

# Glucophage (Metformin)

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The medicine **Glucophage®** (metformin) belongs to a class of oral medications for diabetes management called biguanides.

Metformin is usually the first medication used to treat persons with type 2 diabetes, as long as it won't cause any harm to that individual (there are no contraindications). Most people with type 2 diabetes start taking this medicine first to control their diabetes, and they take it in combination with healthy lifestyle choices (like eating a balanced diet and exercising on a consistent basis as recommended by their provider). For some, this may be the only medication that they need to take. Others may need to take this medication along with other medications or insulin.

## **How it works:**

Metformin works in a few different ways. It tells your liver to produce less sugar, and it helps insulin take sugar out of your bloodstream and put it into your body's cells, such as muscle cells, to use it as an energy source. It also decreases the amount of glucose that is absorbed by your intestines.

## **Possible side effects:**

Nausea, bloating, and diarrhea are some of the most common side effects. Vitamin B12 deficiency may also occur, so this level may be checked by your Crossover provider. With elderly patients or patients who have a history of kidney or liver damage, or severe lung problems, it may cause lactic acidosis (a life-threatening condition), so those with these conditions may need to avoid this medication. Signs and symptoms of lactic acidosis may include extreme fatigue, drowsiness, and abdominal pain.

## **Benefits:**

Metformin may lower your bad cholesterol (LDL) and help prevent cardiovascular disease complications from diabetes. It may also promote a small amount of weight loss and does not usually make you gain any weight. Metformin does not make your blood sugar drop suddenly (a condition called hypoglycemia). It is FDA-approved for people ages 10 years and older, and the cost is generally low.

## **Metformin and prediabetes:**

Research studies have shown that metformin can be useful for people who have prediabetes. A large clinical trial called The Diabetes Prevention Program compared three approaches—lifestyle changes (weight loss of 5-7%, exercise, and healthy eating), taking metformin, and taking a placebo—for prevention of progression to diabetes. Lifestyle changes worked the best, showing a 58% decrease in the progression to diabetes compared to taking a placebo. But metformin was also successful, showing a 31% decrease in the progression to diabetes compared to taking a placebo. Metformin is especially effective for those who have a Body Mass Index (BMI) of 35 or above, women who have a history of gestational diabetes, and people between the ages of 25-44.