

Leveraging Human Voice in the NICU to Improve Infant Neurodevelopment

March 25

Tuesday, 12:30 pm

Billings Building—Rosedale Room

SPEAKER:



Nathalie L. Maitre M.D., Ph.D.

Professor of Pediatrics

Director of Early Development and Cerebral Palsy Research

Emory University and Children's Healthcare of Atlanta

Host: Katherine E. Travis, Ph.D.

For more information contact

Darlene White

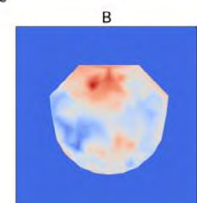
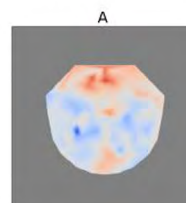
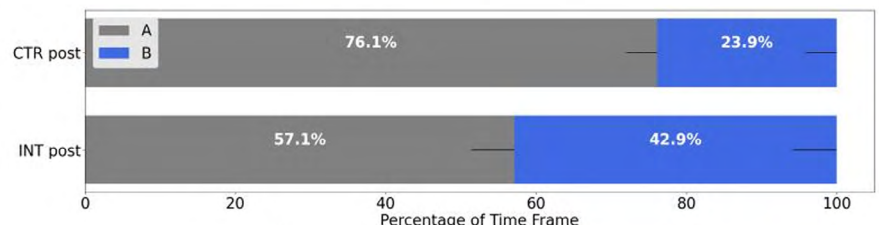
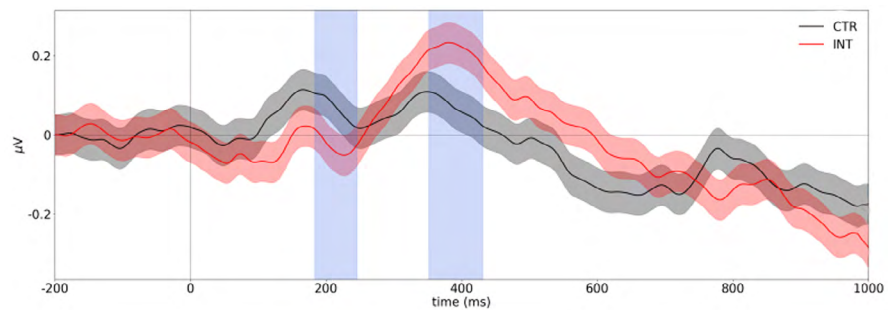
daw9085@med.cornell.edu

Publications

1. Kjeldsen, C.P., Neel, M.L., Jeanvoine, A. et al. *Investigation of mothers' elicited infant-directed speech and singing for preterm infants.* *Pediatr Res* (2024).
2. Richard C, Jeanvoine A, Stark AR, Hague K, Kjeldsen C, Maitre NL. *Randomized trial to increase speech sound differentiation in infants born preterm.* *The Journal of Pediatrics.* 2022 Feb 1;241:103-8.
3. Maitre NL, Key AP, Slaughter JC, Yoder PJ, Neel ML, Richard C, Wallace MT, Murray MM. *Neonatal multisensory processing in preterm and term infants predicts sensory reactivity and internalizing tendencies in early childhood.* *Brain topography.* 2020 Sep;33(5):586-99.

Abstract

The auditory experience of preterm infants after birth alters early development, with implications for childhood trajectories. Caregiver infant directed speech is one of the most valuable interventions in the NICU. However, in US NICUs, parental presence at bedside—and thus exposure to parent voice—is challenging due to systemic and structural factors. Using observational studies and randomized control trials, we have studied the influence of the NICU experience on neural processing of speech and multisensory processing. We recently determined that contingent caregivers' infant-directed voice in the NICU, administered through a therapist and parentsupported scaffold, had a larger effect than enhanced standard care on neural speech-sound differentiation in preterm infants by discharge to home. In addition, we showed that this resulted in improved Bayley scores in cognition, receptive and expressive language at one year. In addition, Patterns of multisensory processing became more like those of infants born at term. This approach is the first developmental care intervention to demonstrate changes in neural function and later behavioral outcomes, demonstrating the capacity for experience-based plasticity and importance of early inputs for childhood trajectories.



Burke Neurological Institute

Academic Affiliate of Weill Cornell Medicine
785 Mamaroneck Avenue, White Plains, NY 10605
burke.weill.cornell.edu/events

 **Burke
Neurological
Institute**
The Science Hope Demands

 **Weill Cornell
Medicine**