1. PURPOSE

1.1 To maintain a secure and patent airway.

1.2 To minimize tracheal erosion by limiting movement of the tube.

1.3 To minimize oral trauma by moving the tube from side-to-side.

2. POLICY

Who may care for

- Registered Respiratory Therapists (RRT)
- Registered Nurses certified in Special Nursing Procedure Endotracheal Tubes (ETT) - Securing, Care of
- Nurse practitioners (RN-NP)
- Intermediate Care / Advance Care Paramedics

Special considerations

- Securing of ETT is across the maxilla (upper jaw) to decrease chance of displacement, unless patient condition contraindicates this.
- Securing of Endotracheal Tubes requires two qualified health care personnel (HCP).
- A HCP qualified in intubation must be readily available when securing ETT.
- When ETT unsecured, one personnel must always hold the ETT until securing is completed.
- Oral ETT should be repositioned every 24 hours and pm in adult patients and only on a pm basis for pediatric patients.
- ETTs should be resecured at earliest possible opportunity if the current securing method does not appear stable.
- When securing ETT, avoid wrapping securing devices around tube of pilot balloon.
- Cuff will not be deflated prior to moving ETT side-to-side.
- RRT or physicians will retract or advance, ETT
- Patient monitoring is required during ETT care and securing. Ventilated patients - ETCO₂ and SpO₂. Non-ventilated patients - SpO₂
- Pediatrics: additional analgesic or sedative may be required for securing ETT.
### Supplies
- Appropriate size of bag-valve-mask (BVM) device.
- Adhesive tape, and two tongue depressors or twill tape or commercially available securement device
- Wet and dry face cloths
- Shaving equipment, pm
- Bite block / oropharyngeal airway
- Adhesive tape remover if using adhesive tape
- Skin prep or hydrocolloid membrane to protect skin if necessary
- Personal protective equipment - Goggles / Face Shield, gloves.

### 3. Procedure

#### 3.1 Securing / resecuring ETT

3.1.1 Explain procedure to patient and family as appropriate and how they can assist procedure.

3.1.2 Administer analgesic or sedative as ordered.

3.1.3 Perform hand hygiene.

3.1.4 Don personal protective equipment.

3.1.5 Suction oropharynx / nasopharynx prior to procedure.

3.1.6 Note the proper ETT level of insertion in “cm” (gums / teeth in adults, and upper lip in pediatrics) as landmark.

3.1.7 Auscultate air entry prior to procedure for comparison post procedure.

3.1.8 Loosen securing device. If using adhesive tape method remove any old adhesive with adhesive tape remover and wipe off with wet face cloth.

3.1.9 Inspect condition of face, lips and oropharynx for any break in integrity.

3.1.10 Shave required area if necessary, being mindful of patient’s cultural norms.

3.1.11 Reposition tube to opposite side of mouth or center. Prior to moving ETT, if patient is able to, ask patient to open his/her mouth. If not, gently open mouth with tongue depressor.

3.1.12 Resecure ETT. For Adults: see Appendix A. For Pediatrics: see Appendix B.

3.1.13 Auscultate lung fields to ensure air entry is equal bilaterally and compare to pre-procedure auscultation.

#### 3.2 Routine care of endotracheal tubes

3.2.1 Ensure continuous monitoring of patient. ETCO₂ monitoring should be used where feasible. PICU: ETCO₂ monitoring at all times unless otherwise ordered.

3.2.2 Ensure appropriate sized facemask and BVM connected to oxygen flowmeter is readily available at all times.
3.2.3 Auscultate lung fields for adequate air entry: adults q4h, pediatrics q2h, and pm. Continuously assess patient for deterioration and complications of displacement, obstruction, pneumothorax, oxygenation and ventilation equipment failure.

3.2.4 Provide mouth care as per unit specific protocols.

3.2.5 Use oral airway or bite block if necessary. RRT to assist with insertion of bite block.

3.2.6 Suction endotracheal tube as indicated. Refer to policies: Suctioning Adult Patients with Artificial Airways (#1019); Suctioning Pediatric / Neonate Patients Ventilated (Conventional and High Frequency) Via Artificial Airways (#1056).

3.2.7 Place ventilator / humidity tubing in dependent position in order to drain condensation away from patient.

3.2.8 Protect the patient from self-extubation by:

- Educate / reassure patient / family regarding presence of ETT
- Ensure the ETT is properly secured at all times,
- Prevent pulling and jarring of the ventilator / humidity tubing and ETT.
- Patient may need to be restrained if the nurse feels it is necessary to prevent patient from pulling at the tube. Refer to Policy: Restraint/Non Restraint. 7311-60-012; Restraint/Non Restraint Policy & PICU Policy: 901
- Sedate patient as required per physician’s orders.

