

Useful Definitions for Tracheostomy

15mm Adaptor

A device that attaches to a *tracheostomy tube* and permits connection to ventilation equipment. Many *inner cannulas* have 15mm adaptors built in.

Adhesive Carrier

Adhesive tape based on a non-allergenic hydrocolloid to be attached to the skin around the tracheostoma. Special speaking valves and HMEs fit into it. For patients who no longer need a tracheostomy tube to keep the tracheostoma open

Airway resistance

Resistance in the lungs that the airflow must overcome during respiration

Alveolus, alveoli

Pulmonary alveolus; an air cell of the lungs, 0.25.-0.3 mm in diameter, with a total surface area of 70-80 m²

Anomaly

Irregularity; a minor developmental disorder

Artificial airway

A surgically created opening in the *trachea* that bypasses the normal upper airway system (nose and mouth). Also called "*tracheostomy*" or "*tracheostoma*"

Aspiration

When food, saliva, or other substances enter the trachea instead of the *esophagus*. Can cause coughing and discomfort

Atmospheric

Of or relating to air (atmosphere)

Bacterial

Of, relating to, or caused by bacteria

Balloon

A balloon-like part of the lower *outer cannula* of a *tracheostomy tube* that can be inflated. The balloon is inflated via the *inflation line* and monitored by the *pilot balloon*. Used to block and seal the space between the tube and the *trachea*. When inflated, a direct passage to the lungs is created and breathing will be directed through the *tracheostomy tube*. May also be used to control *aspiration*. Also known as a cuff

Candida

A yeast-like fungus that can attack an indwelling device such as a voice prosthesis or

tracheostomy tube. This fungus can eventually alter or destroy the surfaces of the devices, making them not work properly

Cartilage

Firm, rubbery connective tissue that cushions bones at joints

cc

The abbreviation for cubic centimeter. Used to measure volume of air in a *tracheostomy tube balloon*

Connector, 15mm connector

Place or port where the 15mm connector is used as a standard connection for all ventilation / moistening products

Cuff

Inflatable cuff at the distal (lower) end of an endotracheal tube or a tracheostomy tube, used to seal off the space between tube and tracheal wall; a large-volume cuff with a thin wall (called low pressure cuff) is used during long-term ventilation to prevent tracheal wall damage; regular monitoring of cuff pressure is necessary

Cuff herniation

Sac-like protrusion of the cuff as a result of overfilling or damage to the material; may result in obstruction / blockage of the respiratory tract in the direction of inspiration and / or expiration

Cuff pressure monitor, cpm

A hand-held cuff pressure measuring gauge to fill and monitor the pressure of high-volume, lowpressure cuffs of tracheostomy and endotracheal tube

Cuffed tube

Tube inserted in the trachea secondary to tracheotomy or tracheostomy to maintain patency of the tracheal stoma; usually tracheal tubes with an inflatable cuff are used for ventilation (to block and seal the space between tube and trachea), comparable with the endotracheal tube

Cuffless tubes

Tracheal tube without a cuff, used in self-ventilating patients and generally in children / infants

Dead space

Part of the respiratory tract not involved in the respiratory exchange of air; used here to indicate the anatomical dead space of the upper respiratory tract extending from the mouth to the bronchioles (approx. 150 ml in volume); serves in cleaning, heating and moistening the respiratory air and in speech production

Diaphragm

Muscle in chest used for breathing; separates the abdomen from the chest cavity

Dilation

The act of enlarging a hollow structure, like the trachea

Electrolarynx

An electronic device used to produce a mechanical voice. Placed in the corner of the mouth or against the skin of the neck

Encrustation

Hard and dried build-up of *mucus*. Must be removed from *tracheostomy* or *laryngectomy tube* to ensure maximum airflow

Endotracheal tube

Ventilation tube for oral or nasal endotracheal intubation; a tube cuff at the tracheal end seals off the trachea

Epiglottis

"Trap door". A structure made of cartilage that overhangs the *larynx* like a lid and prevents food, saliva, and liquids from entering the *larynx* and *trachea* while swallowing

Epithelialization

Formation over a wound of epithelial cells originating from intact tissue within the wound margins

Esophageal Speech

The technique of swallowing air and belching to create speech

Esophagus

"Food pipe" The food and fluid passageway from the mouth to the stomach. Located behind the *trachea*

