

Media Release

Helping Prems Speak Easy

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The Women and Infants Research Foundation (WIRF), Telethon, and researchers from the University of Western Australia (UWA) School of Paediatrics and Child Health are using a new assessment tool, and are trialling a new intervention programme, to help Western Australia's prematurely born children speak easier when they get to school.

Preterm children, who are frequently intubated to help their immature lungs to breathe when they are born, are at risk of developing voice problems when they reach school age. The tube used can sometimes cause damage to the children's voice boxes and cause them to squeeze the muscles around their voice box too tightly when talking, making their voices sound strained.

Based on the findings of a recent study, Perth researchers, in collaboration with a Belgium team have validated a 'first of its kind' objective assessment of voice severity in children. The assessment is the Acoustic Voice Quality Index (AVQI) and the Perth team adapted it for measurement in children.

The UWA study, funded by WIRF and Telethon, investigated voice difficulties in nearly 200 children born at under 32 weeks gestation at King Edward Memorial Hospital (KEMH). The study found that 63 percent of very preterm children had at least a mild voice difficulty, often a hoarse voice, when they reached school age. 27 percent had a significant voice problem at school age that could be linked to the child's premature birth. This is the first time that a study has reported on voice problems in the school years. The group have published a review of the current research in the [Neonatology journal](#). The group have also published their findings in the International Journal of Paediatric Otorhinolaryngology.

This study follows on from the group's [Preterm Voice Study](#), conducted in 2011, which found a strong association between female gender, number of intubations and voice difficulties at school age in children. Those who were intubated for breathing assistance more than 5 times, usually extremely preterm babies born at less than 25 weeks gestation, were at greatest risk of voice problems at school age.

Principal Investigator of the study, Clinical Associate Professor Noel French said "the objective voice assessment uses computer analysis of the sound signal of the voice, and provides information about how the larynx is functioning. The assessment is unbiased and sensitive to small changes in voice quality and results in an index score, based on a composite calculation of different aspects of the voice signal". Routine screening for voice difficulties in preterm children using the adapted assessment will soon be implemented in the Neonatal Follow-up Program at KEMH.

Prof French said "we are currently liaising with international researchers for more information to help us develop the screening protocol. At present, computer analysis of voice requires very specialised equipment – usually broadcast quality – to ensure that there is no interference with the voice signal".

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“However, with recent advances in technology it may be possible to use everyday equipment, such as iPhones, to take recordings of preterm children’s voices. In collaboration with applications such as Skype, children in regional and remote areas could participate in voice screening with access to a desktop computer”.

Coordinator of the preterm voice follow up program at KEMH, and Speech Pathologist Victoria Reynolds, said “understanding the severity of voice damage at an early age can assist with targeted interventions that may improve the child’s voice ability when they reach school”.

A therapy programme assessing improvements in the study participant’s voices is currently being trialled, with results expected later in 2015.

August 23rd to 29th is National Speech Pathology Week, the annual week raising awareness about communication and swallowing disorders, as well as the work of speech pathologists.

Media contact: Sarah Cooper, 0416 228 722, sarah@wif.com.au