

## Endotracheal Intubation



Figure 1. Endotracheal intubation being performed

### *What is this procedure?*

Endotracheal intubation is the placement of a flexible plastic tube (endotracheal tube) into the trachea. The endotracheal tube is either inserted through the mouth or the nose. Correct position is confirmed by doctor and the tube is then secured.

Patient is usually given sedation for comfort. After intubation, patients will be unable to speak and eat per orally.

After the endotracheal intubation, the patient will be connected to a ventilator. Health care providers will continue to monitor the patient and provide breathing treatment.

### *Why is there a need to do it?*

#### **It is required when:**

- Patient is unable to protect the airway
- Loss of airway patency or risk of obstruction
- Inadequate breathing with a need for mechanical ventilation

### *How is it done?*

#### **Before the Procedure:**

- Doctor fully explains the procedure to patient if condition allows
- Dentures or loose teeth are removed before intubation

#### **The Procedure:**

- Patient is in supine position with head and neck placed in appropriate position.
- Pure oxygen is administered at a high flow rate.
- The procedure is then performed under either general or local anaesthesia
- Endotracheal tube of suitable size is inserted through mouth or nose with the use of laryngoscope or bronchoscope.
- After confirmation of the tube placement, the endotracheal tube is secured with tapes or ties.

- The endotracheal tube is then connected to a breathing machine which provides invasive assisted ventilation (Please also see the Patient Information Leaflet “Invasive Assisted Ventilation” for details).
- Chest X-ray is taken afterwards to confirm the position of the endotracheal tube.

**After the procedure:**

- Patient is usually given sedation and pain-killer to relieve the associated discomfort. They may lose some of their consciousness or even become unconscious.
- A bite block may be placed in mouth to prevent patient from biting onto the tube and occluding the airway.
- Frequent suctioning through the tube and physiotherapy may be necessary to maintain airway clearance and to improve lung expansion.
- Patient may be restrained if they have the intention to pull out the tube by themselves. Explanation will be given to relatives if this happens.
- Eating and drinking is not allowed. Mouth care is provided to maintain mouth hygiene.

**Follow up:**

- The breathing tube may be removed when condition improves and ventilation support is no longer required.
- If patient does not improve and requires ventilation for a long period (more than 2 weeks), a breathing tube (tracheostomy tube) inserted through a surgical opening in neck may be recommended to replace the endotracheal tube.

**When to stop?**

- The breathing tube may be removed when condition improves and ventilation support is no longer required.
- For some patient requiring prolonged ventilation, a tracheostomy may be needed.

**Risks and complications****During the procedure:**

- Loose or damage to teeth and denture
- Nose bleeding in nasal intubation
- Trauma to airway causing bleeding or swelling
- Malposition of endotracheal tube
- Oral or stomach contents going to airway
- Cardiovascular system instability
- Spinal cord injury
- Failed intubation
- Death

**When endotracheal tube is in place:**

- Blockage or kinking of endotracheal tube
- Dislodgement or malposition of endotracheal tube
- Mucosal damage and bleeding of airway

**After endotracheal tube is removed:**

- Hoarseness
- Sore throat
- Vocal cord palsy
- Tracheal stenosis

***Possibility that the procedure cannot be carried out***

There is a possibility that the procedure cannot be performed. In case the endotracheal intubation cannot be performed, an emergency surgical airway access may be needed. In some emergency situation, an airway has to be set up by direct creation of a hole in front of the neck into the windpipe.

***Other treatment options***

The patient may choose to not undergo this procedure. The degree of impact this decision may have on the patient's health condition depends on a variety of clinical factors, such as the individual patient's physical condition before the onset of illness, the type of disease, the response to treatment and the progress. The doctor will explain suitable alternative options to the patient and family members.

***Disclaimer***

The information provided in this booklet is for general reference only. The risks and complications listed above are not exhaustive. Please consult your attending doctor for details.