Expiration

Exhalation; outflow of air from pulmonary alveoli and respiratory tract resulting from a pressure elevation in the thorax, induced by the elastic retraction capacity of the lungs (passive) during intensified respiratory work by causing the respiratory muscles to contract (called forced expiration)

Fingertip

Opening on suction catheters, among others, where a finger controls the suction process by closing / releasing the opening

Fenestrated inner cannula

Inner cannula with hole(s). Permits air to flow through the *tracheostomy tube* upward into larynx, mouth, and nose. *Outer cannula* must also be fenestrated to work

Fenestration

A single hole or pattern of smaller holes

Fistula

An opening (either planned or abnormal) between two structures such as the trachea and esophagus.

Glottis

The middle part of the *larynx* where the *vocal cords* are located

Granulation tissue

Tissue that can grow in or around the *trachea*. Can block lower part of *tracheostomy tube* or creep into *tracheostomy tube fenestrations*. Can usually be treated with medication or removed by doctor

HME device

Heat / Moisture Exchanger. A filter-like device that, when attached to the outside of a *tracheostoma*, will trap heated and moisturized air from the lungs during *expiration*. The heated and moisturized air is then re-delivered to the lungs during *inspiration*

Inflation line

Thin plastic line attached to *tracheostomy tube balloon* on one end and *pilot balloon* and *Luer valve* on other end. Used to inflate and deflate *tracheostomy tube balloon*

Inflation syringe

A plastic syringe without needle used to inflate the *tracheostomy tube balloon* through the *inflation valve*

Inner cannula

Replaceable interior of tubular structure in tracheal tubes used to simplify cleaning and tube care; the actual tube remains in situ, thereby preventing contraction of the tracheal stoma during a tube change

Inflation valve

The valve at the end of the *inflation line* used to inflate the *tracheostomy tube balloon*

Inner cannula

The inner removable tube that fits inside the outer cannula. May be removed to clean or exchanged with different inner cannula. May be *fenestrated* or not. May have different outside ends such as *15mm adaptor*, *low profile*, or *speaking valve*

Inspiration

Breathing in of air to lungs

Insufflation test

A test given to a laryngectomee before receiving a *tracheoesophageal puncture* procedure to determine his/her potential ability to speak using a *voice prosthesis*

Intubation

Insertion of an endotracheal tube in the trachea through the mouth (oral) or nose (nasal) through vocal folds / larynx in the trachea for securing the airway

Laryngectomee

A person who has had his or her *larynx* removed

Laryngectomy

Partial or total surgical removal of the larynx, usually as a treatment for laryngeal cancer

Laryngectomy Tube

A tubular device placed in the *tracheostoma* to provide support

Laryngoscope

A flexible lighted tube used to examine the *larynx*

Laryngoscopy

Examination of the *larynx* with a mirror (indirect laryngoscopy) or with a *laryngoscope* (direct laryngoscopy)

Larynx

"Voicebox" or "Adams apple". Located on top of the *trachea*. Contains the *epiglottis* and *vocal cords*

Lot number

Unique number assigned by the manufacturer that identifies your *voice prosthesis* and *tracheostomy tube*

Low profile

Used to describe the outside end of a *tracheostomy tube* or *speaking valve* that is short and close to the neck

Lumen

The inside of the *tracheostomy tube* through which air passes

mm

The abbreviation for millimeter. One millimeter equals .039 inches

Mucus

A thick, sticky fluid made by the mucus membranes and glands of the airway walls. A large buildup of mucous below or in the *tracheostomy tube* can create a "mucus plug" and can partially or completely block the passage of air through the tube

Nasal

Through the nose

Neck dissection

Surgery to remove cancerous lymph nodes in the neck

Neck plate

The outer part of the *tracheostomy tube* that rests against the neck. Most neck plates have slots through which *trach ties* or *neck straps* can be attached. Usually the catalog number and size of the *tracheostomy tube* is marked on the neck plate

Neck straps

Soft fabric strap attached to *tracheostomy tube neck plate* to help keep tube in place. Some neck straps are adjustable

Obturator

A device that fits inside the *tracheostomy tube* prior to insertion into the *tracheostoma*. When inserted into the tube, the obturator creates a blunt point at the bottom of the tube to make tube insertion easier and more comfortable. The obturator is immediately removed following tube insertion

