

# "Tracheostomy Care Made Simple: A Nurse's Definitive Protocol"

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## Abstract

Tracheostomy care is a critical nursing skill, essential for maintaining airway patency, preventing infections, and ensuring patient safety in both acute and long-term settings. This comprehensive guide outlines evidence-based practices for tracheostomy management, including step-by-step procedures for tube cleaning, stoma care, dressing changes, and complication monitoring. Designed for nursing professionals, tutors, and students, the article emphasizes sterile techniques, patient assessment, and troubleshooting common issues such as tube obstruction and infection. By integrating current guidelines and best practices, this resource serves as a practical reference for optimizing tracheostomy care in diverse healthcare environments.

## Background

Tracheostomy, a surgical opening in the anterior trachea, is performed to secure an airway in patients with upper respiratory obstructions, prolonged mechanical ventilation needs, or impaired secretion clearance. While lifesaving, tracheostomies carry risks of complications, including infection (e.g., cellulitis, tracheitis), tube dislodgement, and granulation tissue formation. Effective tracheostomy care is paramount to mitigate these risks and promote patient recovery.

Nurses play a pivotal role in tracheostomy management, requiring proficiency in sterile techniques, suctioning, and routine tube maintenance. Despite standardized protocols, variations in practice persist, particularly in cuff pressure monitoring, dressing changes, and emergency response. Studies indicate that up to **30% of tracheostomy-related complications** stem from inadequate care, underscoring the need for continuous education (Morris et al., 2021; National Tracheostomy Safety Project, 2022).

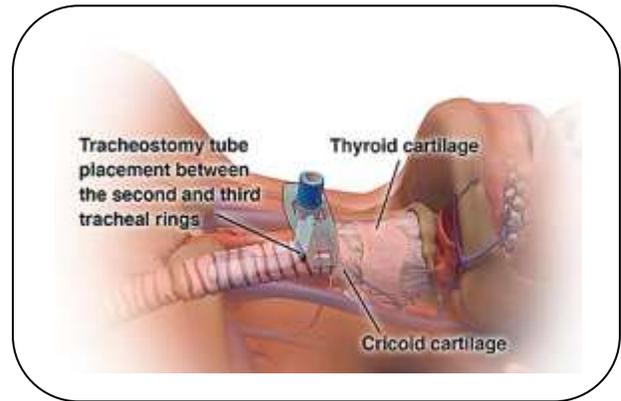
## Introduction

A tracheostomy is a surgical opening in the anterior trachea to establish an airway. Depending on the patient's condition, it may be temporary or permanent. Proper tracheostomy care is essential to prevent complications such as infection, skin breakdown, and airway obstruction. Routine cleaning of the stoma site and tracheostomy tube helps maintain airway patency and reduces the risk of infections.

## Definition

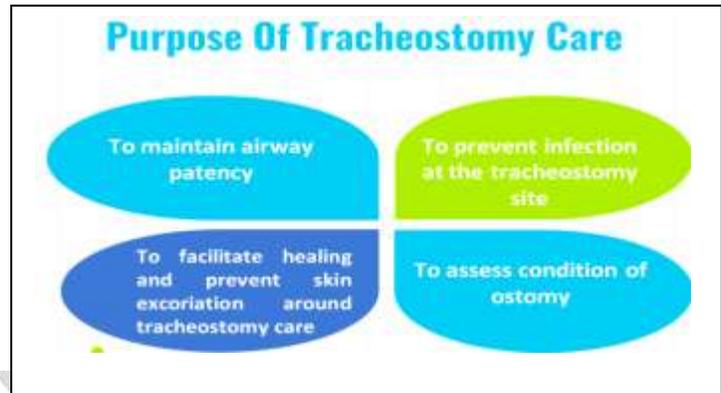
Tracheostomy care involves:

- Cleaning or replacing the inner cannula
- Cleaning the stoma site
- Changing the dressing around the tracheostomy
- Ensuring secure tube placement



## Purpose of Tracheostomy Care

1. Maintain airway patency
2. Prevent infection at the stoma site
3. Promote skin integrity
4. Ensure proper tube function
5. Monitor for complications



## Indications for Tracheostomy Insertion

- ✓ Upper airway obstruction (e.g., tumors, trauma, edema)
- ✓ Prolonged mechanical ventilation
- ✓ Inability to clear secretions
- ✓ Airway protection post-head/neck surgery
- ✓ Chronic respiratory conditions (e.g., COPD, neuromuscular disorders)

## Types of Tracheostomy Tubes

- **Single-Lumen Tube-** Tracheostomy tube with one outer tube. More intensive nursing care is requiring ensuring a patent lumen.



- **Double-Lumen Tube**

Consists of an inner and an outer snugly together. (Outer cannula – keep the airway open and inner cannula – act as removable liner to facilitate cleaning of impact.



- **Fenestrated Tube**

Tube has a precut opening (fenestration) in the upper posterior wall of the outer cannula and help in phonation

Tube used to wean the client from tracheostomy by ensuring that the client can tolerate the breathing through his or her natural airway before entire tube is removed.



