

Release: Elevated blood pressure before pregnancy may increase chance of pregnancy loss

NIH researchers suggest lifestyle changes may reduce hypertension risk

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Elevated blood pressure before conception may increase the chances for pregnancy loss, according to an analysis by researchers at the National Institutes of Health. The authors conclude that lifestyle changes to keep blood pressure under control could potentially reduce the risk of loss. The study appears in *Hypertension*.

The analysis found that for every 10 mmHg increase in diastolic blood pressure (pressure when the heart is resting between beats), there was an 18-percent-higher risk for pregnancy loss among the study population. Millimeter of mercury, or mmHg, is the unit of measure used for blood pressure. The researchers also found a 17 percent increase in pregnancy loss for every 10 mmHg increase in mean arterial pressure, a measure of the average pressure in the arteries during full heart beat cycles. The study was conducted by researchers at the *Eunice Kennedy Shriver* National Institute of Child Health and Human Development (NICHD).

“Elevated blood pressure is linked to heart disease, stroke, and kidney disease” said the study’s senior author, Enrique Schisterman, Ph.D., chief of the Epidemiology Branch at NICHD. “Our findings suggest that attaining a healthy blood pressure before pregnancy could not only have benefits later in life, but also reduce the chances for pregnancy loss.”

NICHD researchers analyzed data collected as part of the [Effects of Aspirin in Gestation and Reproduction](#) (EAGeR) trial, which sought to determine if daily low-dose aspirin (81 milligrams) could prevent miscarriage in women who had a history of pregnancy loss.

The EAGeR trial enrolled more than 1,200 women ages 18 to 40 years and took blood pressure readings before the women were pregnant and again in the fourth week of pregnancy. Average diastolic blood pressure for the women in the study was 72.5 mmHg; normal blood pressure in adults is a diastolic reading of below 80 mmHg. The authors began to see an increase in pregnancy loss among women who had a diastolic reading above 80 mmHg (approximately 25 percent of the participants). None of the women in the study had stage II high blood pressure (above 90 mmHg in systolic high blood pressure or above 140 mmHg in systolic blood pressure).

The researchers note that the study does not prove that elevated blood pressure causes pregnancy loss. It is possible that another, yet-to-be identified factor could account for the findings. They added, however, that the relationship between preconception blood pressure and pregnancy loss remained the same when they statistically accounted for other factors that could increase pregnancy loss, such as increasing maternal age, higher body mass index or smoking.

“Our results suggest that further research could help determine if treating elevated blood pressure and other health risks before conception improves pregnancy outcomes,” said the study’s first author, Carrie Nobles, Ph.D., a postdoctoral fellow in the NICHD Epidemiology Branch.

Reference

Nobles, CJ. Preconception blood pressure levels and reproductive outcomes in a prospective cohort of women attempting pregnancy. *Hypertension*. 2017; DOI: 10.1161/HYPERTENSIONAHA.117.10705