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Optimizing Verbal Communication in Tracheostomized Patients: Development of a Clinical Decision Matrix for One Way Valve Use and Above Cuff Vocalisation

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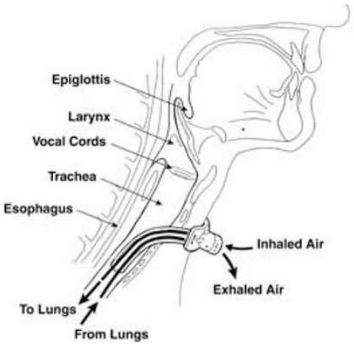
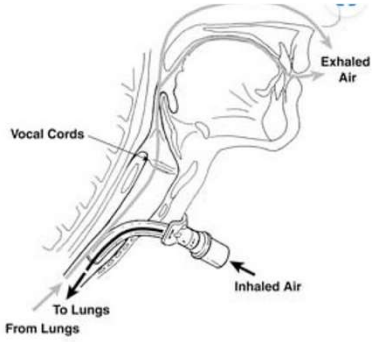
OBJECTIVE(S) AND METHODS

- Effective communication with tracheostomized patients requires selecting appropriate communication techniques. **The most natural way of communicating a message or a though to a person is by speaking**. For tracheostomized patients, this possibility is limited or completely absent when the tracheostomy tube cuff is inflated.
- Communication options for tracheostomized patients can be established using a **One-Way Valve (OWV)** or **Above Cuff Vocalisation (ACV)**.
- A literature search was conducted in October 2025. Studies were eligible if they compared the use of a OWV/ACV against no OWV/ACV, across any physiological or clinical parameter. To construct the algorithm for using a OWV or ACV we used the algorithm as a starting point for selecting alternative communication methods by ten Hoorn et al in 2016[2] and Toivonen in 2026[3]

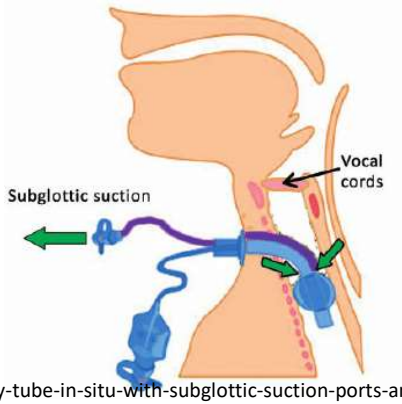
Witout OWV



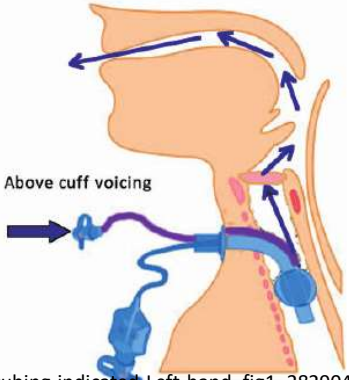
With OWV



Secretion suctioning



ACV



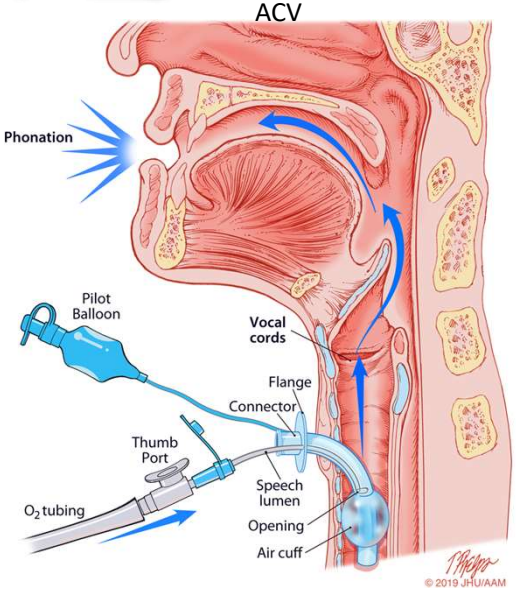
Pictuse source: https://www.researchgate.net/figure/Tracheostomy-tube-in-situ-with-subglottic-suction-ports-and-tubing-indicated-Left-hand_fig1_282904934, https://www.researchgate.net/figure/One-way-speaking-valve-The-one-way-valve-allows-are-to-be-inspired-through-the-trach_fig1_374555738

SHORT INTRODUCTION

- To better facilitate communication, **tracheostomy tubes with a subglottic suction port** should be preferred.
- Voice is achievable whilst tracheostomized patients, both mechanically ventilated or breathing spontaneously, using a One-Way Valve (OWV) with cuff deflation and Above Cuff Vocalisation (ACV) with cuff inflation[1].
- Before these techniques are applied by physicians, physiotherapists, or nurses, **a Speech and Language Therapist** (SLT) should assess upper airway and laryngeal function to ensure safe use of voice and swallowing[1].