- **Metal Tube**

Need permanent tracheostomy. Thinner walls which may make breathing easier.



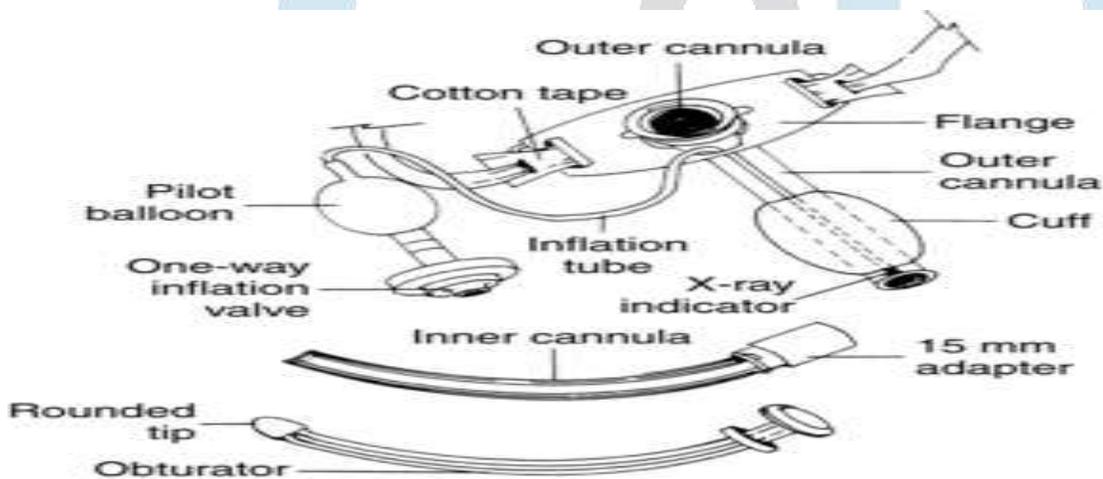
- **Uncuffed Tube**

Tube with no cuff/balloon. It protects airway but requires clearance of secretions and airway maintenance.



### Parts of a Tracheostomy Tube

- **Outer Cannula** –(with cuff, neck flange, inflation line)
- **Inner Cannula** (removable for cleaning)
- **Obturator** (guides insertion)



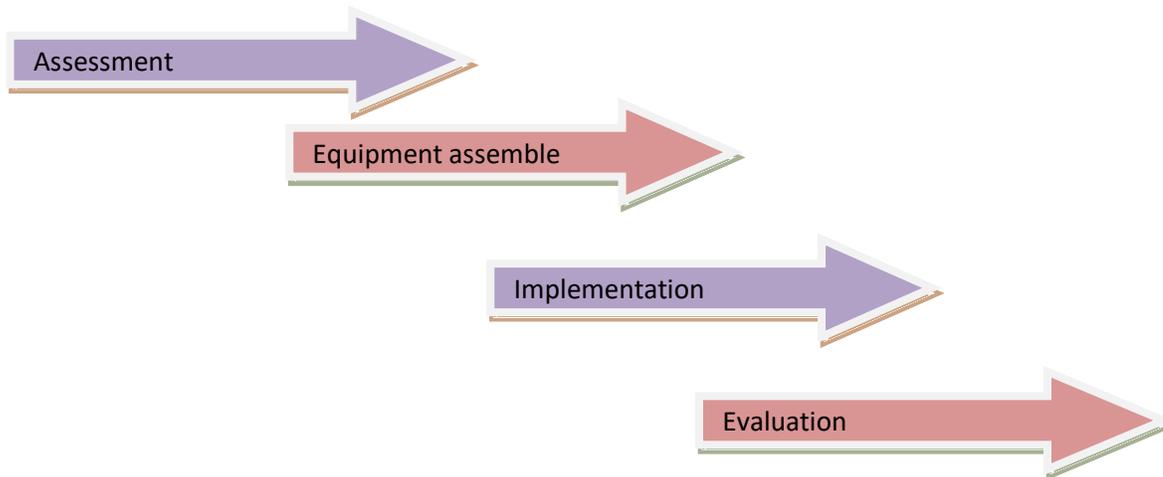
### **\*\*\* Special Considerations before Tracheostomy Care**

- ✓ Change dressing and ties **every 24 hours** or when soiled.
- ✓ Maintain **cuff pressure (15-25 cm H<sub>2</sub>O)** to prevent tissue damage.
- ✓ Use **infection control measures** (hand hygiene, sterile technique).
- ✓ Ensure **two fingers fit under ties** to avoid excessive tightness.
- ✓ Monitor for **infection signs**:
  - *Foul odor, excessive secretions*
  - *Redness, swelling, or erosion at the stoma*



*Early detection of infection will help in maintain the skin integrity of skin and thus preventing infection*

