



Metformin

Generic Name: metformin (met FOR min)

Brand Names: *Fortamet, Glucophage, Glucophage XR, Glumetza, Riomet*

What is metformin?

Metformin is an oral diabetes medicine that helps control blood sugar levels.

Metformin is used to improve blood sugar control in people with **type 2 diabetes**. It is sometimes used in combination with insulin or other medications, but this medicine is not for treating type 1 diabetes.

Metformin may also be used for purposes not listed in this medication guide.

Important information

You should not use metformin if you have severe kidney disease, or if you are in a state of diabetic ketoacidosis (call your doctor for treatment with insulin).

If you need to have any type of x-ray or CT scan using a dye that is injected into your veins, you will need to temporarily stop taking metformin.

This medicine may cause a serious condition called **lactic acidosis**. Get emergency medical help if you have even mild symptoms such as: muscle pain or weakness, numb or cold feeling in your arms and legs, trouble breathing, stomach pain, nausea with vomiting, slow or uneven heart rate, dizziness, or feeling very weak or tired.

Before taking this medicine

You should not use metformin if you are allergic to it, or if you have:

- severe kidney disease; or
- if you are in a state of diabetic ketoacidosis (call your doctor for treatment with insulin).

If you need to have any type of x-ray or CT scan using a dye that is injected into your veins, you will need to temporarily stop taking metformin.

To make sure metformin is safe for you, tell your doctor if you have:

- kidney disease;
- liver disease;
- a history of heart disease or recent heart attack;
- if you have recently taken chlorpropamide; or
- if you are over 80 years old and have not recently had your kidney function checked.

Some people taking metformin develop a serious condition called **lactic acidosis**. This may be more likely if you have liver or kidney disease, congestive heart failure, a severe infection, if you are dehydrated, or if you drink large amounts of alcohol. Talk with your doctor about your risk.

It is not known whether this medicine will harm an unborn baby. Tell your doctor if you are pregnant or plan to become pregnant while using this medicine.

It is not known whether metformin passes into breast milk or if it could harm a nursing baby. You should not breast-feed while using this medicine.

Metformin should not be given to a child younger than 10 years old. **Extended-release formulations (Glucophage XR, Glumetza, Fortamet)** are not approved for use by anyone younger than 18 years old.

How should I take metformin?

Take metformin exactly as prescribed by your doctor. Follow all directions on your prescription label. Your doctor may occasionally change your dose to make sure you get the best results. Do not use this medicine in larger or smaller amounts or for longer than recommended.

Take metformin with a meal, unless your doctor tells you otherwise. Some forms of metformin are taken only once daily with the evening meal. Follow your doctor's instructions.

Do not crush, chew, or break an extended-release tablet. Swallow it whole.

Your blood sugar will need to be checked often, and you may need other blood tests at your doctor's office.

Low blood sugar (**hypoglycemia**) can happen to everyone who has diabetes. Symptoms include headache, hunger, sweating, confusion, irritability, dizziness, or feeling shaky. Always keep a source of sugar with you in case you have low blood sugar. Sugar sources include fruit juice, hard candy, crackers, raisins, and non-diet soda. Be sure your family and close friends know how to help you in an emergency.

If you have severe hypoglycemia and cannot eat or drink, use a glucagon injection. Your doctor can prescribe a glucagon emergency injection kit and tell you how to use it.

Check your blood sugar carefully during times of stress, travel, illness, surgery or medical emergency, vigorous exercise, or if you drink alcohol or skip meals. These things can affect your glucose levels and your dose needs may also change. **Do not change your medication dose or schedule without your doctor's advice.**

Metformin is only part of a complete treatment program that may also include diet, exercise, weight control, and special medical care. Follow your doctor's instructions very closely.

Your doctor may have you take extra vitamin B12 while you are taking metformin. Take only the amount of vitamin B12 that your doctor has prescribed.

Store at room temperature away from moisture, heat, and light.

See also: Dosage Information (in more detail)

What happens if I miss a dose?

