

MEETING ABSTRACT

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# Endotracheal intubation with and without night vision goggles in a helicopter and emergency room setting – a manikin study

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## Background

Securing the airway by endotracheal intubation (ETI) is a key issue in civilian and military pre-hospital critical care. Night vision goggles (NVG) are used by personnel operating in low-light tactical environments. We examined the feasibility of an anaesthesiologist performed ETI using binocular NVG in a helicopter setting.

## Methods

Twelve anaesthesiologists performed ETI on a manikin in an emergency room (ER) setting and two helicopter-settings, with randomization to either rotary wing daylight (RW-D) or rotary wing in total darkness using binocular NVG (RW-NVG). Primary endpoint was intubation time. Secondary endpoints included success rate, Cormack-Lehane (CL) score and subjective difficulty according to the Visual Analogue Scale (VAS).

## Results

The median intubation time was shorter for the RW-D compared to the RW-NVG setting (16,5 s vs 30,0 s;  $p=0,03$ ). We found no difference in median intubation time for the ER and RW-D settings (16,8 s vs 16,5 s;  $p=0,91$ ). For all scenarios success rate was 100%. CL and VAS varied between the ER setting (CL 1,8, VAS 2,8), RW-D setting (CL 2,0, VAS 3,0) and RW-NVG setting (CL 3,0, VAS 6,5).

## Conclusion

This study suggests that anaesthesiologists successfully and quickly can perform ETI in a helicopter setting

both in daylight and in darkness using binocular NVG, but with shorter intubation times in daylight.

## Conflicts of Interest

The authors have no conflicts of interests.

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