



Baby Laura, four months, enjoys being wired for sound. Picture: David Caird

VIC News

BABILab at Bionics Institute to map baby brains for hearing clues

Brigid O'Connell, Health reporter, Herald Sun
September 11, 2017 8:00pm
Subscriber only

NEW brain mapping will test whether cochlear implants and hearing aids are helping hearing-impaired babies' language centres to develop.

The scans will provide an objective test of hearing for children too young to explain what they can hear.

BABILab, at Melbourne's Bionics Institute, will use sensors in skull caps to measure areas of brain activity as the babies engage in auditory and language tasks.

The scans will be compared with those from infants with normal hearing.

Experts can then use them to tweak hearing aid levels.

The institute's head of translational hearing research, Professor Colette McKay, said current tests of infants' hearing were an "approximate best guess".

Hearing devices were then adjusted over time, as the child became increasingly able to give feedback.

But Prof McKay said hearing loss needed to be treated individually because each hearing impairment could have a different cause.

"When a baby is born, their brain is ready to develop all the structures that support language development and speech perception and production," Prof McKay said.

"You need to have the auditory input in order to develop that structure and make it work. The earlier you intervene and give them sound, the better outcome for their whole quality of life."

WORLD-FIRST MELBOURNE DRUG-ELUTING ELECTRODE TRIAL BUILDS ON COCHLEAR IMPLANT SUCCESS



Baby Laura, four months, wears one of the skull caps. Picture: David Caird
Research fellow Dr Hamish Innes-Brown said EEG tests of the brain's electrical activity could be hijacked by the electrical emissions from a cochlear implant.

But the new scans use functional near-infra-red spectroscopy (fNIRS), which is a light-based technology.

It measures oxygenated blood, correlating with brain regions that become active when certain sounds are heard or understood.

“We’re measuring how the brain, itself, is responding to sounds,” Dr Innes-Brown said.

Prof McKay said the test would also allow examination of networks across the brain that were contributing to language development.

“These language areas in the brain should be highly connected. If they’re not, we could be able to target them with some sort of speech and language therapy,” she said.

“Or if a child was wearing a hearing aid and their language wasn’t developing, it could be a sign they should try a cochlear implant instead.”

The team is developing a purpose-built fNIRS machine which, if their proof-of-concept trial is successful, they hope to roll out to other hearing centres. Children aged four and under, who are both hearing-impaired and have normal hearing, are needed for the institute’s study.

Details: 9667 7500

brigid.oconnell@news.com.au

[@BrigidOConnell](#)

Comments

Post Comment