Take the missed dose as soon as you remember (be sure to take the medicine with food). Skip the missed dose if it is almost time for your next scheduled dose. Do not take extra medicine to make up the missed dose.

What happens if I overdose?

Seek emergency medical attention or call the Poison Help line at 1-800-222-1222. **An overdose of metformin may cause lactic acidosis, which may be fatal.**

What should I avoid while taking metformin?

Avoid drinking alcohol. It lowers blood sugar and may increase your risk of lactic acidosis while taking metformin.

Metformin side effects

Get emergency medical help if you have **signs of an allergic reaction to metformin**: hives; difficult breathing; swelling of your face, lips, tongue, or throat.

Some people develop lactic acidosis while taking metformin. Early symptoms may get worse over time and this condition can be fatal. Get emergency medical help if you have even mild symptoms such as:

- muscle pain or weakness;

- numb or cold feeling in your arms and legs;
- trouble breathing;
- feeling dizzy, light-headed, tired, or very weak;
- stomach pain, nausea with vomiting; or
- slow or uneven heart rate.

Common metformin side effects may include:

- nausea, vomiting, upset stomach; or
- diarrhea.

This is not a complete list of side effects and others may occur. Call your doctor for medical advice about side effects. You may report side effects to FDA at 1-800-FDA-1088.

See also: Side effects (in more detail)

Metformin dosing information

Usual Adult Dose for Diabetes Type 2:

Immediate-release:

Initial dose: 500 mg orally twice a day or 850 mg orally once a day

Dose titration: Increase in 500 mg weekly increments or 850 mg every 2 weeks as tolerated

Maintenance dose: 2000 mg daily

Maximum dose: 2550 mg daily

Comments: Take in divided doses 2 to 3 times a day with meals. Titrate slowly to minimize gastrointestinal side effects. In general, significant responses are not observed with doses less than 1500 mg/day.

Extended-release:

Initial dose: 500 to 1000 mg orally once a day

Dose titration: Increase in 500 mg weekly increments as tolerated

Maintenance dose: 2000 mg daily

Maximum dose: 2500 mg daily

Comments: If glycemic control is not achieved with once a day administration of an extended-release product, consider dividing doses. If higher doses are required, may switch to immediate-release product.

Use: To improve glycemic control in adults with type 2 diabetes mellitus as an adjunct to diet and exercise.

Usual Pediatric Dose for Diabetes Type 2:

10 years or older:

Immediate-release:

Initial dose: 500 mg orally twice a day

Dose titration: Increase in 500 mg weekly increments as tolerated

Maintenance dose: 2000 mg daily

Maximum dose: 2000 mg daily

Comments: Take in divided doses 2 to 3 times a day with meals. Titrate slowly to minimize gastrointestinal side effects.

Safety and effectiveness of metformin extended-release has not been established in pediatric patients less than 18 years of age.

Use: To improve glycemic control in children with type 2 diabetes mellitus as an adjunct to diet and exercise.

What other drugs will affect metformin?

Tell your doctor about all your current medicines and any you start or stop using, especially:

- digoxin; or
- furosemide.

You may be more likely to have hyperglycemia (high blood sugar) if you take metformin with other drugs that can raise blood sugar, such as:

- phenytoin;
- birth control pills or hormone replacement therapy;
- diet pills or medicines to treat asthma, colds or allergies;
- a diuretic or "water pill";
- heart or blood pressure medication;
- niacin (Advicor, Niaspan, Niacor, Simcor, Slo-Niacin, and others);
- phenothiazines (Compazine and others);
- steroid medicine (prednisone, dexamethasone, and others); or
- thyroid medicine (Synthroid and others).

This list is not complete. Other drugs may increase or decrease the effects of metformin on lowering your blood sugar. Tell your doctor about all medications you use. This includes prescription and over-the-counter medicines, vitamins, and herbal products. Not all possible interactions are listed in this medication guide.

Where can I get more information?

- Your pharmacist can provide more information about metformin.
- Remember, keep this and all other medicines out of the reach of children, never share your medicines with others, and use metformin only for the indication prescribed.
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