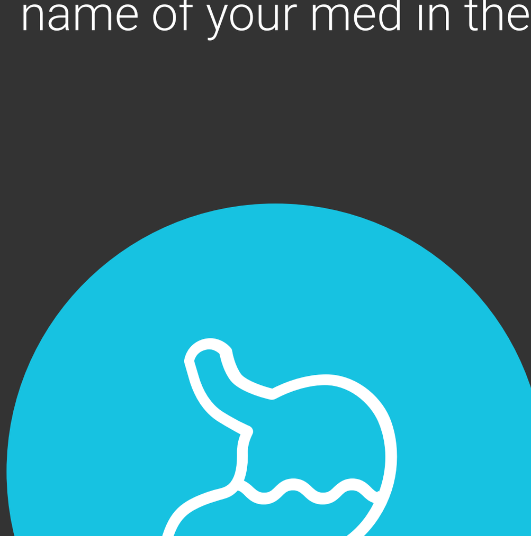
ONE DROP guide to

T2D meds

There are 9 classes of type 2 diabetes (T2D) medications (meds), and each helps the body lower blood glucose in a different way.

Which class of med you are taking?

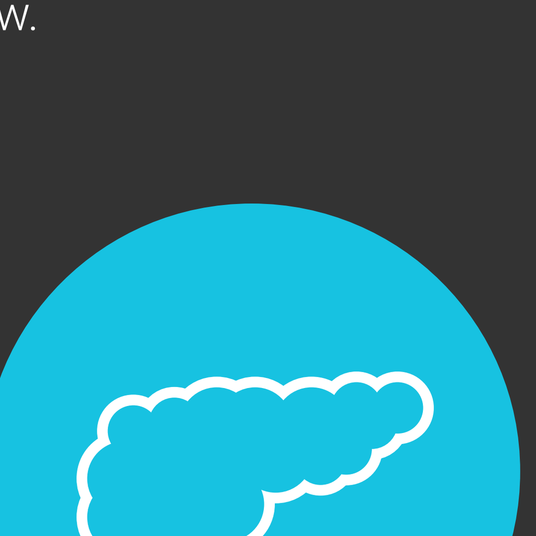
To find out, read your medication label or see if you can find the name of your med in the table below.



As food digests, the stomach empties.

DPP-4 Inhibitors & GLP-1 Analogs slow down stomach emptying. Alpha-1 Glucosidase Inhibitors delay digestion of starches after eating, which reduces blood glucose spikes after meals.

- DPP-4 Inhibitor
- GLP-1 Analog
- Alpha-1 Glucosidase



Insulin is produced by the pancreas to lower blood glucose.

DPP-4 Inhibitors and GLP-1 Analogs increase insulin production only when blood glucose is high. Sulfonylureas and Glinides increase insulin production regardless of blood glucose levels, increasing the risk of hypoglycemia.

- Sulfonylureas
- DPP-4 Inhibitor
- GLP-1 Analog
- Glinide

Glucose is released by the liver to raise blood glucose.

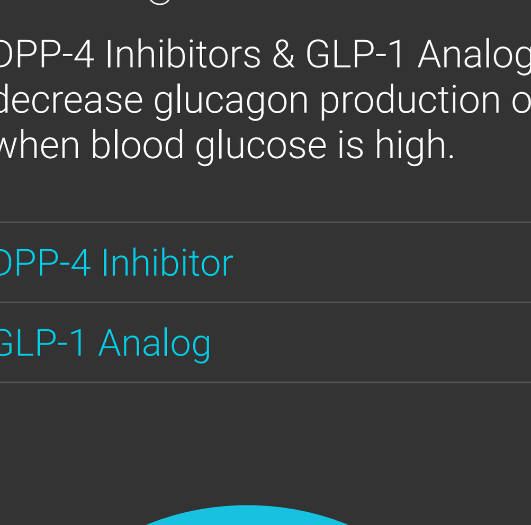
Biguanides (e.g. metformin) & TZDs reduce glucose production by the liver.

- Biguanide
- TZD

Glucagon is produced by the pancreas to raise blood glucose.

DPP-4 Inhibitors & GLP-1 Analogs decrease glucagon production only when blood glucose is high.

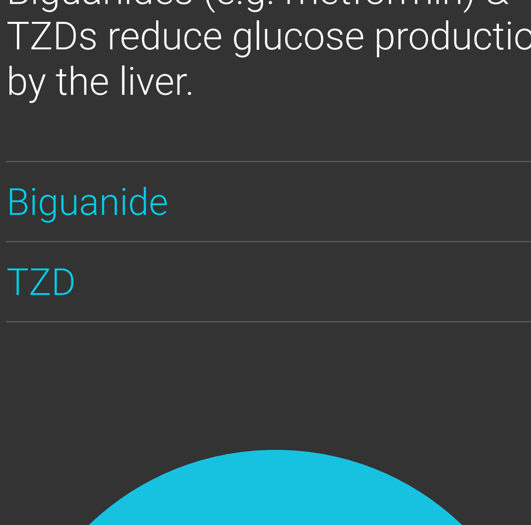
- DPP-4 Inhibitor
- GLP-1 Analog



Fat & muscle cells need glucose from your blood for energy.

