

Quieter intensive care units may translate to better outcomes for infants in new study

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Excessive noise is widely known to have negative effects on health, and children in neonatal intensive care units are among the most vulnerable. To help preterm infants make a smooth transition to life outside of the

womb, some NICUs have instituted set quiet times to limit children's exposure to potentially dangerous levels of noise.

Researchers from the University of Nebraska-Lincoln, George Washington University and Baptist Health South Florida conducted one of the first studies linking the quiet time soundscape inside NICUs with infant health. The study examined the effects of quiet time implementation in multiple NICUs on infants up to 18 months after implementation, giving the group a sense of which features of quiet time policies have the largest impact on the youngest patients in the hospital.

The team will present their findings at the 177th Meeting of the Acoustical Society of America, which takes place May 13-17, at the Galt House in Louisville, Kentucky.

"Although the NICU [noise](#) literature dates back more than 40 years, even recent studies show that ambient NICU noise often exceeds recommended levels," said Dr. Erica Ryherd. "Despite the growing evidence of the negative impacts of NICU soundscapes on infants, there are large and pressing gaps in the literature that need immediate attention before ideal, evidence-based NICU soundscapes are achievable and more widely implemented."

Ryherd, Dr. Jonathan Weber, and Dr. Ashley Darcy Mahoney from Baptist Children's Hospital worked with nursing staffs at NICUs as they developed their own quiet time guidelines, including limiting conversations, dimming lights, and coordinating scheduled cleaning services, at set hours every afternoon and night.

The researchers then analyzed how each NICU's soundscape changed throughout the day. Acoustic measurements revealed that certain stressful pitches were quieter, very loud sounds occurred more infrequently, and total amount of quiet time throughout the day was

longer. The [infants](#) in the NICU had healthier heart rates during quiet time hours.

From this data, the group recommends using quiet time protocols to help NICU patients in addition to implementing architectural noise reduction strategies in NICUs.

The researchers hope that their work stokes interest in how noise affects other types of hospital patients and beyond, including how public spaces are designed to mitigate the effects of loud sounds. The group looks to continue their work with currently ongoing studies on healthy built environments and on the impact of language on health outcomes among children.

Provided by Acoustical Society of America

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