

## APPENDIX A

Citation	Research Design & Level of Evidence	Population / Sample size n=x	Major Variables	Instruments / Data collection	Results
Downey, A. W., Duggan, L. V., & Adam Law, J. (2021). <i>A systematic review of Meta-analyses comparing direct laryngoscopy with videolaryngoscopy</i> . Canadian journal of anaesthesia = Journal canadien d'anesthesie. Retrieved October 24, 2022, from <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7845281/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7845281/</a>	Level 1 Systematic Review	21 Meta-analyses were identified published between 2000-2022 comparing VL and MAC DL.	VL, MAC DL	A medical librarian conducted the search across databases	Most currently published meta-analyses support a superiority of VL over DL
Hoshijima H, Denawa Y, Tominaga A, Nakamura C; Shiga T, Nagasaka H; (2018). <i>Videolaryngoscope versus Macintosh laryngoscope for tracheal intubation in adults with obesity: A systematic review and meta-analysis</i> . Journal of clinical anesthesia. Retrieved October 24, 2022, from <a href="https://pubmed.ncbi.nlm.nih.gov/29156438/">https://pubmed.ncbi.nlm.nih.gov/29156438/</a>	Level 1 Systematic Review	11 articles comparing VL and DL	VL, MAC DL, obesity	A group of anesthesia researchers reviewed database articles	Video laryngoscopes were superior to MAC DL for tracheal intubation in obese patients
Karczewska, K., Bialka, S., Smereka, J., Cyran, M., Nowak-Starz, G., Chmielewski, J., Pruc, M., Wieczorek, P., Peacock, F. W., Ladny, J. R., & Szarpak, L. (2021). <i>Efficacy and safety of video-laryngoscopy versus direct laryngoscopy for double-lumen endotracheal intubation: A systematic review and meta-analysis</i> . MDPI. Retrieved October 24, 2022, from <a href="https://www.mdpi.com/2077-0383/10/23/5524/htm">https://www.mdpi.com/2077-0383/10/23/5524/htm</a>	Level 1 Systematic Review	25 articles comparing VL and DL	VL, DL	Two research reviewers searched databases and reviewed 25 studies	VL offers shorter intubation time, better glottis view, lower need for ELM, but comparable first time success rate
Lee, J. Y., Hur, H., Park, H. Y., Jung, W. S., Kim, J., & Kwak, H. J. (2020). <i>A comparison between McGrath Mac videolaryngoscopy and Macintosh laryngoscopy in children</i> . Acta anaesthesiologica Scandinavica. Retrieved October 19, 2022, from <a href="https://pubmed.ncbi.nlm.nih.gov/29178126/">https://pubmed.ncbi.nlm.nih.gov/29178126/</a>	Level 3 Prospective Randomized Control Study	84 patients undergoing endotracheal intubation	McGrath VL, MAC DL	84 patients undergoing endotracheal intubation were randomly assigned to the McGrath group or MAC DL Group	McGrath VL provides better laryngeal views but similar intubation times and success rates compared to MAC DL

<p>Robinson OJ, Smith AF (2017). <i>Videolaryngoscopy versus direct laryngoscopy for adult patients requiring tracheal intubation: A Cochrane Systematic Review</i>. British journal of anaesthesia. Retrieved October 24, 2022, from <a href="https://pubmed.ncbi.nlm.nih.gov/28969318/">https://pubmed.ncbi.nlm.nih.gov/28969318/</a></p>	Systematic Review	were included in the review	MAC DL	databases and reviewed 64 studies	intubation with experienced operators but not inexperienced users, there was no difference in number of first attempts, VL improved glottis view and reduced trauma
<p>Bhattacharjee, S., Maitra, S., &amp; Baidya, D. K. (2018). A comparison between video laryngoscopy and direct laryngoscopy for endotracheal intubation in the emergency department: A meta-analysis of randomized controlled trials. <i>Journal of Clinical Anesthesia</i>, 47, 21–26. <a href="https://doi.org/10.1016/j.jclinane.2018.03.006">https://doi.org/10.1016/j.jclinane.2018.03.006</a></p>	Level 1 Systematic Review	5 randomized control trials	VL, DL, emergency department	This review involved 1250 patients from 5 randomized control trials	VL offers no advantage over DL for intubation success. VL showed improvement in reducing esophageal intubations.
<p>Vargas, M., Servillo, G., Buonanno, P., Iacovazzo, C., Marra, A., Putensen-Himmer, G., Ehrentraut, S., Ball, L., Patroniti, N., Pelosi, P., &amp; Putensen, C. (2021). Video vs. direct laryngoscopy for adult surgical and intensive care unit patients requiring tracheal intubation: a systematic review and meta-analysis of randomized controlled trials. <i>European Review for Medical and Pharmacological Sciences</i>, 25(24), 7734–7749. <a href="https://doi.org/10.26355/eurev_202112_27620">https://doi.org/10.26355/eurev_202112_27620</a></p>	Level 1 Systematic Review	97 randomized control trials evaluating 12,775 patients	VL, DL	Researchers identified all RCTs comparing VL to DL in Cochrane Central Register of Controlled Trials, MEDLINE, and EMBASE	VL reduces risk of difficult intubation and increases intubation success in first attempt
<p>Nalubola, S., Jin, E., Drugge, E. D., Weber, G., &amp; Abramowicz, A. E. (2022). Video Versus Direct Laryngoscopy in Novice Intubators: A Systematic Review and Meta-Analysis. <i>Cureus</i>, 14(9), e29578. <a href="https://doi.org/10.7759/cureus.29578">https://doi.org/10.7759/cureus.29578</a></p>	Level 1 Systematic Review	10 studies covering 1,730 intubations	VL, DL	Researchers searched databases for results comparing VL and DL	VL showed particular improvements in results for inexperienced providers
<p>Rombey, T., Schieren, M., &amp; Pieper, D. (2018). Video Versus Direct Laryngoscopy for Inpatient Emergency Intubation in Adults: A Systematic Review and Meta-Analysis of Randomized Controlled Trials. <i>Deutsches Ärzteblatt International</i>, 115(26), 437–444. <a href="https://doi.org/10.3238/arztebl.2018.0437">https://doi.org/10.3238/arztebl.2018.0437</a></p>	Level 1 Systematic Review	8 RCT with 1796 patients	VL, DL	Literature search in databases MEDLINE, Embase, and CENTRAL were reviewed for studies	VL decreases number of intubation attempts and esophageal intubations

