



TRACOE

Unlocking the Functions of  
the Upper Airway Using ACV



## Above Cuff Vocalization (ACV)

In the challenging environment of the Intensive Care Unit (ICU), patients relying on invasive mechanical ventilation often face communication barriers. The inflated tracheostomy tube cuff, while essential for medical reasons, prevents the natural flow of air through the larynx and vocal cords, leaving patients unable to speak and reduce oropharyngeal sensitivity which affects swallowing and coughing abilities.<sup>1,2</sup>

Patients express that the inability to speak is one of the most upsetting aspects of their experience in the intensive care unit (ICU)<sup>1</sup>, and they place a higher value on having a voice compared to other communication alternatives.<sup>3</sup>

For many ICU patients, heightened alertness and wakefulness during their stay intensify the

frustration of being unable to communicate effectively with healthcare professionals (HCP) and family members. This lack of communication can lead to elevated anxiety, stress, and depression.<sup>1</sup>

Above Cuff Vocalization emerges as a promising method to address this challenge, with clinicians describing the therapy as a means to “achieve effective, safe, well-tolerated vocalization in ventilator-dependent intensive care unit patients.”<sup>4</sup>

As well as ACV allowing potential to facilitate earlier and more effective communication, it may also contribute to enhanced laryngeal function and rehabilitation.<sup>4,5</sup> Therefore, it can have positive effects on coughing, swallowing and laryngeal sensation.<sup>2</sup>

# Enhanced Quality of Life in Tracheostomized Patients

While the evidence base is still relatively limited, Above Cuff Vocalization (ACV) has shown promising results in improving communication for tracheostomized ICU patients, with around 50 to 80% achieving vocalization when cuff deflation is not possible.<sup>1,2,4,5</sup> These findings emphasize the importance of above cuff vocalization as a valuable tool in addressing communication

challenges in patients with a tracheostomy in the intensive care unit (ICU).<sup>1,2,4</sup> A limited number of larger studies, including one randomized controlled trial, have demonstrated the safety of ACV and beneficial effects including successful phonation, improvement in cough and swallow function, and improved quality of life in mechanically ventilated patients.<sup>2,4,9</sup>

## The Impact of Subglottic Suction Tubes

There is growing evidence which supports the increased use of subglottic suction tracheostomy tubes as the primary insertion tube in acute settings to reduce ventilator-associated pneumonia (VAP)<sup>6-8</sup> and to decrease mortality.<sup>6</sup> This also opens up the possibility of applying Above Cuff Vocalization earlier in the patient's care journey.<sup>5</sup>

When a subglottic suction tube is in place, it provides an opportunity to address both medical and communication needs simultaneously. This not only ensures effective secretion management but also allows patients to maintain their ability to vocalize, thereby reducing the negative impact on their mental and physical well-being.<sup>9</sup>

## Delirium and ACV

ICU patients with delirium are linked to extended hospital stays, prolonged mechanical ventilation, increased adverse events, memory loss, and higher mortality rates. Therefore, non-pharmacological interventions like early mobilization, reorientation, sleep improvement and adequate pain therapy, can modify

contributing factors, reducing delirium prevalence.<sup>10</sup> ACV is a potential option for reestablishing voice in patients with a cuffed tracheostomy, and therefore this can assist clinicians in better understanding the patient's level of delirium, to aid in assessment and management.<sup>11</sup>

### A Summary of ACVs Benefits:

1. Continued, uninterrupted ventilation
2. Improvement of swallow function<sup>2</sup>
  - Increased swallow frequency<sup>2</sup>
  - Increased laryngeal sensation to secretion pooling in the upper airway leading to potentially improved saliva management<sup>2,11</sup>
  - Generation of subglottic pressure during ACV may lead to more successful swallow and reduced aspiration risk<sup>11</sup>
3. Translaryngeal airflow may lead to triggering of vocal fold mobility for voice and cough<sup>11</sup>
4. Restoration of speech to allow for better understanding of cognition and mood<sup>11</sup>
5. Improvement in Quality of Life<sup>2,9</sup>

