



**TRACOE Portfolio  
for Neonates, Infants  
and Children**

FOR LITTLE HEROES

**TRACOE®**

# LITTLE HEROES

**Children are smaller and less experienced than adults, but are more flexible and trusting, with more open minds. Their potential for development, within their individual realms of possibility, can be utilised in therapy in order to support the rehabilitation.**

---

From birth onwards, structures contributing to physique, respiration and phonation continue to develop - neither the anatomy nor the physiology is finalised or mature. <sup>1</sup>

Growth of the respiratory tract, an increase in the number of alveoli and the stabilisation of the thoracic skeleton may improve the individual situation of the tracheostomised child and encourage its development. In paediatric care, products must not only be suitable for the child's size and growth phase, but must also correspond to the dimensions and proportions of the airways. <sup>2</sup>

Children's anatomical structures are highly sensitive and react strongly to manipulation and compression. Compression of the tracheal mucosa by a tube, for example, may cause local inflammation and oedema. Irreversible damage and stenosis may occur, if a tube is needed for a prolonged period. <sup>3</sup>

**A child's trachea is narrow and very soft. A flexible, kink-resistant, but soft silicone tube is gentle on the tracheal mucosa and the stoma itself.**

---

The tube size and especially its length must continuously be adapted to the child's growth. In a trachea measuring just a few centimetres in length, mere millimetres may be decisive in obtaining a good fit, determining the distance from the carina and, consequently, the child's well-being.

In addition, a cuff that lies flush when deflated (e.g. an H<sub>2</sub>O Cuff) promotes ventilation of the pharynx and increased sensitisation via the air flow along the tube. The H<sub>2</sub>O Cuff is filled with sterile water and can be used, for example, with the minimal occlusive volume (MOV) technique. <sup>4,5</sup>



## The characteristic anatomy with a large occipital region and short neck, especially in infants, causes anteflexion of the head and makes access to the tracheostoma more difficult.

Proximally extended tubes offer an additional gap: the 15 mm connector of the tube is easier accessible. This prevents the development of pressure points or edges in the sensitive areas of the chin or chest. Accessories such as an HME or speaking valve may be used with hardly any restriction. In addition, the child has more freedom to move the head and neck, rarely unimpeded by the accessories.



## Supporting the development of speech with a speaking valve

Mobility of the vocal cords together with an adequate air flow are absolutely essential for the production of sounds and voice.

The diameter of the tracheostomy tube should leave enough free space in the trachea to allow air to flow past the tube towards the vocal cords. On expiration, air can be diverted around the tracheostomy tube to the upper airways. With a speaking valve connected to the tracheostomy tube, air is redirected upwards through the larynx, pharynx, nose and mouth, increasing oropharyngeal sensitivity. Not only are the sensations of smell and taste enhanced, but the child is also able to feel the saliva present in the pharynx.

The expiratory resistance is considerably higher when a speaking valve is connected than when breathing through an open tracheal tube. In the adaptation or transition phase, the use of an adjustable valve that also allows some expiration through the valve has proved its worth. The TRACOE phon assist speaking valve allows the expiratory resistance to be adjusted individually in line with the child's strength and ability to breathe.<sup>6,7</sup>

Top priority is given to the selection of the tube diameter based on the child's specific needs. The use of a speaking valve in children must always be discussed with the specialists in charge of treatment.



### References:

- 1 S. Frey, Pädiatrisches Dysphagiemangement. Eine multidisziplinäre Herausforderung, Urban&Fischer
- 2 J. Hammer, Home mechanical ventilation in children: indications and practical aspects. Schweiz Med Wochenschrift 2000; 130: 1894-1902
- 3 C. Höhne, M. Haack, A. Machotta, U. Kaisers, Atemwegsmanagement in der Kinderanästhesie, Anästhesist, 7/2006; 55: 809-20
- 4 Boesch RP1, Myers C, Garrett T, Nie A, Thomas N, Chima A, McPhail GL, Ednick M, Rutter MJ, Dressman K; Prevention of tracheostomy-related pressure ulcers in children. Pediatrics. 2012 Mar;129(3): e792-7. doi: 10.1542/peds.2011-0649. Epub 2012 Feb 20
- 5 Rose L1, Redl L., Minimal occlusive volume cuff inflation: a survey of current practice. Intensive Crit Care Nurs. 2008 Dec;24(6):359-65. doi: 10.1016/j.iccn.2008.05.002. Epub 2008 Jul 1
- 6 N. Bähre, Sprechventile bei tracheotomierten Kindern und warum ihr Einsatz so wichtig ist, beatmet leben, 02.2018
- 7 H. Prigent et. al.: "Characteristics of tracheostomy phonation valves." Eur Respir J 2006; 27: 992-996

