Metformin and Pregnancy

In every pregnancy, a woman starts out with a 3-5% chance of having a baby with a birth defect. This is called her background risk. This sheet talks about whether exposure to metformin may increase the risk for birth defects over that background risk. This information should not take the place of medical care and advice from your health care provider.

What is metformin?
Metformin is an oral medication used to treat type 2 diabetes and insulin resistance in polycystic ovarian syndrome (PCOS). Other names for this medication include Glucophage®, Diformin®, Glumetza®, FORTAMET® and Glycon®.

I use metformin for the treatment of type 2 diabetes. Should I stop metformin before I get pregnant?
Before and during pregnancy, blood sugar levels should be under control to prevent a higher chance of birth defects and complications. Insulin is usually the medication of choice because it controls blood sugar more tightly than oral medications. However, metformin has also been used to treat type 2 diabetes in pregnant women when insulin alone provides only partial blood sugar control. Please consult your health care before pregnancy to determine which medication(s) is/are the most appropriate for you. For more information about diabetes during pregnancy, please see the MotherToBaby fact sheet Diabetes and Pregnancy at http://www.mothertobaby.org/files/Diabetes.pdf.

If you become pregnant while using metformin, you should not stop your medication without first talking to your health care provider.

I am taking metformin to treat PCOS. Should I stop taking the medication before and/or after I get pregnant?
You should not stop any medication without first talking with your health care provider. Studies have indicated that women with PCOS who are treated with metformin have a better chance of getting pregnant. Some studies have also reported that women who continue metformin during their first trimester may have a smaller chance of miscarriage. Controlling diet may be important in helping metformin decrease the chance of miscarriage. There are also some studies that have not found a decrease in miscarriage while using metformin.

There are some small studies that suggest taking metformin throughout pregnancy may decrease the likelihood of developing gestational diabetes. Depending on your medical history, your health care provider might encourage you to continue your medication during pregnancy, or they may want you to stop taking it when you learn you’re pregnant. It is best to discuss these issues with your health care provider before getting pregnant.

Does metformin cause birth defects? Is it safe to take it during the first trimester?
Most studies suggest that metformin is not associated with an increased risk of birth defects. Recent trials looking at the safety of metformin during pregnancy did not show an increased rate of birth defects or complications at birth. These studies were mostly done among women who use metformin to treat insulin resistance from PCOS.

I have been diagnosed with gestational diabetes. Is it safe to take metformin during the second and third trimester?
Two recent studies concluded that women receiving metformin during the second and third trimesters for the treatment of gestational diabetes did not have higher rates of complications at birth than women taking insulin. Therefore, metformin use during the second or third trimesters is not expected to increase the risk of complications for newborns.
If I use metformin throughout pregnancy will it affect the baby?

A small study initially showed a link between the use of metformin during pregnancy and preeclampsia (high blood pressure requiring immediate medical attention). However, this was not seen in later studies. Other studies compared the use of metformin with insulin during pregnancy and found that metformin did not increase the risk of complications for mothers and babies. There have been some reports of jaundice in babies exposed to metformin during pregnancy, but these reports do not prove that metformin was the cause of the jaundice.

One study looked at the outcome of pregnancy after treatment of PCOS with metformin throughout pregnancy. Infants were found to have normal birth weight and height. At 6 months of age, these infants had normal weight, height, and social and motor development.

Can I take metformin while breastfeeding?

Metformin appears to be safe during breastfeeding. Several reports have shown that metformin can get into breast milk in very small amounts. Another study found that infants of mothers who received metformin throughout pregnancy and while breastfeeding achieved the same growth at six months of age as infants who were formula-fed. Be sure to talk to your health care provider about all your choices for breastfeeding.

For information on a related topic see the MotherToBaby fact sheet for Diabetes and Pregnancy.

The baby’s father uses metformin to treat diabetes. Will that harm the baby?

No study has looked at 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 and Pregnancy at http://www.mothertobaby.org/files/paternal.pdf.

References Available By Request