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## Can the Modified LEMON Score Predict Difficult Intubation?

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*A Japanese registry study suggests the score has fair sensitivity and specificity.*

The LEMON score is a mnemonic for predicting difficult intubation. It stands for Look, Evaluate the 3-3-2 rule, Mallampati score, Obstruction, and Neck mobility ([NEJM JW Emerg Med Mar 2005](#) and [Emerg Med J 2005; 22:99](#)). Using a prospective registry of emergency department intubations in Japan, researchers assessed the sensitivity and specificity of the modified LEMON criteria for predicting difficult intubation (defined as requiring >1 attempt). The modified LEMON criteria do not include assessment of the Mallampati score or measurement of thyroid-to-mouth distance (part of the 3-3-2 rule).

Of 4034 intubations, 84% were performed with a direct laryngoscope and, of these, 5.4% were difficult (required more than 1 attempt). Among the direct laryngoscope group, sensitivity of any unfavorable finding during a modified LEMON assessment was 86%, specificity was 48%, and negative predictive value was 98%. Among the 16% of intubations performed with a video laryngoscope, 7.4% were difficult. Sensitivity was 95%, specificity 40%, and negative predictive value 99%.

**Comment:** These data suggest that the modified LEMON assessment helps predict difficult intubation. For any patient with an unfavorable LEMON assessment, emergency department intubation should be performed by (or with supervision from) the most qualified operator available, with careful preoxygenation and backup methods readily accessible (e.g., bougie, laryngeal mask airway, or cricothyrotomy kit). Video laryngoscopy is recommended for all intubations, when available.

### **Citation(s):**

Hagiwara Y et al. Prospective validation of the modified LEMON criteria to predict difficult intubation in the ED. *Am J Emerg Med* 2015 Jun 19; [e-pub]..

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