3.2.9 Continuously monitor for air leak:
- Gurgling sounds
- Vocalization
- Loss of tidal volume (if ventilated)

3.2.10 Monitor ETT cuff / pressure - RRT scope of practice. See Policy: Monitoring of Tracheal Tube Cuff Pressure

3.2.11 Care of subglottic suction port on ETT - RRT scope of practice. See Policy Endotracheal tube Management – Continuous Subglottic Evacuation
- Ensure suction post is connected to suction tubing.
- Ensure suction regulator is set at 20 – 30mmHg
- Ensure suction regulator is labeled as ETT to prevent inadvertent change in set suction pressure

3.3 Document On Appropriate Record:

- Date and time on Ventilator Monitor Sheet and Nursing Flowsheet of the proper ETT level of insertion in “cm” (gums / teeth in adults, and upper lip in pediatrics) as landmark as well as “L”, “R”, or “M” to refer to left, right or mid-mouth pre and post adjustments.
- Assessment of respiratory status (i.e. rate, rhythm, presence of secretions, SpO2).
- Air entry before and after tube repositioning
- Condition of skin and mucosa including oral cavity.
- How the patient tolerated the procedure.
- If patient is suctioned, document amount, type and color of secretions and if any specimens obtained.
4. **REFERENCES:**


SHR Department of Respiratory Therapy Policy and Procedure: Endotracheal Tube Management - Continuous Subglottic Evacuation


**Securing Endotracheal Tubes**

**Adult**

**Method 1 - commercially available ETT holders** - see package directions,

**Method 2 - Adhesive Tape**

- **Preparing the tape**
  - Cut two strips of 1" tape; one approximately 90 cm and the other 30 cm long. Center the shorter strip on top of the longer strip, sticky sides together. This prevents hair at the nape of the neck from sticking to tape.
  - Fold sticky ends over and clip approximately 1 cm.
  - Optional - place tongue depressors on distal ends of tape and fold over.
  - NOTE: Tongue depressors serve as a guide as tape is passed behind patient’s neck.

- Clean the patient’s skin. Shave if necessary
- Apply skin prep or hydrocolloid membrane over skin where adhesive tape will be applied
- Secure with adhesive tape as shown
- NOTE: Nasotracheal tubes can be secured using the same procedure as orotracheal tubes but increases length to 90 cm adhesive tape to 105 cm.

![Step 1](image1.png)
![Step 2](image2.png)
![Step 3](image3.png)
![Step 4](image4.png)
- **Method 3 – Twill Tape:**
  - Twill tapes may be used if the patient is allergic to adhesive tape, has a beard or has facial burns.
  - Tie a reef knot or a clove hitch knot and place around the ETT. Avoid securing pilot balloon to ETT.
  - Tie tape around patient’s head and neck and secure with a square knot around the side.
  - The tape should hold the ETT securely without putting pressure on the skin (i.e. should be able to easily place one finger between ties and skin).
  - If facial swelling increases, the tape needs to be re-secured.

### Lark’s Head Knot Method

1. **Step 1**
2. **Step 2**
3. **Step 3**
4. **Step 4**
   - Tie Securely
Clove hitch method

**Step 1**

**Step 2**

**Step 3**

**Step 4**

**Tie Securely**

Optional:
Tie an extra knot prior to securing around patient’s neck
Securing Endotracheal Tubes:
- Consider extra sedation if required
- Check tube position at lip and on x-ray.
- Hold tube securely. PICU: hold from the head of the bed position. Heel of hand should rest on patient's forehead for nasal tubes. For oral tubes, grasp tube firmly with gauze and stabilize against roof of mouth.
- Cleanse cheeks.
- Apply Compound Tincture Benzoin under nose and along the cheeks.
- Apply mustache tape to upper lip.
  - Cut strip width from tape according to the size of the upper lip of the child.
  - 1st mustache tape

- Cut two strips of Elastoplast tape (width and length will depend on the size of the child) and cut down the middle of half of the tape.

- Tape left or right side of the tube by putting upper strip of tape from cheek to cheek under nose.
  Use lower tape to secure tube, wrapping around 2-3 times and securing on the same side.
- Reverse order if nasally intubated.
- Apply second strip of tape the same way but the opposite side.
- Secure tapes with another mustache tape.

- Auscultate air entry.
- Tape left or right side of the tube by putting upper strip of tape from cheek to cheek under nose.
  Use lower tape to secure tube, wrapping around twice and securing on the same side.
- Reverse order if nasally intubated.
- Apply second strip of tape the same way but begin with the opposite cheek.
- Secure tapes with another mustache tape.
- Auscultate air entry.