

## Food Insecurity Is Associated With an Increased Risk of Neonatal Acute Kidney Injury and Abnormal Kidney Function

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**Background:** Prenatal food insecurity (FI) negatively affects both maternal and infant health. These effects may be even more notable in infants as 1) prematurity and neonatal intensive care unit (NICU) admission increase the risk of kidney disease, 2) maternal malnutrition leads to decreased kidney mass, and 3) FI accelerates the progression of kidney disease. Our aim was to determine the association between FI and kidney health.

**Methods:** Single-site prospective cohort study. Parents of infants admitted to the NICU at Riley Children's Health at Indiana University, Indianapolis, IN were interviewed. We collected demographic characteristics and FI status using the Hunger Vital Signs (a validated two-question screening tool). Maternal and infant data were abstracted from medical records and kidney outcomes were compared by FI status.

**Results:** A total of 45 infants were enrolled in this study. In the cohort, the mean gestational age was 32 weeks and the average birthweight was 1.8kg. 26 (60%) reported a household income >\$50,000 per year and 21 (47%) held an Associate's degree or higher.

Of the cohort, 22% (10/45) lived in FI households. Infants from FI households were more likely to have AKI than those from food secure households (60% vs 17%,  $p=0.007$ ) and were more likely to have an abnormal serum creatinine at two weeks of age (70% vs 31%,  $p=0.028$ ). While not statistically significant, infants from FI households had a trend towards higher likelihood of IUGR (30% v 14%).

**Conclusion:** Food insecurity was common among families with infants admitted to the NICU. Infants born into FI households were more likely to have AKI and delayed maturation of kidney function than those born in food secure households. This emphasizes the importance of FI screening as part of prenatal care along with the need for resources such as food pantries for families admitted to the NICU.