Biguanides & TZDs decrease insulin resistance in fat and muscle cells.

- Biguanide
- TZD



Kidneys filter some glucose out of the blood, but also reabsorb some and return it to the bloodstream.

SGLT-2 Inhibitors reduce reabsorption of glucose by the kidneys.

- SGLT-2 Inhibitor

Medication Types

The table below describes how each type of medication lowers blood glucose and identifies pros and cons.

Medication

Brand & Generic Names*	How does it lower blood glucose?	Pros	Cons
Biguanide			
Brand Glucophage, Glumetza, Fortamet, Riomet, Glucophage XR, Glucophage SR **Generic** metformin	Decreases glucose production by the liver Decreases insulin resistance in muscle and fat	Minimal side effects Weight loss Inexpensive	Possible gastrointestinal (GI) effects (bloating, gas, diarrhea, abdominal pain, loss of appetite) Fewer GI side effects with the extended release forms (XR or SR). Should be avoided by people with impaired kidney function and the very elderly
DPP-4 Inhibitor			
Brand Januvia, Onglyza, Tradjenta, Nesina / Vipidia, Galvus **Generic** sitagliptina, saxagliptin, linagliptin, alogliptin, vildagliptin	Increases the amount of insulin produced by the pancreas Decreases the amount of glucagon produced by the pancreas Slows digestion	Safe Weight neutral	
SGLT-2 Inhibitor			
Brand Invokana, Farxiga, Jardiance **Generic** canagliflozin, dapagliflozin, empagliflozin	Reduces reabsorption of glucose by the kidneys	Weight loss Increased life expectancy Reduces systolic blood pressure	Genital yeast infections Urinary tract infections
GLP-1 Analog			
Brand Byetta, Bydureon, Victoza, Lyxumia, Trulicity, Tanzeum **Generic** exenatide, exenatide QW, liraglutide, lixisenatide, dulaglutide, albiglutide	Increases the amount of insulin produced by the pancreas Reduces the amount of glucagon produced by the pancreas Slows digestion	Weight loss Potent reduction of mean glucose and A1C	Possible GI effects (bloating, gas, diarrhea, abdominal pain, loss of appetite) Need to gradually increase dosage
Thiazolidinedione (TZD)			
Brand Actos, Avandia **Generic** rosiglitazone, pioglitazone	Decreases insulin resistance in muscle and fat Decreases glucose production by the liver	Low risk of low blood glucose	Weight gain Fluid retention
Sulfonylurea			
Brand Glucotrol, Glucotrol XL, GlipiZIDE XL, DiaBeta, Glynase PresTab, Amaryl **Generic** glipizide, glyburide, glimeperide	Increases the amount of insulin produced by the pancreas	Inexpensive	Weight gain Fluid retention Higher risk of low blood glucose
Glinide			
Brand Prandin, Starlix **Generic** repaglinide, nateglinide	Increases the amount of insulin produced by the pancreas	Works quickly to lower high blood glucose	Weight gain Fluid retention Risk of low blood glucose
Alpha-1 Glucosidase Inhibitor			
Brand Precose, Glyset **Generic** acarbose, miglitol	Delays absorption of carbohydrates after eating	Popular in Asia with high-carb diets Low cost	Possible GI effects (bloating, gas, diarrhea, abdominal pain, loss of appetite)
Insulin			
Multiple types available See One Drop Guide to Insulin for details	Increases glucose uptake by muscle, liver and fat tissues	Very effective at lowering blood glucose	Risk of low blood glucose (hypoglycemia) Local reactions at injection site

*There may be additional brand names for a particular medication. If your particular brand of medication is not listed here, please see your medication's package insert for additional information.

References:
1. Rodbard HW, et al. Statement by an American Association of Clinical Endocrinologists/American College of Endocrinology consensus panel on type 2 diabetes mellitus: an algorithm for glycemic control. Endocr Pract. 2009 Sep-Oct;15(6):540-59.

2. Garber AJ, et al. Consensus Statement By The American Association Of Clinical Endocrinologists And American College Of Endocrinology on the comprehensive type 2 diabetes management algorithm - 2016 executive summary. Endocr Pract. 2016 Jan;22(1):84-113.

3. American Diabetes Association. Approaches to glycemic treatment. Sec. 7. In Standards of Medical Care in Diabetes—2016. Diabetes Care 2016; 39 (Suppl. 1):S52–S59

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