

## Why do preterm deliveries pose cardiovascular risks for moms?

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As the rate of preterm delivery rises – accounting for 12.5 percent of all U.S. births – a Michigan State University epidemiologist is using a \$3.7 million federal grant to uncover why some mothers who deliver babies early are at an increased risk of developing cardiovascular disease.

Finding those links would help researchers identify which groups of women may benefit from early tracking and intervention, said Claudia Holzman, an epidemiology professor in MSU's College of Human Medicine who is collaborating with Janet Catov of the University of Pittsburgh on the study.

"As a group, women who have delivered a preterm infant have an increased risk of developing cardiovascular disease, but the mechanisms responsible for that link are not understood," said Holzman, whose study is funded by the National Institutes of Health.

"We believe that pregnancy unmask a predisposition to cardiovascular disease: Inflammation, an increase in lipids and the formation of blood clots during pregnancy may be related to preterm delivery and be indicators of later complications in some women who deliver preterm."

To research that hypothesis, Holzman and Catov will rely on the Pregnancy Outcomes and Community Health cohort, a group of more than 3,000 women enrolled in a study to examine the causes of preterm delivery. Holzman and colleagues began the POUCH study in 1998, and the cohort of women will be followed to study many different factors of

preterm births in relation to the health of both children and mothers.

About 900 women (both who delivered preterm and those who did not) will be enrolled in the new study, Holzman said. The research team will study the cardiovascular profiles of women 6-11 years after they participated in the POUCH study, collecting data such as height, weight, waist circumference and blood pressure, as well as blood levels of inflammatory markers, lipids and factors leading to blood clots.

Holzman said the team then will compare the data of women who delivered full-term babies with women who delivered preterm; researchers also will examine whether any association may be modified by factors such as race, socioeconomic status or maternal depression.

"Research that uncovers pathways linking [preterm delivery](#) to a mother's cardiovascular risk can lead to new treatment strategies for both problems," Holzman said. "If we can identify mothers very early in the process, we may be able to delay or prevent the onset of [cardiovascular disease](#)."

The women in the original POUCH study were patients at 52 clinics in five Michigan communities; researchers collected biological samples in mid-trimester, including blood, saliva, urine, hair and vaginal fluid. The placentas also were examined for pathologic markers linked to preterm deliveries.

The [women](#) also underwent detailed interviews and answered questionnaires about their lifestyles, home situations, economic status and perceived discrimination.

Provided by Michigan State University

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