

# Researchers identify biomarkers of poor outcomes in preemies

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Researchers at Cincinnati Children's Hospital Medical Center have identified biomarkers of poor outcomes in preterm infants that may help identify new approaches to prevention.

Ardythe Morrow, PhD, a researcher at the Cincinnati Children's Perinatal Institute, has identified a polymorphism – a variant in a particular DNA sequence – in a gene important to the development of the immune system. She found that this [polymorphism](#) raises the risk of bad outcomes in preterm infants, including death; necrotizing enterocolitis, which is the death of intestinal tissue; and gram negative sepsis, an overwhelming infection.

The study is published online in the *Journal of Pediatrics*.

"The secretor gene (FUT2) controls secretion of a substance known as 'H antigen' in saliva, urine, plasma, and other body fluids. Our data suggest that H antigen may be important to the health of preterm infants," says Dr. Morrow. "Research is continuing to better understand the impact of FUT2 in prematurity and should provide important insights into disease progression and infant vulnerability. We speculate these high risk infants may especially benefit from human milk oligosaccharide, a complex carbohydrate made by enzymes of the FUT2 gene."

Dr. Morrow and her colleagues collected saliva samples from 410 infants born at or before 32 weeks gestational age. Among these infants, 26 died, 30 had necrotizing enterocolitis and 96 had confirmed sepsis.

Death occurred in 15 percent of 135 infants with low H antigen in their saliva, compared to 2 percent of 248 infants with high levels of H antigen in saliva. Low H antigen was also associated with greater odds of death due to necrotizing enterocolitis and sepsis, as well as higher odds of necrotizing enterocolitis. In addition, no secretion of H antigen predicted gram negative sepsis.

Dr. Morrow and her colleagues at Cincinnati Children's are now analyzing national data and tissue samples for a new study designed to test the role of intestinal colonization in [preterm infants](#) in relation to their FUT2 genotype. Other studies are underway to test the role of specific oligosaccharides (complex carbohydrates) in human milk in disease prevention.

Provided by Cincinnati Children's Hospital Medical Center

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