

Well-known drug has less risk for preterm delivery in PCOS

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Metformin 500mg tablets. Credit: public domain

Metformin can halve the risk of late miscarriage and preterm births for women with polycystic ovary syndrome (PCOS). PCOS occurs in 10 to 15 percent of all women. The symptoms are irregular menstrual periods, increased levels of male sex hormones and small ovarian blisters. In addition, many women with PCOS are overweight. Women with PCOS also have an increased incidence of impaired fertility, miscarriages, gestational diabetes, premature births and pre-eclampsia.

"In pregnant women with PCOS, treatment with [metformin](#) from the end of the first trimester may reduce the risk of late miscarriages and preterm births," says Professor Eszter Vanky.

A new article appearing in *Lancet Diabetes & Endocrinology* presents the results of nearly two decades of research from NTNU and St. Olavs Hospital. Consultant Tone S. Løvvik is the first author, and the study is part of her doctoral work. Professor Sven M. Carlsen is co-supervisor.

However, the research group surprisingly found no reduction of [gestational diabetes](#) among this cohort of women with PCOS.

From 2000 to 2017, the research group carried out three controlled studies of nearly 800 pregnant women with PCOS. The studies were conducted at 15 hospitals in Norway, 4 hospitals in Sweden and one in Iceland. Half of the women were given metformin (2000 milligrams daily) from first trimester to delivery. The rest of the women were given a placebo.

In addition to a lower risk of late miscarriage and preterm births, the researchers also found that the women who received metformin gained less weight during pregnancy. Higher levels of male sex hormones are associated with several of the symptoms of PCOS. The causes of the condition are not known, but may be related to lifestyle, inheritance and intrauterine fetal life.

The group found no effect on pre-eclampsia, pregnancy-induced [high blood pressure](#) or to what extent newborns of women with PCOS needed intensive care. "Perhaps the most remarkable finding was that metformin had no effect whatsoever on either the incidence or severity of gestational diabetes," Vanky notes.

Metformin is a well-known drug used in the treatment of type 2 diabetes, and in some countries regarded as equivalent to insulin as a first-line drug therapy for gestational diabetes.

The three studies that form the basis of the conclusion were carried out according to Good Clinical Practice principles and will have an impact on the follow-up and treatment of pregnant [women](#) with PCOS and likely also of other [pregnant women](#).

Another part of the study followed up children of mothers with PCOS who used metformin, and a [control group](#) that was given a placebo. The result of this survey were recently published by *The Lancet Child and Adolescent Health*.

More information: Tone S Løvvik et al, Use of metformin to treat pregnant women with polycystic ovary syndrome (PregMet2): a randomised, double-blind, placebo-controlled trial, *The Lancet Diabetes & Endocrinology* (2019). [DOI: 10.1016/S2213-8587\(19\)30002-6](https://doi.org/10.1016/S2213-8587(19)30002-6)

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