

# Scheduled childbirth may greatly reduce preeclampsia, a leading cause of maternal death

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More than half of all preeclampsia cases that occur during weeks 37-42 of pregnancy (at-term) may be prevented with timed birth, such as a

scheduled induction or Cesarean delivery, according to new research published today in *Hypertension*.

Preeclampsia is the most dangerous form of high blood pressure ( $\geq 140/90$  mm Hg) during [pregnancy](#), and it is a leading cause of maternal death worldwide. Preeclampsia is potentially life-threatening and affects 1 in 25 pregnancies in the United States. The condition is typically diagnosed after 20 weeks of pregnancy. Symptoms include headaches, vision changes and swelling of the hands, feet, face or eyes for the mother; or a change in the well-being of the baby. Preeclampsia also indicates that there is an increased risk of developing heart health complications for [women](#) later in life.

Preterm delivery may be considered an option for women who develop preeclampsia during weeks 20-36 of pregnancy; however, most preeclampsia occurs during the time frame called at-term, which is between 37-42 weeks of pregnancy. While screening for preeclampsia is routine during pregnancy, there are limited treatment options that are proven safe and effective. Low-dose aspirin more than halves the risk of preterm preeclampsia among women at risk, however, aspirin does not affect the risk of at-term preeclampsia, which is three times more common than preterm preeclampsia and associated with more complications for mothers and babies.

Timed [birth](#) strategies, including induced labor and Cesarean deliveries that are planned in advance, are already widely practiced for various reasons. However, they are seldom used as an intervention to prevent at-term preeclampsia.

"Timed birth is achievable in many hospitals or [health centers](#)," said lead study author Laura A. Magee, M.D., a professor of women's health at King's College in London, "so our proposed approach to prevent at-term preeclampsia has huge potential for global good in maternity care."

Researchers examined more than 10 years of health records for nearly 90,000 pregnancies at two hospitals (King's College Hospital, London and Medway Maritime Hospital, Gillingham) in the U.K. There were 57,131 pregnancies with health records at 11 to 13 weeks (between 2006 and 2017), in which there were 1,138 cases of at-term preeclampsia; and 29,035 pregnancies at 35 to 36 weeks (between 2016 and 2018), in which there were 619 cases of at-term preeclampsia. In the analysis, researchers evaluated risk of preeclampsia and [potential benefits](#) of timed birth for both groups with standard clinical criteria for preeclampsia and a risk prediction model (computer program that predicts risk of preeclampsia based on various individual factors, such as maternal history, blood pressure, ultrasound and blood tests).

The majority of women in the dataset were in their early 30s, self-identified as white and had a body mass index at the upper limits of normal. About 10% of the women in the analysis also self-identified as smokers; fewer than 3% had a medical history of high [blood pressure](#), Type 2 diabetes or an autoimmune disease; and only 3.9% reported a family history of preeclampsia.

At-term preeclampsia occurred with similar frequency when participants screened during the first trimester were compared with those screened during the third trimester. On average, women included in the study delivered at 40-weeks, and two-thirds of all participants experienced spontaneous onset of labor. About one-fourth of the women included in the analysis had Cesarean deliveries.

The analysis indicates that, when utilizing risk-modeling in place of standard clinical screening, timed birth may prove to be an effective intervention for reducing by more than half the risk of at-term preeclampsia.

"Our findings suggest that over half of the cases of at-term preeclampsia

may be prevented by timed (planned) birth," said Magee. "It is important to note that being at higher risk of at-term preeclampsia was associated with earlier spontaneous onset of labor, so women at the highest risk were already less likely to deliver close to their due date."

Limitations for the research included that no interventions were provided to participants; researchers calculated potential risk only through risk modeling. In addition, the study did not examine the potential for preeclampsia after delivery. Although this was an observational study using modeling to predict risk reduction for at-term preeclampsia, the researchers noted that strengths of the study include the large population of women represented and that labor induction and Cesarean delivery are widely available options. However, randomized [clinical trials](#), studies where individuals are chosen at random to receive treatment versus no treatment or an alternate treatment, are needed to evaluate the safety and effectiveness of timed birth as an appropriate intervention to reduce at-term [preeclampsia](#).

In February 2023, the American Heart Association released a scientific statement, [Optimizing Prepregnancy Cardiovascular Health to Improve Outcomes in Pregnant and Postpartum Individuals and Offspring](#), which details the benefits of early interventions to support pre- and interpregnancy (during pregnancy) cardiovascular health. The statement highlighted interventions related to diet, smoking cessation and weight reduction that may reduce the frequency of adverse pregnancy outcomes at birth (such as hypertensive disorders of pregnancy, pre-term birth, small-for-gestational-age birth or gestational diabetes). Additional research is needed to better understand the relationship between comprehensive prepregnancy cardiovascular health care and the frequency of adverse pregnancy outcomes.

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