

## **METFORMIN (GLUCOPHAGE)**

### *Benefits:*

Metformin is an anti-hyperglycemic oral medication that assists with increasing insulin sensitivity (making cells be more open for glucose uptake) and decreasing liver glucose output. Metformin is prescribed to assist with lowering fasting glucose levels to goal, but also helps overall glucose control. Metformin may be prescribed for people who have pre-diabetes, type 2 diabetes, as well as polycystic ovarian syndrome (PCOS) to assist with insulin resistance. This medication may also be prescribed during pregnancy if glucose levels are uncontrolled. Metformin can decrease HbA1c  $\geq 1\%$ .

### *Side Effects and Toleration:*

The most common side effects of metformin are upset stomach and diarrhea. Metformin can be taken with or without food; however, side effects can be reduced when taken with food. Metformin does come in an extended release form providing better toleration.

### *Dosing and Duration of Action:*

The duration of action of regular metformin is 12 hrs and extended release is 24 hrs. Extended release metformin should NOT be cut in half as this impacts the slow release action. Extended release metformin (Fortamet, Glumetza) is better tolerated and can be taken all at one time. However, for the best toleration of regular metformin, it can be started at a low dose (500 mg) and increased weekly to max dose (2000 mg), or as prescribed by provider. Keep in mind during pregnancy optimum glucose control is more immediate due to frequent change in insulin resistance throughout the pregnancy and may be started at higher doses depending on the need.

### *Combinations:*

Metformin is generally chosen as the initial treatment for type 2 diabetes management after diet and exercise. However, if glucose levels continue to be uncontrolled, metformin may be combined with another oral or injectable medication for adults (but not children and adolescents). Metformin combined with insulin or GLP-1 (ex. Victoza or Trulicity) has shown positive results. Metformin does come in combined forms (all-in-one tablets) with other oral anti-hyperglycemic medications such as: glyburide, glipizide, thiooglitzone, DPP-4 inhibitors, and SGLT-2 inhibitors. Ask your health care provider what is best for you.

\*NOTE: the only combination safe in pregnancy is metformin and insulin.