

# Mom's voice may improve the health of premature babies

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When babies are born prematurely, they are thrust into a hospital environment that while highly successful at saving their lives, is not exactly the same as the mother's womb where ideal development occurs. The Neonatal Intensive Care Unit (NICU) is equipped with highly skilled care givers and incubators that regulate temperature and humidity, but Amir Lahav, ScD, PhD, director of the Neonatal Research Lab at Brigham and Women's Hospital (BWH) thought that something was missing - simulation of the maternal sounds that a baby would hear in the womb. Now, new research conducted by Lahav and colleagues links exposure to an audio recording of mom's heartbeat and her voice to lower incidence of cardiorespiratory events in preterm infants. This research is published online in *The Journal of Maternal-Fetal and Neonatal Medicine*.

"Our findings show that there may be a window of opportunity to improve the physiological health of these babies born prematurely using non-pharmalogical treatments, such as auditory stimulation," said Lahav, principal investigator of the study.

Because they are underdeveloped, preterm infants experience high rates of adverse lung and heart events, including apnea (pause in breathing that lasts longer than 20 seconds ) and bradycardia (periods of significantly slow heart rate). Researchers sought to determine whether an auditory intervention could affect the rates of these unwarranted cardiorespiratory events.

To conduct the study, Lahav enrolled fourteen extremely [premature infants](#) (born between 26-32 weeks gestation) that were admitted to the NICU at BWH. The infants were assigned to receive an auditory intervention of maternal sound stimulation (MSS), four times per day throughout their NICU hospitalization. Each infant received a personalized MSS—a soundtrack that consisted of his/her own mother's voice and heartbeat. The recording was played into the infant's incubator via a specialized micro audio system developed in Lahav's lab.

Overall, researchers found that cardiorespiratory events occurred at a much lower frequency when the infants were exposed to MSS versus to routine hospital noise and sounds. This effect was statistically significant in infants of 33 weeks gestation or older.

"Our findings are promising in showing that exposure to MSS could help preterm infants in the short-term by reducing cardiorespiratory events. The results also suggest that there is a period of time when the infant's auditory development is most intact that this intervention of MSS could be most impactful," Lahav said. "However, given our small sample size of 14 infants, further research is needed to determine if this intervention could have an impact on the care and health of [preterm infants](#)."

Provided by Brigham and Women's Hospital

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