

# Preemies from low-income families at high risk for dangerous brain bleeds

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Babies born prematurely to low-income parents have a disproportionately high risk for developing dangerous brain bleeds that require multiple surgeries and extensive follow-up, according to a small Johns Hopkins Children's Center study.

The findings - published online Sept. 28 in the journal [Pediatric Neurosurgery](#) and based on an analysis of 38 patients referred to Johns Hopkins for treatment of [brain hemorrhages](#) related to [premature birth](#) - offer a sobering reminder of the role socio-[economic factors](#) can play in [health outcomes](#), the researchers say.

The link between poverty and premature birth has been well-documented, the investigators say, but the new findings go a step further and focus on the consequences of one particularly dire and fairly common complication of prematurity - brain hemorrhages.

"Our study shows just how detrimental and far-reaching the effects of prematurity can be, medically and otherwise, highlighting the critical need to better identify high-risk pregnancies and reduce the number of premature births," says Edward Ahn, M.D., pediatric neurosurgeon and senior author on the research.

"Brain hemorrhages can have a lifelong impact on a child's neurological and [cognitive development](#), but also create a [financial burden](#) on the families, many of whom in our study were already economically challenged," Ahn adds.

The premature brain's [blood vessels](#) are highly vulnerable to rapid changes in blood and brain pressure that occur around birth. While some brain bleeds are small and contained within the blood vessel, others can spread further and significantly damage the brain, particularly if not diagnosed and treated promptly. Serious hemorrhages require surgery, intensive follow-up and, often, long-term care to deal with the neurological and developmental after-effects of the condition.

The study tracked 38 babies treated at Hopkins Children's between 2007 and 2010 for complications of brain hemorrhages they had suffered during preterm birth. Most infants in the study (65 percent) were from low-income families and received public [health insurance](#) (63 percent). Household income is not part of a standard medical record, but the researchers used zip code and Medicaid status as proxies for income. Medicaid is the public health insurance program for low-income children.

In addition to the higher risk for brain bleeds, the study showed babies from lower-income homes and those with public health insurance had fewer scheduled follow-up appointments and more emergency room visits, compared with babies with private health insurance and with those from higher income homes. The researchers note the differences were clear, even though they didn't reach statistical significance due to the small number of patients in the study.

"If a family foregoes a scheduled follow-up and instead ends up in the ER with a serious, yet likely preventable complication, the medical and financial consequences can be far worse not only for the family but for the health care system as a whole because ER care is more expensive than routine check-ups," Ahn says.

The investigators said their findings need to be replicated on a wider scale in order to further tease out the reasons behind the disproportionate

risk.

Provided by Johns Hopkins University School of Medicine

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