

# Current concepts in use of high flow nasal cannula for airway management

**Matthew Payton**

*Physicist, General Manager, Fisher and Paykel Healthcare*

During the last eight years, more than 300 papers have been published describing the use of Nasal High Flow (NHF) and THRIVE in anaesthesia. The objectives of this talk are to summarise current clinical evidence, describe the underlying mechanisms, to examine the limitations on the use of NHF, and to pose some of the many questions that remain unanswered.

There is evidence from published literature that NHF extends safe apnoea time during airway management, although further research is required in high BMI and critically patients. NHF has also been shown to reduce desaturations and procedure interruptions during procedural sedation. Emerging evidence suggests that NHF may have a role in reducing hospital length of stay, particularly in post-surgical cardio-thoracic patients.

Several mechanisms of action have been proposed including increased fraction of inspired oxygen, the generation of positive airway pressure, and the clearance of carbon dioxide. There is however still much to be learnt about these mechanisms, and particularly which apply during spontaneous breathing and those during apnoea. The clearance of carbon dioxide during prolonged apnoea is also controversial.

Potential adverse effects such as gastric insufflation and, in the context of the COVID-19 pandemic, the possibility of generating and/or spread aerosols will be discussed along with precautions to minimise the risk of fire.

Finally new technologies for delivering the therapy, and their limitations will be discussed.