## Procedure for Tracheostomy Care



### 1. Patient Assessment

- ✓ Check **respiratory status** (breath sounds, oxygen saturation).
- ✓ Assess for swallowing reflex and gag reflex
- ✓ Assess **secretions** (color, consistency, amount).
- ✓ Inspect **stoma site** (redness, swelling, discharge).
- ✓ Assess Neck for subcutaneous emphysema as manifested by crepitus around the ostomy site; indicates air leak into subcutaneous tissue
- ✓ Laboratory value-WBC and blood culture
- ✓ Patient's ability to understand the spoken word
- ✓ Patient's ability to express

### 2. Equipment Preparation

Articles	Purpose
<ul style="list-style-type: none"> <li>• A sterile tray containing</li> <li>• Artery forceps</li> <li>• Thumb forceps</li> </ul>	<ul style="list-style-type: none"> <li>• To hold the cotton, gauze</li> <li>• To hold the gauze</li> </ul>
<ul style="list-style-type: none"> <li>• Dressing cup</li> </ul>	<ul style="list-style-type: none"> <li>• To pour the solution and to keep sterile cotton, gauze</li> </ul>
<ul style="list-style-type: none"> <li>• Sterile towel</li> </ul>	<ul style="list-style-type: none"> <li>• To wipe the hands</li> </ul>
<ul style="list-style-type: none"> <li>• Sterile gauze pad, cotton balls, and gauze pieces</li> </ul>	<ul style="list-style-type: none"> <li>• To clean the tracheostomy site</li> </ul>
<ul style="list-style-type: none"> <li>• A clean tray containing Solution: Hydrogen peroxide, normal saline, povidone-iodine</li> </ul>	<ul style="list-style-type: none"> <li>• To clean the site and to soak the inner cannula.</li> <li>• It has an antiseptic effect</li> </ul>

• Tracheostomy tie tape	• To secure the device •
• Sterile gloves ,Mask	• To prevent cross-infection
• Sterile suction catheter	• To apply suction before tracheotomy cleaning
• Ambu bag	• To hyperoxygenate the lungs during suctioning
• Suction apparatus	• To apply suction
• Tube brush/pipe cleaner	• To clean the inner cannula if needed
• Kidney tray	• To discard the swabs

### 3. Steps for Tracheostomy Care

1. Assess the condition of the patient & assemble all the articles near bedside
2. Explain the procedure & Wash hands.
3. Assist the patient to sit in Fowler's position and place the sterile towel around the chest
4. Wash hands thoroughly
5. Put on face mask and sterile gloves
6. Open the sterile tray; pour hydrogen peroxide and sterile normal saline in separate bowl
7. Apply suction to the trachea and the pharynx thoroughly before tracheostomy care
8. Applicable for tubes with inner cannula and outer cannula: Unlock the inner cannula and remove (if present) by gently pulling it out and place the inner cannula in the bowl containing 3% hydrogen peroxide and clean it using pipe cleaners/tube brush solution
9. Remove the soiled tracheostomy dressing
10. Discard the gloves
11. Wear sterile gloves
12. Clean the stoma and surrounding area (center to periphery) with gauze using povidone-iodine or hydrogen peroxide mixed with normal saline. Use each gauze piece for each stroke
13. Dry the stoma with the dry sterile gauze. If the stoma is infected, apply antibiotic ointment (povidone-iodine) as per physician's order
14. Method of cleaning the inner cannula
  - ❖ Remove the inner cannula from the hydrogen peroxide solution
  - ❖ Clean inside and outside of the inner cannula using the brush
  - ❖ Rinse the inner cannula with normal saline

❖ Remove from normal saline and shake it to dry or use gauze piece to dry the cannula

15. Open the gauze & refold it thereby giving a cut in the middle in V shape & place it under the flange of TT.

16. Change the tracheostomy tie tapes

17. Tie the new tube ties first before removing the previous one

18. Assess the condition of the stoma after removing the previous tube ties.

19. The tape ties should be 2 fingers loose enough to permit circulation & tight enough to secure the TT.

20. Place a gauze pad between the stoma site of the tracheostomy tube

21. Clean the fresh stoma every 8 hours or more frequently indicated by accumulation of secretions

22. Terminate all the articles properly.

23. Wash hands and document the care given in the Nurses Assessment & Care Note

### Complications to Monitor

- Tube dislodgement/obstruction
- Infection (cellulitis, tracheitis)
- Bleeding or granulation tissue
- Subcutaneous emphysema

### Conclusion

Proper tracheostomy care is vital for patient safety and recovery. Nurses must follow **sterile techniques**, monitor for complications, and educate patients/caregivers on home care.

### Checklist for TT care

Sl. No.	Procedure	Y	N
1.	Assesses the condition of the patient and communicates the procedure		
2.	Assembles all the articles and performs hand hygiene		
3.	Performs suction if required		
4.	Positions the patient and wears gloves		
5.	Removes the previous dressing and assesses the stoma		
6.	Cleans the stoma and places new dressings		
7.	Ties the tube and removes the old ties		
8.	Assesses the need of changing the tube and communicates to the treating doctor		
9.	Makes the patient comfortable and discards the waste		
10.	Performs hand hygiene and required documentation		

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