



Metformin

pronounced as (met for' min)

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IMPORTANT WARNING:

Metformin may rarely cause a serious, life-threatening condition called lactic acidosis. Tell your doctor if you have kidney disease. Your doctor will probably tell you not to take metformin. Also, tell your doctor if you are over 65 years old and if you have ever had a heart attack; stroke; diabetic ketoacidosis (blood sugar that is high enough to cause severe symptoms and requires emergency medical treatment); a coma; or heart or liver disease. Taking certain other medications with metformin may increase the risk of lactic acidosis. Tell your doctor if you are taking acetazolamide (Diamox), dichlorphenamide (Keveyis), methazolamide, topiramate (Topamax, in Qsymia), or zonisamide (Zonegran).

Tell your doctor if you have recently had any of the following conditions, or if you develop them during treatment: serious infection; severe diarrhea, vomiting, or fever; or if you drink much less fluid than usual for any reason. You may have to stop taking metformin until you recover.

If you are having surgery, including dental surgery, or any major medical procedure, tell the doctor that you are taking metformin. Also, tell your doctor if you plan to have any x-ray procedure in which dye is injected, especially if you drink or have ever drunk large amounts of alcohol or have or have had liver disease or heart failure. You may need to stop taking metformin before the procedure and wait 48 hours to restart treatment. Your doctor will tell you exactly when you should stop taking metformin and when you should start taking it again.

If you experience any of the following symptoms, stop taking metformin and call your doctor immediately: extreme tiredness, weakness, or discomfort; nausea; vomiting; stomach pain; decreased appetite; deep and rapid breathing or shortness of breath; dizziness; lightheadedness;



fast or slow heartbeat; flushing of the skin; muscle pain; or feeling cold, especially in your hands or feet.

Tell your doctor if you regularly drink alcohol or sometimes drink large amounts of alcohol in a short time (binge drinking). Drinking alcohol increases your risk of developing lactic acidosis or may cause a decrease in blood sugar. Ask your doctor how much alcohol is safe to drink while you are taking metformin.

Keep all appointments with your doctor and the laboratory. Your doctor will order certain tests before and during treatment to check how well your kidneys are working and your body's response to metformin. Talk to your doctor about the risk(s) of taking metformin.

Why is this medication prescribed?

Metformin is used alone or with other medications, including insulin, to treat type 2 diabetes (condition in which the body does not use insulin normally and, therefore, cannot control the amount of sugar in the blood). Metformin is in a class of drugs called biguanides. Metformin helps to control the amount of glucose (sugar) in your blood. It decreases the amount of glucose you absorb from your food and the amount of glucose made by your liver. Metformin also increases your body's response to insulin, a natural substance that controls the amount of glucose in the blood. Metformin is not used to treat type 1 diabetes (condition in which the body does not produce insulin and therefore cannot control the amount of sugar in the blood).

Over time, people who have diabetes and high blood sugar can develop serious or life-threatening complications, including heart disease, stroke, kidney problems, nerve damage, and eye problems. Taking medication(s), making lifestyle changes (e.g., diet, exercise, quitting smoking), and regularly checking your blood sugar may help to manage your diabetes and improve your health. This therapy may also decrease your chances of having a heart attack, stroke, or other diabetes-related complications such as kidney failure, nerve damage (numb, cold legs or feet; decreased sexual ability in men and women), eye problems, including changes or loss of vision, or gum disease. Your doctor and other healthcare providers will talk to you about the best way to manage your diabetes.

How should this medicine be used?

Metformin comes as a liquid, a tablet, and an extended-release (long-acting) tablet to take by mouth. The liquid is usually taken with meals one or two times a day. The regular tablet is usually taken with meals two or three times a day. The extended-release tablet is usually taken once daily with the evening meal. To help you remember to take metformin, take it around the same time(s) every day. Follow the directions on your prescription label carefully, and ask your doctor or pharmacist to explain any part you do not understand. Take metformin exactly as directed. Do not take more or less of it or take it more often than prescribed by your doctor.



Swallow metformin extended-release tablets whole; do not split, chew, or crush them.

Your doctor may start you on a low dose of metformin and gradually increase your dose not more often than once every 1–2 weeks. You will need to monitor your blood sugar carefully so your doctor will be able to tell how well metformin is working.

Metformin controls diabetes but does not cure it. Continue to take metformin even if you feel well. Do not stop taking metformin without talking to your doctor.

Ask your pharmacist or doctor for a copy of the manufacturer's information for the patient.

Other uses for this medicine

This medication may be prescribed for other uses; ask your doctor or pharmacist for more information.

What special precautions should I follow?

