CASE STUDY

RESEARCH NAMED AMONG NATION'S BEST

Research from the Research Centre for Early Origins of Health and Disease is linking cognitive outcomes in children born pre-term with impaired motor development. This research was named among the top 10 health and medical research projects in Australia in 2009 by the National Health and Medical Research Council (NHMRC).

Led by Dr Julia Pitcher, the research discovered that babies born before the optimal gestation period of 40 weeks or below their predicted birth weight show reduced motor system development, which can affect them much longer than previously thought.

Underdevelopment of these motor areas appears to have a negative influence on cognitive abilities related to language comprehension and reading. This is the first physiological evidence that motor and cognitive dysfunction commonly experienced by preterm children when they reach school age probably has common underlying origins in the brain. One of the main impacts of the team's research relates to these late or mildly pre-term children, born between 33 and 37 weeks of gestation. Many of the babies present as normal at birth, but there is increasing evidence that the children experience significant motor, cognitive and behavioural difficulties at school age.

Every week of gestation is important in ensuring normal brain development, so apart from early identification of at-risk infants and development of new therapies, the findings raise some questions about when we induce births. The good news is that it appears a stimulating postnatal environment can ameliorate many of the negative consequences of pre-term birth on both motor and cognitive development.

The long-term aim of the work is to develop early diagnostic and intervention strategies to minimise the impact of preterm birth and enable these children to realise their full potential at school and into later life.

Below: Dr Julia Pitcher and Associate Professor Michael Ridding, Research Leaders Neuromotor Plasticity and Development

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