<p>Evrin, T., Szarpak, L., Katipoglu, B., Mishyna, N., Kockan, B. S., Ruetzler, K., &amp; Schläpfer, M. (2022). Video-Assisted Versus Macintosh Direct Laryngoscopy for Intubation of Obese Patients: A Meta-Analysis of Randomized Controlled Trials. <i>Disaster &amp; Emergency Medicine Journal</i>, 7(1), 30–40.  <a href="https://doi.org/10.5603/DEMJ.a2022.0004">https://doi.org/10.5603/DEMJ.a2022.0004</a></p>	Level 1 Systematic Review	N/A	VL,DL	Researchers searched databases SCOPUS, MEDLINE, CINAHL for results comparing VL to DL	VL is superior to DL due to improved first attempt success, glottis visibility, and lower injuries.
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<p>Jia Jiang, Danxu Ma, Bo Li, Yun Yue, Fushan Xue, Jiang, J., Ma, D., Li, B., Yue, Y., &amp; Xue, F. (2017). Video laryngoscopy does not improve the intubation outcomes in emergency and critical patients - a systematic review and meta-analysis of randomized controlled trials. <i>Critical Care</i>, 21, 1–11.  <a href="https://doi.org/10.1186/s13054-017-1885-9">https://doi.org/10.1186/s13054-017-1885-9</a></p>	Level 1 Systematic Review	12 RCTs with 2583 patients	VL,DL	Researchers searched Cochrane Central Register of Controlled Trials, PubMed, Embase, and Scopus databases and 12 RCTs with 2583 patients were reviewed	VL does not improve intubation outcomes
<p>Huang, H.-B., Peng, J.-M., Xu, B., Liu, G.-Y., &amp; Du, B. (2017). Video Laryngoscopy for Endotracheal Intubation of Critically Ill Adults: A Systemic Review and Meta-Analysis. <i>CHEST</i>, 152(3), 510–517.  <a href="https://doi.org/10.1016/j.chest.2017.06.012">https://doi.org/10.1016/j.chest.2017.06.012</a></p>	Level 1 Systematic Review	5 RCTs with 1,301 patients	VL, DL	Researchers searched PubMed, Embase, and Cochrane database and reviewed 5 RCTs with 1,301 patients	VL did not improve first attempt success
<p>Ba, X. (2022). A Meta-Analysis on the Effectiveness of Video Laryngoscopy versus Laryngoscopy for Emergency Orotracheal Intubation. <i>Journal of Healthcare Engineering</i>, 2022, 1474298.  <a href="https://doi.org/10.1155/2022/1474298">https://doi.org/10.1155/2022/1474298</a></p>	Level 1 Systematic Review	N/A	VL,DL	Researchers searched MEDLINE, CENTRAL, EMBASE	No significant efficiency with VL compared to DL
<p>Scholtis, M. P. (2017). A Randomized, Blinded, Clinical Study of Injury Incidence During Endotracheal Intubation: Comparison of GlideScope Video Laryngoscopy and Direct Laryngoscopy. <i>AANA Journal</i>, 85(6), 445–451.</p>	Level 2 RCT	155 patients undergoing surgery	VL, DL	155 patients were randomized to either Glidescope VL or DL groups	There was no statistically significant difference in injury between VL and DL

Davies, M., & Hodzovic, I. (2021). <i>Videolaryngoscopy Post covid-19</i> . Trends in Anaesthesia & Critical Care. Retrieved January 23, 2023, from <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC513920/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC513920/</a>	Descriptive study	29 articles	Covid19, video laryngoscopy	29 articles were reviewed	video laryngoscopy use offered advantages including improved first attempt success, improved visibility, and improved protection ability
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