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2. Metformin

Metformin

Generic name: metformin [*met-FOR-min*]

Brand names: [Fortamet](#), [Glucophage](#), [Glucophage XR](#), Glumetza, Riomet

Drug class: [Non-sulfonylureas](#)

Medically reviewed by [Melisa Puckey, BPharm](#). Last updated on Aug 22, 2023.

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What is metformin?

Metformin is an FDA-approved antidiabetic agent that manages high blood sugar levels in type 2 diabetes patients. It reduces glucose absorption from the intestines, lowers liver glucose production, and improves insulin sensitivity.

Metformin is recommended with dietary changes and exercise for better results.

Managing blood sugar levels with medications like metformin can prevent complications such as kidney damage, nerve issues, blindness, amputations, and sexual dysfunction. Effective diabetes control can also lower the risk of heart attacks or strokes.

Warnings

You should not use metformin if you have severe kidney disease, metabolic acidosis, or [diabetic ketoacidosis](#) (call your doctor for treatment).

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

Though extremely rare, you may develop **lactic acidosis**, a dangerous build-up of lactic acid in your blood. Call your doctor or get emergency medical help if you have unusual muscle pain, trouble breathing, stomach pain, [dizziness](#), feeling cold, 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
- [metabolic acidosis](#) or diabetic ketoacidosis (call your doctor for treatment).

If you need to have surgery or any type of x-ray or CT scan using a dye that is injected into your veins, you may need to temporarily stop taking metformin. Be sure your caregivers know ahead of time that you are using this medication.

Tell your doctor if you have ever had:

- kidney disease (your kidney function may need to be checked before you take this medicine);
- high ketone levels in your blood or urine;
- heart disease, congestive [heart failure](#);
- liver disease; or
- if you also use [insulin](#), or other oral diabetes medications.

You may develop **lactic acidosis**, a dangerous build-up of lactic acid in your blood. This may be more likely if you have other medical conditions, a severe infection, chronic [alcoholism](#), or if you are 65 or older. Ask your doctor about your risk.

Follow your doctor's instructions about using metformin **if you are pregnant or you become pregnant**. Controlling diabetes is very important during pregnancy, and having high blood sugar may cause complications in both the mother and the baby. Tell your doctor if you become pregnant while taking metformin.

Metformin may stimulate ovulation in a premenopausal woman and may increase the risk of unintended pregnancy. Talk to your doctor about your risk.

You should not breastfeed while using this medicine.

Metformin should not be given to a child younger than 10 years old. **Some forms of metformin are not approved for use by anyone younger than 18 years old.**

 [Metformin pregnancy and breastfeeding warnings](#) (more detail)

How should I take metformin?

Take metformin exactly as prescribed by your doctor. Follow all directions on your prescription label and read all medication guides or instruction sheets. Your doctor may occasionally change your dose. Use the medicine exactly as directed.

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.

Measure **liquid medicine** carefully. Shake the **oral suspension** before you measure a dose. Use the dosing syringe provided, or use a medicine dose-measuring device (not a kitchen spoon).

Some tablets are made with a shell that is not absorbed or melted in the body. Part of this shell may appear in your stool. This is normal and will not make the medicine less effective.

You may have low blood sugar (**hypoglycemia**) and feel very hungry, dizzy, irritable, confused, anxious, or shaky. To quickly treat hypoglycemia, eat or drink a fast-acting source of sugar (fruit juice, hard candy, crackers, raisins, or non-diet soda).

Your doctor may prescribe a glucagon injection kit in case you have severe hypoglycemia. Be sure your family or close friends know how to give you this injection in an emergency.

Blood sugar levels can be affected by [stress](#), illness, surgery, exercise, alcohol use, or skipping meals. **Ask your doctor before changing your dose or medication schedule.**

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

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

Your doctor may have you take extra [vitamin B12](#) while you are taking this medicine. Take only the amount of vitamin B12 that your doctor has prescribed.

 [Detailed Metformin dosage information](#)

What happens if I miss a dose?

Take the medicine as soon as you can, but skip the missed dose if it is almost time for your next dose. Do not take two doses at one time.

What happens if I overdose?

Seek emergency medical attention or call the Poison Help line at 1-800-222-1222. **An overdose can cause severe hypoglycemia or lactic acidosis.**

What to avoid

Avoid drinking alcohol. It lowers blood sugar and may increase your risk of [lactic acidosis](#).

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 using this medicine develop lactic acidosis, which can be fatal. **Get emergency medical help if you have even mild symptoms such as:**

- unusual muscle pain;
- feeling cold;
- trouble breathing;
- feeling dizzy, light-headed, tired, or very weak;
- stomach pain, [vomiting](#); or
- slow or irregular heart rate.

Common metformin side effects may include:

- low blood sugar;
- nausea, [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.

 [Metformin side effects](#) (more detail)

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What other drugs will affect metformin?

Many drugs can interact with metformin, making it less effective or increasing your risk of lactic acidosis. This includes prescription and over-the-counter medicines, [vitamins](#), and [herbal products](#). Not all possible interactions are listed here. Tell your doctor about all your current medicines and any medicine you start or stop using.

 [Metformin drug interactions](#) (more detail)

Does metformin interact with my other drugs?

Enter medications to view a detailed interaction report using our [Drug Interaction Checker](#).

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- [Metformin Oral Solution](#)

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- [Metformin Extended Release Tablets \(FDA\)](#)
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Further information

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.

Always consult your healthcare provider to ensure the information displayed on this page applies to your personal circumstances.

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Guide to Weight Loss Drugs

Find out everything you need to know about weight loss drugs in our prescription [weight loss drug guide](#).

DRUG STATUS

Availability

Rx Prescription only

[Pregnancy & Lactation](#)



Risk data available

CSA Schedule*

N/A Not a controlled drug



Approval History



Drug history at FDA



User Reviews & Ratings

6.8 / 10

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