Tracheostomy tube with a subglottic suction port

ACV



Picture source: https://tracheostomyeducation.com/subglottic-suctioning-covid-19/,
https://www.researchgate.net/figure/Parts-and-functions-of-a-Blue-Line-Ultra-Suctionaid-tracheostomy-tube-Smiths-Medical_fig1_335000119

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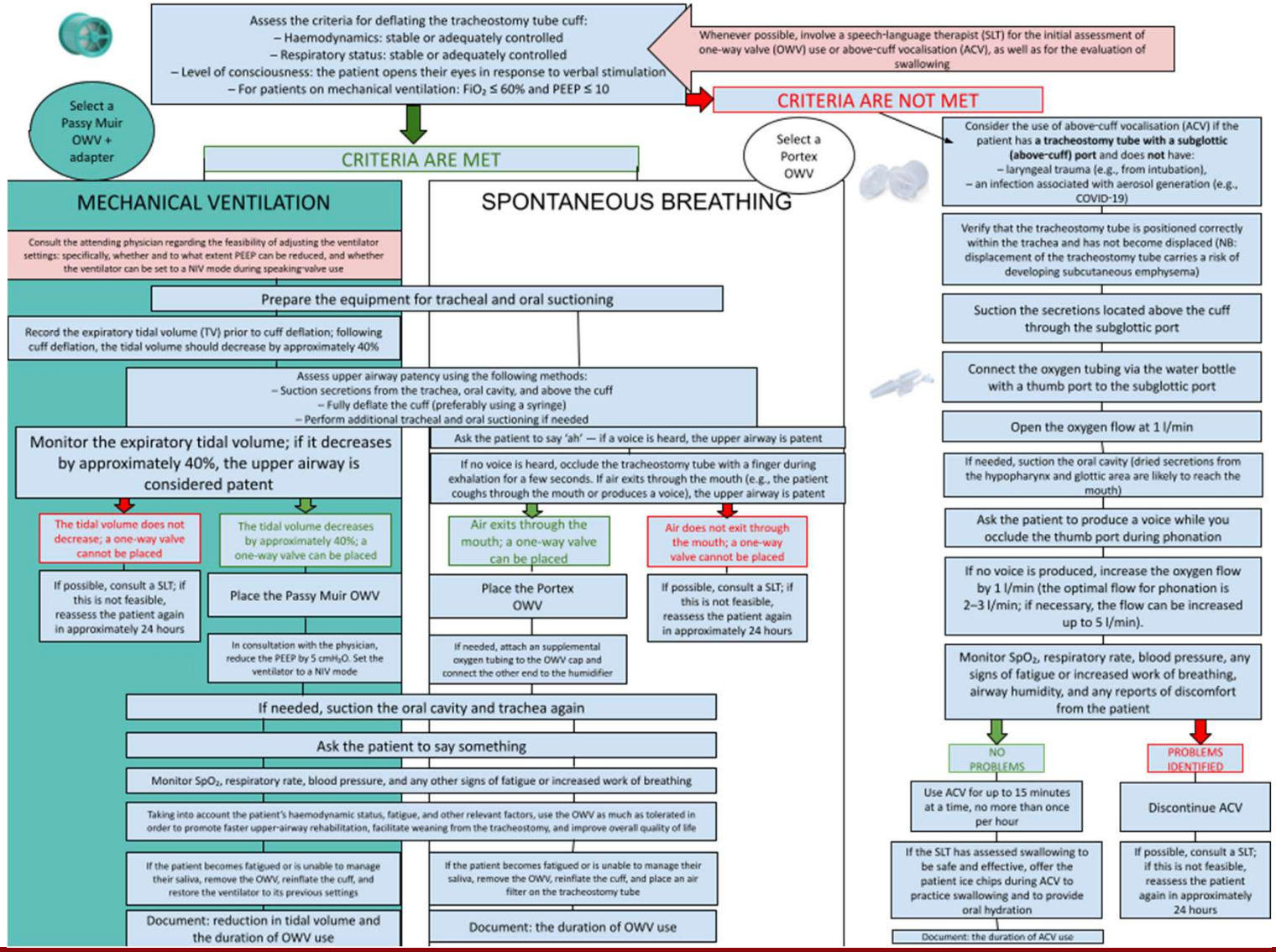
Step-by-step quide for using an OWV or ACV

RESULTS



CONCLUSIONS

- Emerging evidence highlights clear benefits of OWV and ACV in restoring speech and upper airway physiology[1].
- Their implementation requires coordinated multidisciplinary collaboration.
- Before initiating OWV or ACV, consultation with the physician regarding the patient's overall clinical condition and an SLT-led upper airway assessment are recommended to ensure safety.
- Cuff-deflated OWV use should be the first-line communication option.
- ACV with cuff inflation is an appropriate alternative when cuff deflation is limited or delayed.

Picture source: https://tracheostomyeducation.com/ventilator-application-of-speaking-valves/, https://surginatal.com/brands/portex/portex-orator-tracheostomy-speaking-valve-100550000?srsltid=AfmBOopkegaiLRvcwy0EvdrGTopT1nuVaCASv71UEhaJlsa4KQsXJh0n

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