

## What is an unacceptable light level for direct laryngoscopy?

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### To the Editor,

Optimal lighting level may be crucial to successful tracheal intubation. However, the minimum light level required for direct laryngoscopic intubation has not been clearly defined using a standardized method of testing. Two prior studies have reported that the minimum luminance or illuminance level required for intubation is approximately 100 candela · m<sup>-2</sup> or 900 Lux, respectively.<sup>1,2</sup> In this letter, we report an alternative calculation of the minimum acceptable laryngoscope lighting level. Over a 9-month period, our quality control office collected 11 paired laryngoscope blades and accompanying handle sets that anesthesia staff had rejected from use in the operating room due to poor or insufficient light levels. The illuminance level for each of these matched sets (Heine Classic<sup>®</sup> fiberoptic stainless steel Macintosh #3 and #4 blades with 2.5 V handle/battery packs) was tested immediately as received from the operating room using a light-testing apparatus previously validated at our institution.<sup>3</sup> The illuminance of these 11 rejected sets ranged from 360 to 850 Lux with a mean output of 597 ± 160 Lux (±1 SD). In comparison, a new blade and handle set of this configuration normally produces approximately 5000 Lux. However, this maximal lighting level is often not maintained in the

clinical setting due to battery depletion or blade deterioration secondary to repeated use and cleaning. Although our data do not directly assess the exact minimum threshold of light requirement for direct laryngoscopic intubation, it does indirectly support the results of prior studies in determining a minimum or unacceptable light level. In the absence of a Canadian Standards Association/International Organization for Standardization (CSA/ISO) standard, a minimum laryngoscope lighting level of 600–900 Lux may be useful for quality control purposes.

**Competing interests** None declared.

### References

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