Metformin

This sheet talks about exposure to metformin in a pregnancy and while breastfeeding. This information should not take the place of medical care and advice from your healthcare provider.

What is metformin?
Metformin is a medication used to treat type 2 diabetes (once known as adult-onset or noninsulin-dependent diabetes). Metformin has also been used to treat insulin resistance in polycystic ovarian syndrome (PCOS) and gestational diabetes. Some brand names for this medication include Glucophage®, Glumetza® and Fortamet®.

I take metformin. Can it make it harder for me to become pregnant?
For women with PCOS, studies suggest that taking metformin as directed by their healthcare provider might help a woman to get pregnant.

I just found out that I am pregnant. Should I stop taking metformin?
You should not change how you take this medication without first talking to your healthcare providers. High blood sugar levels before and during pregnancy increase the chance of birth defects and other complications. For more information about diabetes during pregnancy, please see the MotherToBaby fact sheet on Diabetes at https://mothertobaby.org/fact-sheets/diabetes-pregnancy/pdf/.
Studies suggest that women with PCOS who are treated with metformin in pregnancy might lower the chance of developing gestational diabetes.
Depending on your medical history, your healthcare provider will discuss with you if you should continue your medication during pregnancy, or if they want you to stop taking it when you learn you are pregnant. It is best to discuss your medication use with your healthcare provider before getting pregnant.

Does taking metformin increase the chance for miscarriage?
Miscarriage can occur in any pregnancy. Some studies suggest that women with PCOS who continue metformin during their first trimester may be less likely to have a miscarriage.

Does taking metformin in the first trimester increase the chance of birth defects?
In every pregnancy, a woman starts with a 3-5% chance of having a baby with a birth defect. This is called her background risk. A small number of studies looking at the use of metformin during pregnancy have not found that taking metformin is associated with a higher chance of having a baby with a birth defect. Studies have found that poorly controlled diabetes in the first trimester can increase the chance of having a baby with a birth defect.

Could taking metformin in the second or third trimester cause other pregnancy complications?
Studies suggest that women using metformin during the second trimester for the treatment of gestational diabetes are not expected to have higher chances of pregnancy complications. The use of metformin through delivery has been associated with a risk of hypoglycemia (low blood sugar) in the baby.

Does taking metformin in pregnancy cause long-term problems in behavior or learning for the baby?
Long-term problems have not been found in two studies that followed children to 6 months or 2 years of age. One study looked at the outcome of pregnancy after treatment of PCOS with metformin throughout pregnancy. At 6 months of age, infants had normal weight, length, and development. Another study did not find differences in two-year-olds’ learning/development when their mothers took metformin for gestational diabetes compared to insulin.

Another study found that babies born to women with gestational diabetes mellitus and treated with metformin had smaller babies at the time of delivery than women with gestational diabetes mellitus who were treated with insulin. The children whose mothers were treated with metformin then rapidly gained weight after birth and were reported to have higher body-mass-index (BMI) in mid-childhood.

**Can I breastfeed while taking metformin?**

The amount of metformin that gets into breastmilk is low. One study found that infants of mothers who received metformin throughout pregnancy and while breastfeeding had the same growth at six months of age as infants who were formula-fed. Talk to your healthcare provider about all of your breastfeeding questions.

**If a man takes metformin, could it affect his fertility (ability to get partner pregnant) or increase the chance of birth defects?**

There are no studies that have looked at pregnancy outcomes with the use of metformin in men. In general, exposures that fathers have are unlikely to increase risks to a pregnancy. For more information, please see the MotherToBaby fact sheet Paternal Exposures at https://mothertobaby.org/fact-sheets/paternal-exposures-pregnancy/pdf/.

Please click here for references.