



## Does anaesthesia affect my baby's brain?

8 May 2018

Three of Australia's leading children's hospitals have published a significant joint statement that examines whether anaesthesia affects children's development. An expert group of anaesthetists, surgeons and neonatologists from The Children's Hospital, Westmead, The Sydney Children's Hospital and John Hunter Children's Hospital studied nearly two decades of research to ensure parents had the latest information about international research studies on anaesthesia and children.

The group's convenor, paediatric anaesthetist Dr Jonathan de Lima of The Children's Hospital, Westmead, said he hoped the statement would help reassure parents who were anxious or concerned about their children's operations by answering their questions about anaesthesia.

Dr de Lima is a guest speaker at the Australian and New Zealand College of Anaesthetists' annual scientific meeting in Sydney on Tuesday May 8.

"Very few people are willing to stick their necks out on this issue but we felt there was an urgent need for this information as causing panic and anxiety is counterproductive," he said.

"There is no need for us to change our current practice," Dr de Lima explained.

The statement, which was developed in collaboration with surgeons, neonatologists and anaesthetists from paediatric centres in New South Wales, says the research to date has found:

- A single exposure to anaesthetic drugs of less than three hours before three years of age does not lead to reduced developmental scores.
- In multiple procedures requiring anaesthesia before three years of age there was a modest reduction in cognitive outcomes but this was likely to be caused by the illness or surgery rather than exposure to drugs.
- There are no data about the risk of anaesthetic drug exposure in children who are vulnerable such as those with pre-existing neurological disease or congenital heart disease.

Dr de Lima said the statement was long overdue and much needed for parents and medical practitioners in paediatric anaesthesia as it would help address some of the common questions parents asked about anaesthetic drugs and procedures such as "How will the anaesthetic affect my child?" by detailing findings from ongoing international studies.

Previously, information provided to parents had not focused on the latest research findings.

"We felt it was important to tell parents 'this is what the data is telling us' so they have a better understanding of the latest research," Dr de Lima said.

Anaesthesia and post-operative pain relief for newborns and even foetuses is now routine. The drugs are used to reduce awareness, pain and distress caused by vital treatments and surgery.

While research to date has focused on animal studies to examine how anaesthetic drugs may affect developing brains Australian researchers are leading the way in human studies that complement the laboratory studies. International and Australian longitudinal trials are tracking the development of hundreds of babies from birth to adulthood.

The only available randomised study into the effect of general anaesthesia on young children – the Australian "GAS study" – involved researchers and doctors at 28 hospitals in Australia, New

Zealand, the US, Canada and Europe and published findings in 2016. It tested the mental development of more than 700 infants two years after they underwent hernia surgery.

The study compared the performance of babies who had received a general anaesthetic against those who had been given a local, or spinal anaesthetic. The study showed no difference between the two groups but the longer term effects are not yet known.

More than 2500 local and international anaesthetists, pain specialists and other medical practitioners have gathered for the ANZCA meeting at the International Convention Centre in Sydney from May 7-11. The meeting features dozens of significant research papers, workshops and presentations on clinical and scientific advances.