

Memory in the neonate brain

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Background: The capacity to memorize speech sounds is crucial for language acquisition. Newborn human infants can discriminate phonetic contrasts and extract rhythm, prosodic information, and simple regularities from speech. Yet, there is scarce evidence that infants can recognize common words from the surrounding language before four months of age. **Methodology/Principal Findings:** We studied one hundred and twelve 1-5 day-old infants, using functional near-infrared spectroscopy (fNIRS). We found that newborns tested with a novel bisyllabic word show greater hemodynamic brain response than newborns tested with a familiar bisyllabic word. We showed that newborns recognize the familiar word after two minutes of silence or after hearing music, but not after hearing a different word. **Conclusions/Significance:** The data show that retroactive interference is an important cause of forgetting in the early stages of language acquisition. Moreover, because neonates forget words in the presence of