Oral

Through the mouth

Outer cannula

The main tube with neck plate that is placed into the *trachea*

Patent, Patency

Open, clear airway

Persistent

Lasting, continued

Phonation

Voice and sound production; the utterance of vocal sounds at different frequencies

Pilot balloon

The small balloon at the end of the *inflation line* which inflates along with the *tracheostomy tube balloon* and indicates the amount of air pressure within the balloon

Pneumothorax

The presence of air or gas in the pleural cavity which counteracts the usually prevailing negative pressure; leads to partial or complete collapse of the affected person's lungs and loss of pulmonary function

Pilot balloon

The small balloon at the end of the *inflation line* which inflates along with the *tracheostomy tube balloon* and indicates the amount of air pressure within the balloon

Sedation

Calming, suppressant effect on the central nervous system; e.g. through tranquilizers during anesthesia induction or sleeping pills, at low dosages

Shaft

In this context: outer tube / outer lumen of a tracheostomy tube

Shunt valve

A bypass or diversion

Speaking valve

A one-way valve device that permits speaking without the need for the patient to cover the *tracheostomy tube* with his/her finger. The valve will open during *inspiration* to allow air to be inhaled, and close during *expiration* to direct air up through larynx and mouth

Stoma

A hole through the front of the neck into the *trachea*

Stoma button

Straight-shaped, short, silicone tube for patients who no longer need a tracheostomy tube but still need to prevent stoma contraction

Suctioning

One method to keep the inside of the *tracheostomy tube* clean and free of mucus. A small catheter connected to a suction machine is placed into the *tracheostomy tube* to remove accumulated *mucous* and other substances

Swivel neck plate

A neck plate that can swivel up and down and/or side to side. Allows for greater range of head and neck movement without discomfort caused by tracheostomy tube pressing against the inside of the trachea

Trach

Shortened version of *tracheostomy*. Rhymes with "lake"

Trachea

"Windpipe". The passageway through which air flows between the *larynx* and the lungs

Tracheal rings

Tracheal cartilages; the incomplete rings of hyaline cartilage forming the skeleton of the trachea

Tracheal stenosis

Narrowing of the trachea; causality: congenital or induced by pressure from outside (enlarged thyroid, tumor), foreign bodies, resulting from injury or intubation

Tracheal stoma, tracheostoma

An opening in the trachea created surgically from the outside, usually used for placement of a tracheal tube

Tracheal wall

The inside lining of the *trachea*

Tracheoesophageal Puncture (TEP)

A surgically created opening between the *trachea* and *esophagus* performed either during the *laryngectomy* procedure or later as a secondary operation. A *voice prosthesis* is placed in the opening to allow speech

Tracheostoma

An opening in the neck. Also called "tracheal stoma" or simply "stoma"

Tracheostomy Tube

A tubular device placed into the *tracheostoma*. Also called a *laryngectomy tube*

Tracheostomy

The opening of the trachea without wall resection by creating one or two anterior wall flaps that are sutured together with the superior and inferior wound margin of the horizontal incision made for access; compared with tracheotomy, there is no wall loss and no stenosis around the stoma after the wall segments are sutured back together

Tracheostomy tube, tracheal tube

Tube inserted through the tracheal wall into the trachea below the larynx following a tracheostomy to keep the tracheal stoma open and maintain patency of an (artificial) airway

Tracheotomy

Incision into the trachea; surgical opening of the trachea, usually performed as a superior tracheotomy for insertion of a tracheotomy tube; nowadays a tracheostomy is usually performed instead

Transnasal

Through the nose

Trach ties

Fabric, usually cotton twill, used to secure the *tracheostomy tube* in place. Connects to the slots in the *tracheostomy tube neck plate*

Vocal cords

Located inside the *larynx*. The vocal cords move and vibrate as air passes through to create sounds and speech

Voice prosthesis

A small tubular device placed in the *tracheoesophageal puncture*. The device will have some sort of one-way valve to allow expired air from the lungs to pass up through to the *esophagus*, and will close to prevent food and liquids from entering the *trachea* from the *esophagus*. The device enables laryngectomees to produce speech by creating an airflow to the esophagus, vibrating the esophagus to create sound, and allowing the tongue, teeth, and lips to form speech