

\*\*Metformin 500 mg capsules are widely prescribed for managing type 2 diabetes. They help lower blood sugar levels and improve insulin sensitivity, making them a cornerstone of diabetes treatment.\*\*

---

## ## 🧪 Chemical Composition

- \*\*Active Ingredient:\*\* \*Metformin hydrochloride\* 500 mg
- \*\*Molecular Formula:\*\*  $C_4H_{11}N_5 \cdot HCl$
- \*\*Drug Class:\*\* Biguanide antidiabetic agent
- \*\*Formulations:\*\* Capsules, tablets (immediate and extended-release), oral solution

---

## ## 💊 Dosage & Administration

- \*\*Route:\*\* Oral
- \*\*Typical Adult Dosage:\*\*
  - Initial: 500 mg once or twice daily with meals
  - Maintenance: 1500-2000 mg/day in divided doses
  - Maximum: 2550 mg/day (immediate-release); 2000 mg/day (extended-release)
- \*\*Pediatric Use:\*\* Approved for children  $\geq 10$  years; starting dose is 500 mg once daily
- \*\*Administration Tips:\*\*
  - Take with food to reduce gastrointestinal side effects
  - Swallow capsules whole; do not crush or chew

---

## ## 🩺 Medical Uses

- \*\*Primary Indications:\*\*
  - \*Type 2 diabetes mellitus\*
  - \*Polycystic ovary syndrome (PCOS)\* (off-label)
  - \*Insulin resistance\* and \*metabolic syndrome\*
- \*\*Mechanism of Action:\*\*
  - Reduces hepatic glucose production
  - Enhances peripheral glucose uptake
  - Delays intestinal glucose absorption

---

## ## 🚫 Side Effects

### \*\*Common:\*\*

- Nausea
- Diarrhea
- Abdominal discomfort
- Metallic taste

### \*\*Less Common but Serious:\*\*

- Lactic acidosis (rare but life-threatening)

- Vitamin B12 deficiency (with long-term use)
- Hypoglycemia (rare, usually when combined with other drugs)

---

## ## ⓘ Risks & Precautions

- **Contraindications:**
  - Severe renal impairment (eGFR <30 mL/min/1.73 m<sup>2</sup>)
  - Metabolic acidosis
  - Liver disease
  - Alcohol abuse
- **Pregnancy & Breastfeeding:**
  - Generally considered safe; consult a physician
- **Drug Interactions:**
  - Cimetidine, iodinated contrast agents, and alcohol may increase risk of lactic acidosis
- **Monitoring:**
  - Renal function, blood glucose, and vitamin B12 levels during long-term use

---

## ## ☰ Patient Feedback & Complaints

### \*\*Positive Feedback:\*\*

- Effective in controlling blood sugar
- Weight-neutral or mild weight loss
- Affordable and widely available

### \*\*Common Complaints:\*\*

- Gastrointestinal upset (especially at start)
- Metallic taste
- Fatigue or weakness
- Concerns about long-term B12 deficiency

---

## ## 📊 Summary Table

Category	Details
Drug Name	Metformin 500 mg
Active Ingredient	Metformin hydrochloride
Use	Type 2 diabetes, PCOS, insulin resistance
Dosage	500 mg once or twice daily; max 2550 mg/day
Common Side Effects	Nausea, diarrhea, abdominal pain, metallic taste

Serious Risks	Lactic acidosis, B12 deficiency, renal complications
Patient Feedback concerns	Effective; GI upset, taste issues, long-term safety
Contraindications	Renal/liver disease, alcohol abuse, metabolic acidosis

Sources:

- [Drugs.com – Metformin Overview](<https://www.drugs.com/metformin.html>)
- [Practo – Metformin 500 mg Tablet](<https://www.practo.com/medicine-info/metformin-500-mg-tablet-6416>)
- [1mg – Metform 500 mg Tablet](<https://www.1mg.com/drugs/metform-500mg-tablet-564579>)

---