

# Metformin for Weight Loss

Metformin is a medication that is commonly prescribed for the treatment of type 2 diabetes. It is marketed under the brand name Glucophage and is commonly used to reduce high blood sugar levels in obese and overweight diabetics. Aside from being effective in lowering blood sugar levels, it has also been observed to cause modest weight loss. This resulted in research to investigate whether metformin may be used effectively to achieve weight loss in obese or overweight people without type 2 diabetes. Studies on obese non-diabetic patients have shown that metformin may reduce their body weight and improve blood cholesterol levels. However, since these clinical trials are ongoing, the drug is not yet being marketed as a treatment for weight loss.

## How Metformin Can Reduce Weight

As a drug used to treat type 2 diabetes, metformin reduces blood sugar levels by inhibiting the production of glucose from the liver and by increasing the sensitivity of cells to insulin (a hormone that decreases blood sugar levels). Furthermore, some patients have experienced weight loss. One possible explanation for this may be loss of appetite due to reduced insulin production. One study showed that diabetic patients who took metformin consumed fewer calories and subsequently lost weight.

The effects of metformin on weight loss are enhanced when it is combined with a low carbohydrate diet and regular exercise. According to another study published in Heart Disease, women who were overweight and at risk for diabetes were able to lose weight with metformin when combined with a low-calorie, low-carb diet. They maintained their weight loss for up to 6 months, unlike the control group that discontinued metformin.

Analysis of studies done in non-diabetic adults also shows that metformin helps reduce weight as well as decrease waist circumference, triglycerides, insulin, and blood sugar levels. Other mechanisms proposed in the weight loss effect of metformin include decreasing the absorption of sugars in the gastrointestinal tract, decreasing the cells' resistance to insulin, and increasing the metabolism of fat.

## Side Effects of Metformin

Metformin can be taken safely by diabetic and non-diabetic patients for blood glucose control without a significant drop in blood sugar levels. Moreover, it can prevent weight gain or even cause modest weight loss. The use of metformin for weight loss in non-diabetics has not been confirmed. Medical consultation must be sought prior to taking metformin.

Common side effects of metformin include headaches, nausea, vomiting, bloating, decreased appetite, indigestion, and diarrhea. These side effects often cause people to stop taking metformin. These side effects may be avoided by taking the extended-release form of this drug, which slows down its release in the gastrointestinal tract, thereby reducing symptoms.

Less common side effects include allergic reactions, which can lead to difficulty breathing and swallowing, chest pains, swelling of the throat, or dizziness. One should seek immediate medical attention if any of these occur. Another rare side effect is lactic acidosis, which usually occurs in people with liver, lung, heart, or kidney disease. Symptoms include lightheadedness, sudden decrease in blood pressure, rapid breathing, abdominal pain, vomiting, confusion, fainting, or extreme weakness. Immediate care and hospitalization are required.

Prolonged use of metformin can lead to vitamin B12 deficiency, which can affect nerve and red blood cell function. Careful monitoring and supplementation of vitamin B12 in the blood must therefore be performed before and during treatment.