**DIABETES DRUGS: METFORMIN**

Metformin is what is known as an “insulin sensitizer.” In other words, it allows your body to respond more efficiently to its own insulin. By increasing your body’s insulin sensitivity, metformin reduces the amount of sugar released into the bloodstream, thereby lowering blood sugar levels.

<table>
<thead>
<tr>
<th>Generic Name</th>
<th>Brand Name(s)</th>
<th>Strengths (mg)</th>
<th>Usual Doses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metformin</td>
<td>Glucophage</td>
<td>500, 850, 1000</td>
<td>1000 to 2550 mg/day</td>
</tr>
<tr>
<td>Extended Release</td>
<td>Glucophage XR</td>
<td>500</td>
<td>1000 to 2000 mg/day</td>
</tr>
</tbody>
</table>

**POTENTIAL USES:**

1) Diabetes Mellitus, Hyperglycemia  
2) “Pre-Diabetes”: Impaired Fasting Glucose, Impaired Glucose Tolerance  
3) Metabolic Syndrome  
4) Polycystic Ovarian Syndrome (PCOS)

**CONTRAINDICATIONS:** (Do not use if any of these conditions are present)

1) Kidney Disease (Serum Creatinine ≥ 1.5 [males] or ≥ 1.4 mg/dL [females])  
2) Congestive Heart Failure requiring medical therapy  
3) Metabolic Acidosis (Acidic blood – there are many possible causes)  
4) Excessive Alcohol Intake  
5) Known allergy to Metformin

*Important note:* Metformin should also be temporarily stopped in patients scheduled to undergo radiologic tests (for example, CAT scans) involving the injection of intravenous contrast material.

**FDA PREGNANCY CATEGORY:** B (Presumed safety based on animal studies)

**ADVERSE REACTIONS:**

1) Gastrointestinal: abdominal pain, diarrhea, nausea, vomiting, low appetite  
2) Alteration in taste (metallic taste)

**MONITORING REQUIREMENTS**

1) Hemoglobin A1C (as for all diabetic patients)

Disclaimer: This handout is provided as an educational service for patients. It is not all-inclusive, and is not intended to replace other sources of drug information. Please refer to each drug’s package insert for complete drug prescribing information.
COMMONLY ASKED QUESTIONS:

1) Can my blood sugar drop too low while taking metformin?

   Taken alone, metformin should NOT lead to hypoglycemia (low blood sugar levels). However, if metformin is taken in conjunction with insulin or with another diabetes drug, it may contribute to hypoglycemia. In most cases, these episodes are mild. However, severe reactions can occur, especially in older patients or in patients with advanced kidney disease. Common symptoms of hypoglycemia include sweating, palpitations (heart fluttering), shaking, dizziness, disorientation, and hunger. If you experience any of these symptoms, you should check your blood sugar immediately. You should also eat or drink something containing simple carbohydrates, such as milk, juice, or a glucose tablet. If you confirm that your low blood sugar was low, for the rest of that day, you should check your blood sugar frequently in case hypoglycemia returns.

2) Will I gain weight on metformin?

   NO. In fact, some patients tend to lose weight while taking this drug.

3) Are there times when I should NOT take my metformin?

   YES. Metformin should not be taken in the following situations:

   A) Dehydration. If you become dehydrated, metformin can precipitate a dangerous medical condition known as “acidosis,” or acidic blood. If you become sick and dehydrated, temporarily stop your metformin until you are eating and drinking well. When in doubt, be safe and stop the drug for a few days.

   B) If you are expecting to have a radiology test (CT scan) involving intravenous contrast. Metformin can worsen kidney problems when given in conjunction with intravenous contrast material. If you are scheduled for such a test, stop your metformin 3 days prior to the test. In most cases, the drug can be safely restarted 24 hours after the test is complete.