Before taking metformin,

- tell your doctor and pharmacist if you are allergic to metformin, any of the ingredients of metformin liquid or tablets, or any other medications. Ask your pharmacist or check the manufacturer's patient information for a list of the ingredients.
- tell your doctor and pharmacist what other prescription and nonprescription medications, vitamins, nutritional supplements, and herbal products you are taking. Be sure to mention any of the following: amiloride (Midamor); angiotensin-converting enzyme (ACE) inhibitors such as benazepril (Lotensin, in Lotrel), captopril, enalapril (Vasotec, in Vaseretic), fosinopril, lisinopril (in Zestoretic), moexipril (Univasc), perindopril (Aceon), quinapril (Accupril), ramipril (Altace), and trandolapril (Mavik); beta-blockers such as atenolol (Tenormin), labetalol (Trandate), metoprolol (Lopressor, Toprol XL), nadolol (Corgard, in Corzide), and propranolol (Hemangeol, Inderal, InnoPran); calcium channel blockers such as amlodipine (Norvasc), diltiazem (Cardizem, Cartia, Diltzac, others), felodipine, isradipine, nifedipine (Adalat, Afeditab CR, Procardia), nimodipine (Nymalize), nisoldipine (Sular), and verapamil (Calan, Covera, Verelan, in Tarka); cimetidine (Tagamet); digoxin (Lanoxin); diuretics ('water pills'); furosemide (Lasix); hormone replacement therapy; insulin or other medications for diabetes; isoniazid (Laniazid, in Rifamate, in Rifater); medications for asthma and colds; medications for mental illness and nausea; medications for thyroid disease; morphine (MS Contin, others); niacin; oral contraceptives ('birth control pills'); oral steroids such as dexamethasone, methylprednisolone (Medrol), and prednisone (Rayos); phenytoin (Dilantin, Phenytek); procainamide; quinidine (in Nuedexta); quinine; ranitidine (Zantac); triamterene (Dyrenium, in Maxzide, others); trimethoprim (Primisol); or



vancomycin (Vancocin). Your doctor may need to change the doses of your medications or monitor you carefully for side effects.

- tell your doctor if you have or have ever had any medical condition, especially those mentioned in the IMPORTANT WARNING section.
- tell your doctor if you are pregnant, plan to become pregnant, or are breastfeeding. If you become pregnant while taking metformin, call your doctor.
- tell your doctor if you eat less or exercise more than usual. This can affect your blood sugar. Your doctor will give you instructions if this happens.

What special dietary instructions should I follow?

Be sure to follow all exercise and dietary recommendations made by your doctor or dietitian. It is important to eat a healthful diet.

What should I do if I forget a dose?

Take the missed dose as soon as you remember it. However, if it is almost time for the next dose, skip the missed dose and continue your regular dosing schedule. Do not take a double dose to make up for a missed one.

What side effects can this medication cause?

This medication may cause changes in your blood sugar. You should know the symptoms of low and high blood sugar and what to do if you have these symptoms.

Metformin may cause side effects. Tell your doctor if any of these symptoms are severe, do not go away, go away and come back, or do not begin for some time after you begin taking metformin:

- diarrhea
- bloating
- stomach pain
- gas
- indigestion
- constipation
- unpleasant metallic taste in mouth
- heartburn
- headache
- flushing of the skin
- nail changes



Some side effects can be serious. If you experience any of these symptoms or those listed in the IMPORTANT WARNING section, call your doctor immediately or get emergency treatment:

- chest pain
- rash

Metformin may cause other side effects. Call your doctor if you have any unusual problems while taking this medication.

If you experience a serious side effect, you or your doctor may send a report to the Food and Drug Administration's (FDA) MedWatch Adverse Event Reporting program online (<http://www.fda.gov/Safety/MedWatch>) or by phone (1-800-332-1088).

What should I know about storage and disposal of this medication?

Keep this medication in the container it came in, tightly closed, and out of reach of children. Store it at room temperature and away from light, excess heat, and moisture (not in the bathroom).

Unneeded medications should be disposed of in special ways to ensure that pets, children, and other people cannot consume them. However, you should not flush this medication down the toilet. Instead, the best way to dispose of your medication is through a medicine take-back program. Talk to your pharmacist or contact your local garbage/recycling department to learn about take-back programs in your community. See the FDA's Safe Disposal of Medicines website (<http://goo.gl/c4Rm4p>) for more information if you do not have access to a take-back program.

It is important to keep all medication out of sight and reach of children as many containers (such as weekly pill minders and those for eye drops, creams, patches, and inhalers) are not child-resistant and young children can open them easily. To protect young children from poisoning, always lock safety caps and immediately place the medication in a safe location – one that is up and away and out of their sight and reach. <http://www.upandaway.org>

In case of emergency/overdose

In case of overdose, call the poison control helpline at 1-800-222-1222. Information is also available online at <https://www.poisonhelp.org/help>. If the victim has collapsed, had a seizure, has trouble breathing, or can't be awakened, immediately call emergency services at 911.



Symptoms of overdose may include hypoglycemia symptoms as well as the following:

- extreme tiredness
- weakness
- discomfort
- vomiting
- nausea
- stomach pain
- decreased appetite
- deep, rapid breathing
- shortness of breath
- dizziness
- lightheadedness
- abnormally fast or slow heartbeat
- flushing of the skin
- muscle pain
- feeling cold

What other information should I know?

Your doctor will tell you how to check your response to this medication by measuring your blood sugar levels at home. Follow these instructions carefully.

If you are taking the extended-release tablets, you may notice something that looks like a tablet in your stool. This is just the empty tablet shell, and this does not mean that you did not get your complete dose of medication.

You should always wear a diabetic identification bracelet to be sure you get proper treatment in an emergency.

Do not let anyone else take your medication. Ask your pharmacist any questions you have about refilling your prescription.

It is important for you to keep a written list of all of the prescription and nonprescription (over-the-counter) medicines you are taking, as well as any products such as vitamins, minerals, or other dietary supplements. You should bring this list with you each time you visit a doctor or if you are admitted to a hospital. It is also important information to carry with you in case of emergencies.



Brand names

- Fortamet[®]
- Glucophage[®]
- Glumetza[®]
- Riomet[®]
- Trijardy[®] (as a combination product containing Empagliflozin, Linagliptin, Metformin)