# Double Lumen Airway Protocol Using Esophageal Tracheal Combitube

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## Preamble

There are situations where the airway must be secured but the EMS provider does not possess the skills for direct visualization and intubation of the airway. In carefully selected situations, the double-lumen airway offers an alternative to secure an airway and provide ventilation and / or oxygenation.

## Requirements

1. Fully licensed Technician-Paramedic.
2. Certification in the double lumen airway protocol using esophageal tracheal combitube by the Medical Director.

## Indications

1. Unconscious patient, with no gag reflex, requiring assisted ventilation.

## Patient Requirements

1. Height of between 48 inches / 125 cm and 66 inches / 165 cm for SA 37 french size ETC.
2. Height greater than 60 inches / 150 cm for SA 41 french size ETC.

## Contraindications

1. Conscious patient.
2. Patient with intact gag reflex.
3. Patient with known esophageal disease.
4. Known or suspected ingestion of a caustic substance.

**Procedure**

1. Perform patient assessment and record vital signs, level of consciousness, and oxygen saturation.

2. Assess that patient meets criteria for this protocol.

3. Ensure there are no contraindications to use of this protocol.

4. Initiate basic life support treatment measures, including supplemental oxygen.
    - these take precedence over management using this protocol

5. Ensure cervical spine immobilization is in place, if indicated.

6. Preoxygenate and ventilate with 100% $O_2$ using bag-valve mask.

7. Select appropriate tube based on patient height.

8. Remove any dentures or partial plates.

9. Check integrity of esophageal tracheal combitube (ETC) balloons.

10. Grasp the tongue and mandible between your thumb and index fingers. Lift straight upwards.

11. Lift the patient's tongue and lower jaw upward with one hand.

12. Using the other hand, hold the ETC so that it curves in the same direction as the natural curvature of the pharynx. Insert the ETC tip into the centre of the patient's mouth and advance gently until the printed ring is aligned with the teeth (or alveolar ridge in an edentulous patent).

13. If the tube does not advance, redirect it or withdraw and start over. **Do not use force.**

14. Inflate the white pilot balloon leading to the distal cuff with air using the 20 ml syringe as follows:
    - inflate with 12 ml for 37 french size ETC
    - inflate with 15 ml for 41 french ETC

**note:** in order to prevent potential harm to the esophagus, do not use greater volumes when inflating the pilot balloon
Caution must be taken to ensure that the tube does not move after inflation of the distal cuff prior to inflation of the proximal cuff

15. Inflate the blue pilot balloon leading the pharyngeal cuff with air using the 140 ml syringe as follows:
    - inflate with 85 ml for 37 french size ETC
    - inflate with 100 ml for 41 french size ETC

16. Begin ventilation using the longer blue connecting tube (No. 1).

17. Confirm tube placement following accepted procedure. If appropriate breath sounds are auscultated and there is no evidence of gastric insufflation, continue ventilation.

18. If no breath sounds are auscultated and there is evidence of gastric insufflation, begin ventilation through the shorter clear connecting tube (No. 2).

19. Confirm tube placement following accepted procedure.

20. If patient regains consciousness and does not appear to be tolerating the tube (e.g. struggling, gagging), intravenous sedation (if certified to do so) should be administered.

21. If sedation is unavailable or ineffective, the following procedure should be performed:
    - Balloon deflation and removal procedure:
        a) have suction ready – suction oropharynx
        b) deflate blue pilot balloon
        c) If patient tolerates tube after deflation of blue pilot balloon, leave in place and continue transport
        d) If patient still is not tolerating tube after deflation of blue pilot balloon, deflate white pilot balloon and remove ETC

22. Initiate transport, unless other emergency condition required immediate treatment.

Note: Each attempt at ETC placement should be limited to thirty (30) seconds, with adequate oxygenation and ventilation between attempts. A maximum of two (2) attempts at ETC placement is permitted. Insertion of ETC should be discontinued if resistance is felt.

## Charting & Documentation

The following information must be charted on the patient care report form:

1. Patient's presenting signs and symptoms, including vital signs, oxygen saturation, and level of consciousness.

2. Indications for protocol use.

3. Size of ETC used and which connecting tube used to ventilate.

4. Documentation of verification of ETC placement.

5. Number of attempts at ETC placement.

6. Repeat assessment and vital signs, as indicated.

7. Changes from baseline, if any, that occur during transport.

8. Signature and license number of EMS personnel performing any transfer of function skills.

## Certification

1. Attend in-depth lectures on airway anatomy, physiology, advanced airway management including use of the esophageal tracheal combitube.

2. Demonstrate an understanding of the indications, contraindications and possible complications related to the use of the esophageal tracheal combitube.

3. Be able to demonstrate, in a lab setting, the proper technique and use of the esophageal tracheal combitube.

4. Pass a written examination.

5. Pass practical scenarios incorporating variations of the double lumen airway protocol using the esophageal tracheal combitube.

6. Certification is by the Medical Director.

## Recertification

1. Review class and recertification is done every 12 months.

2. A record will be kept to document all cases where this protocol is used.

## Decertification

1. Decertification is at the discretion of the Medical Director or the Provincial Medical Director, Emergency Medical Services, Manitoba Health & Healthy Living.

## Quality Assurance

1. Appropriate quality assurance policies must be in place. The Medical Director or designate must review all instances where this protocol is used. As a minimum, the following must be assessed:
    - i) appropriateness of implementation
    - ii) adherence to protocol
    - iii) any deviation from the protocol
    - iv) corrective measures taken, if required or indicated

2. Yearly statistics must be compiled and forwarded to Emergency Medical Services, Manitoba Health & Healthy Living.