## TRACOE silcosoft® Tracheostomy Tube

REF 360 – 363 / REF 370 – 373

---

Soft, flexible silicone tracheostomy tube with nitinol spiral reinforcement, with and without H<sub>2</sub>O Cuff, for neonates and children. Special features include the optimally shaped neck flange and the patented, specially reinforced eyes in the flange. The cuff supply line is embedded in the tube wall and is not noticeable. Different lengths are available from stock soon. Available in sizes 2.5 to 4.0 respectively 2.5 bis 5.5.

---



## TRACOE mini Tracheostomy Tube

REF 350 / 355

---

Our tried and trusted tracheostomy tube for neonates and children is a soft, thin-walled, but stable PVC tube without DEHP. The large eyes on the neck flange make it easier to change the neck strap. The ring obturator ensures safe insertion. Different lengths are available on request. Available in sizes 2.5 to 6.0.

---

## TRACOE kids Extension Piece with Disconnection Wedge

REF 356

---

The extension piece allows more freedom of head movement and prevents occlusion of the tube opening. The dead space is increased by about 3.5 to 4 ml (cm<sup>3</sup>), which corresponds to the normal dead space of a 2- to 3-years old child. Fits all kid's tubes up to an inner diameter of 6 mm.

---



## TRACOE comfort Tracheostomy Tube

e. g. REF 104-A-05

---

The hand-made long-term tube can be used for up to 6 months and is also available in small sizes. The soft, transparent, flexible and light material (DEHP-free) also offers flexibility and comfort to young patients. Variants of this product can be made to order. Available in sizes 03 to 14.

---

## TRACOE phon assist I Speaking Valve

REF 650-T / 650-TO / 650-TO-C

The speaking and therapy valve with adjustable air supply from the side, with and without oxygen supply port, for patients with tracheostomies. Perception of the natural air flow in the upper respiratory tract improves oropharyngeal sensation and stimulates the swallowing reflex. 'Find the voice' – makes speech training easier, especially in children. Transparent or signal colour.



## TRACOE humid assist *kids* Heat & Moisture Exchanger

REF 643

Heat/moisture exchanger (HME) with paper filter for attachment to any paediatric tube with a 15 mm connector. It warms, moistens and filters the respiratory air, increases the airways resistance and contributes to the rehabilitation of the lungs. May be used in children with a tidal volume (TV) of between 7 ml and 50 ml.



## TRACOE care Neck Strap for Children

REF 903-G

Soft cushioned neck strap to hold the tube securely. It is individually adjustable and is fitted with a hook-and-loop fastener. Strap width 2.6 cm – max. length approximately 29 cm

## TRACOE purofoam Tracheostomy Dressings small

REF 959

Highly absorbent tracheostomy compresses made from polyurethane foam for the care of newly fashioned or sensitive tracheostomas, as well as for covering healed, but still weeping tracheostomies or other artificial orifices. For tube sizes 03 to 05. Dimensions: approximately 6.5 x 6.5 x 0.5 cm



## TRACOE care Tracheal Compresses with zigzag slit for Children

REF 961

Tracheal compresses to absorb secretions. They cushion and protect the sensitive skin around the stoma and are adapted to the anatomy of neonates and children. For tube sizes 03 to 05.

Dimensions: approximately 6.5 x 6.3 cm

## TRACOE aeris balloon dilatation catheter REF 820

---

The high-pressure balloon catheter for the gentle treatment of laryngotracheal stenosis. A minimally traumatic method to normalise the respiratory tract. The innovative non-slip design of the balloon allows the formation of two bulges at the distal and proximal ends the first time it is inflated. These help to keep the balloon precisely and safely in the stenosed region while dilating. Available in sizes 05 to 18.



## TRACOE high pressure inflation device REF 725

---

