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### Children to benefit from faster oxygen delivery during surgery

Children with breathing problems requiring surgery could soon benefit from a faster new oxygen delivery technique that has been found to improve crucial oxygen flow during anaesthesia.

The high-flow oxygen for children's airway surgery trial (HAMSTER) compared the previous standard oxygen delivery method with a new approach that delivers fresh heated and humidified oxygen via small nasal prongs – at a rate depending on the child's weight – which is much higher than the standard delivery method.

The trial involved 530 children aged between 0 and 16 years requiring airway surgery at five Australian hospitals – Queensland Children's Hospital in Brisbane, Perth Children's Hospital, the Royal Children's Hospital in Melbourne, The Children's Hospital at Westmead in Sydney and the Women's and Children's Hospital in Adelaide.

The findings have today been published in [\*The Lancet Respiratory Medicine\*](#).

Chief Investigator Associate Professor Susan Humphreys, a paediatric anaesthetist at Queensland Children's Hospital, said the four-year trial involved anaesthetists and ear, nose and throat specialists.

“This is the largest airway trial in children looking at the safety of oxygen delivery methods. Children who require surgery to correct a problem inside their airway are at risk of low oxygen levels during the time they are anaesthetised,” she explained.

“We investigated two main outcomes – firstly, the incidence of having to interrupt the surgeon to improve oxygen levels and secondly, how low the oxygen levels dropped.

“The results show that the new technique of using high-flow oxygen is as safe as the standard method and offers a second option to the anaesthetist in deciding how best to deliver oxygen to these children during the anaesthesia.”

The trial was partly funded by the Australian and New Zealand College of Anaesthetists (ANZCA) Foundation, the Thrasher Research Fund in the US and is endorsed by the ANZCA Clinical Trials Network. The Society for Paediatric Anaesthesia in New Zealand and Australia also supported the trial.

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