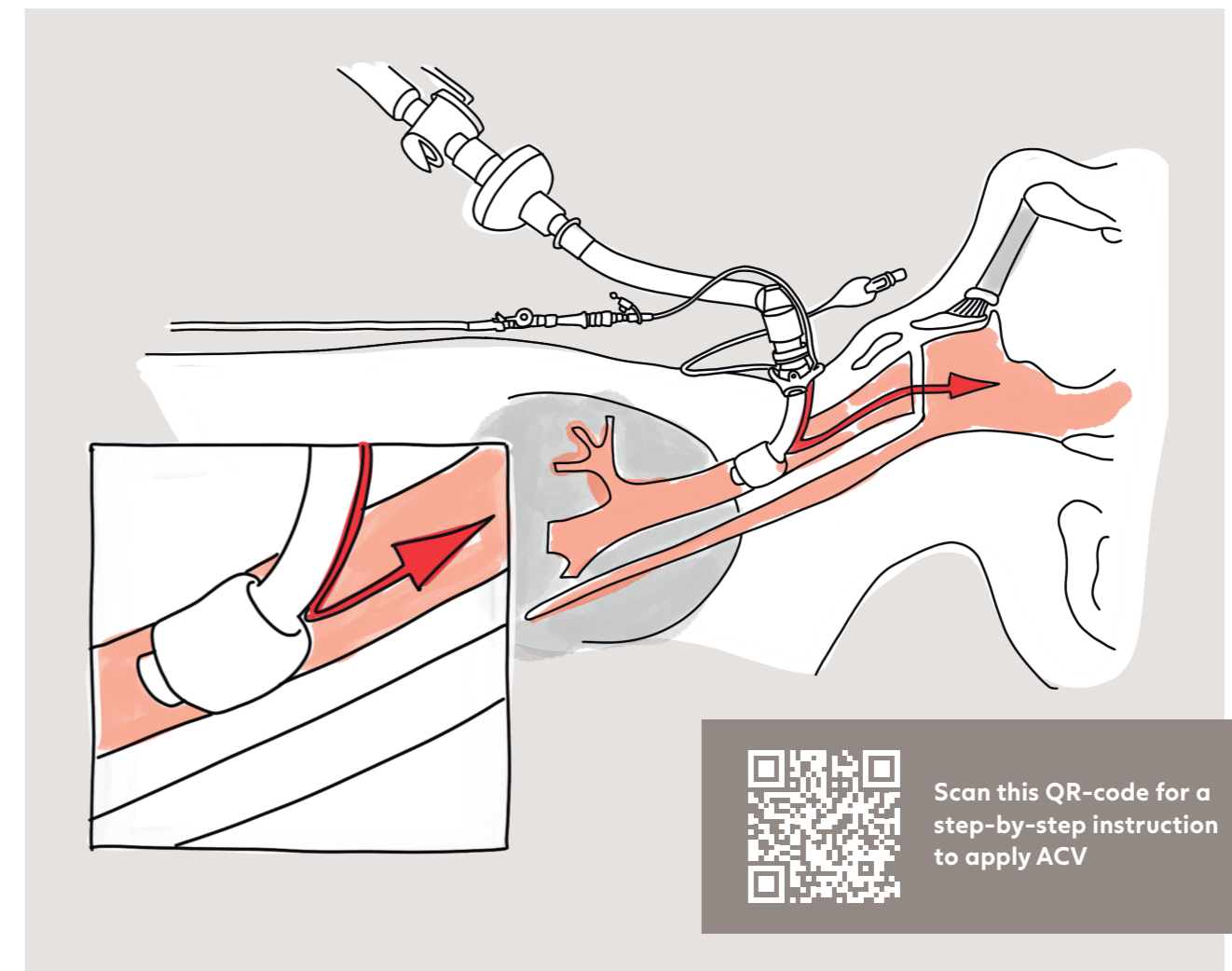
# The Procedure

The implementation of ACV holds promises for positively impacting communication, swallowing, and overall quality of life in patients with a tracheostomy.<sup>2</sup>

involved in every step of ACV to ensure good cooperation and results during application. Please note that not every patient will be able to voice, and some patients might require multiple efforts.

ACV is used in order to improve the patient's quality of life.<sup>2</sup> Therefore, it has to be adjusted to the individual patient's needs and abilities. It is substantial that the patient is instructed to and

Above Cuff Vocalization involves the controlled application of a continuous or intermittent airflow directed through the subglottic port of a tracheostomy tube. This airflow traverses the laryngeal anatomy, allowing for vocalization and the potential restoration of oropharyngeal and laryngeal sensation.



Additional training on the suitability and application of ACV should be sought either locally or through external sources like the Atos Learning Institute (ALI) before attempting initiation.

# Tracoe Extract Tubes for ACV

By using subglottic suction tubes, accumulated secretions in the subglottic space can be suctioned off at the lowest point possible, above the low-pressure cuff. This reduces the risk of bacterially contaminated secretions passing into the lower respiratory tract.<sup>6,8</sup>

All Tracoe Extract tracheostomy tubes are also approved for utilizing the subglottic suction

channel or suction line for Above Cuff Vocalization (ACV). To enable voicing, air and/or oxygen can be introduced through the subglottic suction, directed toward the upper airway through the vocal folds. Always consult the products IFU before initiating ACV to ensure alignment with specific instructions for patient selection and delivery.

## Tracoe Twist Extract

Tracheostomy tube with 2 inner cannulas and a curved neck flange that moves across all axes. The thin wall provides a good ratio of the outer to the inner diameter. The innovative, flat and stable suction channel provides a significantly improved suction performance and is attached to the tube and its opening lies at the lowest possible point above the cuff. Available also as P-tube for primary tube placement.



## Tracoe Twist Plus Extract

This tracheostomy tube with 2 inner cannulas incorporates all the advantages of the Tracoe Twist but is somewhat longer and has an even thinner wall. It offers patients a tube with a small outer diameter but the largest possible lumen. Here, the innovative, flat and stable suction channel is also attached to the tube with its opening at the lowest possible point above the cuff. Available also as P-tube for primary tube placement.



## Tracoe Vario/Vario XL Extract

Single lumen tracheostomy tube with an adjustable neck flange. Using a practical push-button mechanism, the neck flange can be adjusted individually for each patient. The flexible wings on the flange can also be independently adapted. The clear plastic subglottic suction line embedded in the tube wall opens at the lowest possible point above the cuff. The Vario Extract tubes are available in both extra-long and standard lengths and as P-tubes for primary tube placement.



# Ordering Information

Ref.no	Product name	Available sizes
REF 306	Tracoe Twist Extract	07-09
REF 306-P	Tracoe Twist Extract-P	07-09
REF 316	Tracoe Twist Plus Extract	07-10
REF 316-P	Tracoe Twist Plus Extract-P	07-10
REF 470	Tracoe Vario Extract	07-10
REF 470-P	Tracoe Vario Extract-P	08-09
REF 471	Tracoe Vario XL Extract	07-10
REF 471-P	Tracoe Vario XL Extract-P	08-09

To order, specify: REF + Size, e.g. REF 316-08 or REF 316-08-P

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