithKline	4 mg a day, given as a single dose or in two divided doses.
	<p>ACTOS (pioglitazone HCl)</p>	Takeda	15 mg once daily, taken with or without food.
<p>DPP-4 Inhibitors: enhance a natural body system called the incretin system, which helps to regulate glucose by affecting the beta cells and alpha cells in the pancreas. The novel mechanism of action of DPP-4 inhibitors is glucose-dependent, responding to the presence of elevated glucose and resulting in the release of insulin and decrease of glucagons only when needed, thereby lowering the potential for hypoglycemia.</p>	<p>JANUVIA (sitagliptin phosphate)</p>	Merck & Co., Inc.	100 mg once daily, with or without food, for all approved indications.



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300 mg per day	Abdominal pain, flatulence and diarrhea tend to return to pretreatment levels as therapy continues. Take with the first bite of food for maximum effectiveness. Not approved for use during pregnancy or lactation. When these medications are used in combination with insulin, meglitinides or sulfonylureas, hypoglycemia may occur and must be treated with pure glucose (tablets or gel) or milk since Precose and Glyset delay the absorption of other carbohydrates.	\$159.09
300 mg per day (100 mg with each meal)		\$113.37
8 mg per day	Blood tests to check for serious liver problems should be conducted before therapy, and periodically thereafter as determined by a physician. TZDs rarely cause hypoglycemia when used alone. Not approved for use during pregnancy or lactation. TZDs generally take four weeks or more to become effective. Avandia is approved for use with insulin in doses of 4 mg per day or less, but not at the 8 mg per day dose. Must be used carefully in people with congestive heart failure. Possibility of fluid retention; contact your physician if this occurs. Your doctor should check your eyes regularly. Very rarely, some people have experienced vision changes due to swelling in the back of the eye while taking Avandia.	\$134.29
45 mg per day	ACTOS must be used with caution in people with congestive heart failure. Blood tests to check for serious liver problems should be conducted before therapy, and periodically thereafter as determined by a physician. ACTOS in combination with insulin may be initiated at 15 mg or 30 mg once daily. The dose of ACTOS should not exceed 45 mg once daily in monotherapy or in combination with sulfonylurea, metformin, or insulin.	\$191.19
100 mg once daily	In clinical trials, JANUVIA demonstrated an overall incidence of side effects comparable to placebo. The most common side effects reported with JANUVIA (≥ 5 percent and higher than placebo) were stuffy or runny nose and sore throat, upper respiratory infection, and headache. Across the clinical program, JANUVIA once-daily was weight neutral compared to placebo and the overall incidence of hypoglycemia was similar to placebo. Because JANUVIA is renally eliminated, and to achieve plasma concentrations of JANUVIA similar to those in patients with normal renal function, a dosage adjustment is recommended in patients with moderate renal insufficiency and in patients with severe renal insufficiency or with end-stage renal disease (ESRD) requiring hemodialysis or peritoneal dialysis. Safety and effectiveness of JANUVIA in pediatric patients have not been established. There are no adequate and well-controlled studies in pregnant women. JANUVIA should be used during pregnancy only if clearly needed. Caution should be exercised when JANUVIA is administered to a nursing woman.	\$4.86 per tablet