

Skills

Endotracheal Tube and Tracheostomy Tube Suctioning - CE/NCPD

Quick Sheet

ALERT

Suction the patient's artificial airway only as clinically indicated and not as a routine, fixed-schedule treatment. Limit each pass to less than 15 seconds.

If the patient develops respiratory distress or cardiac decompensation during the suctioning procedure, immediately withdraw the catheter and supply additional oxygen as needed.

Suctioning can cause elevations in intracranial pressure (ICP) in patients with head injuries.

1. Perform hand hygiene before patient contact. Don appropriate PPE based on the patient's need for isolation precautions or the risk of exposure to bodily fluids.
2. Introduce yourself to the patient.
3. Verify the correct patient using two identifiers.
4. Assess the patient for signs of airway compromise or inadequate oxygenation.
 - a. Thick secretions in the airway that cannot be cleared with coughing
 - b. Decreased or absent breath sounds
 - c. Adventitious lung sounds (e.g., wheezes, rhonchi, crackles)
 - d. Restlessness or decreased level of consciousness
 - e. Acute respiratory distress
 - f. Tachypnea
 - g. Tachycardia or bradycardia
 - h. Cyanosis or pallor
 - i. Hypertension or hypotension
 - j. Shallow respirations
 - k. Use of accessory muscles
 - l. Decreased oxygen saturation
 - m. Increased peak airway pressure
 - n. Sawtooth pattern on the flow-volume loop on the ventilator monitor
5. Provide reassurance and support to the patient to demonstrate an understanding of the patient's dependence and vulnerability.
6. Assist the patient to a comfortable position, generally a semi-Fowler or Fowler position.
7. Prepare a work area in a clean, accessible location and assemble the necessary supplies.
8. Determine the appropriate depth to advance the suction catheter.
9. Identify the proper size of suction catheter to use by first multiplying the tube's inner diameter by 2 and then selecting the next smallest size catheter.

Suctioning with an Inline Suction Catheter

1. Perform hand hygiene and don gloves. Don additional PPE based on the patient's need for isolation precautions or the risk of exposure to bodily fluids.
2. Verify the correct patient using two identifiers.
3. Explain the procedure and ensure that the patient agrees to treatment.
4. Verify that the suction apparatus is on.
5. Unlock the suction control valve (thumb valve), depress the valve completely, and adjust the vacuum regulator so that the suction pressure is less than 150 mm Hg. **Use only the amount of suction necessary to remove secretions effectively. High negative-pressure settings may increase tracheal mucosal damage.**
6. Release the suction control valve.
7. Consider administering 100% oxygen via the ventilator for 30 to 60 seconds before suctioning. **Administer 100% oxygen to prevent a decrease in oxygen saturation during the suctioning procedure. Leave the patient connected to the ventilator throughout the suctioning procedure.**

8. Pause the ventilator alarm and the monitoring alarms as needed.
9. Using the nondominant thumb and forefinger, stabilize the patient's artificial airway and ventilator tubing.
10. With the dominant hand, gently but quickly insert the catheter into the artificial airway without depressing the suction control valve (the suction is off).
 - a. In patients at high risk for suction-related complications, insert the catheter into the artificial airway until it just passes the end of the airway.
 - b. In patients not at risk for suction-related complications, insert the catheter into the artificial airway until resistance is met and then pull it back 1 to 2 cm.
11. Using the dominant thumb, depress the suction control valve to apply continuous suction while withdrawing the catheter into the sterile catheter sleeve within 15 seconds. Using the nondominant thumb and forefinger, stabilize the airway while withdrawing the catheter. **Ensure that each suction pass lasts less than 15 seconds to minimize decreases in oxygen saturation. Do not instill 0.9% sodium chloride solution before suctioning.**
12. Stop the withdrawal when the black marker ring on the catheter appears inside the sleeve. Release the suction control valve.
13. Perform an additional pass of the suction catheter if secretions remain in the airway and the patient is tolerating the procedure. Multiple suctioning passes may be needed to clear secretions. **Do not exceed four passes per suctioning procedure to minimize oxygen desaturation and cardiopulmonary complications. Allow adequate time between passes for the patient to recover before the next pass.**
14. Consider administering 100% oxygen for at least 60 seconds after suctioning.
15. Monitor the patient for adverse reactions.
16. Rinse the catheter and connecting tubing with a sterile 0.9% sodium chloride solution.
 - a. Verify that the black marker ring on the catheter is visible in the sleeve.
 - b. Open the cap on the irrigation port.
 - c. Attach a tube of sterile 0.9% sodium chloride solution (i.e., saline bullet, saline aliquot) to the irrigation port.
 - d. Depress the suction control valve and gently squeeze the tube of solution. **Do not instill the solution down the endotracheal (ET) tube.**
 - e. Continue to irrigate until the catheter and tubing are clear.
17. Lock the suction control valve.
18. Verify that the fraction of inspired oxygen (FIO₂) is returned to the previous level.
19. Enable the ventilator alarm and the monitoring alarms as needed.
20. Assess the volume, consistency, and color of the airway secretions. **Notify the practitioner of changes in the airway secretions, which could be a sign that the patient is developing pneumonia or other adverse effects.**
21. Discard supplies, remove PPE, and perform hand hygiene.
22. Document the procedure in the patient's record.

Suctioning with a Flexible Suction Catheter

1. Perform hand hygiene. Don appropriate PPE based on the patient's need for isolation precautions or the risk of exposure to bodily fluids.
2. Verify the correct patient using two identifiers.
3. Explain the procedure and ensure that the patient agrees to treatment.
4. Turn the suction apparatus on.
5. Adjust the vacuum regulator so that the suction pressure is less than 150 mm Hg. **Use only the amount of suction necessary to remove secretions effectively. High negative-pressure settings may increase tracheal mucosal damage.**
6. Using aseptic technique, open the flexible catheter package on a clean surface, using the inside of the wrapping as a sterile field; open the package just enough to expose the connecting end.
7. Pour a sterile 0.9% sodium chloride solution or sterile water into a sterile container.
8. Pause the ventilator alarm and the monitoring alarms as needed.
9. Perform hand hygiene and don sterile gloves.
10. With the dominant hand, pick up the suction catheter, taking care to avoid touching any nonsterile surfaces. With the nondominant hand, pick up the connecting tubing. Connect the suction catheter to the connecting tubing. **Ensure that the dominant hand does not come in contact with the connecting tubing. Wrap the suction catheter around the sterile dominant hand to help prevent inadvertent contamination of the catheter.**
11. Consider administering 100% oxygen for 30 to 60 seconds before suctioning via the ventilator. **Administer 100% oxygen before suctioning to prevent a decrease in oxygen saturation during the suctioning procedure.**
12. With the nondominant hand, open the access port (swivel adaptor) on the ventilator tubing to allow for passage of the catheter into the artificial airway. **Leave the patient connected to the ventilator throughout the suctioning procedure.**
13. With the dominant hand, gently but quickly insert the catheter into the artificial airway with the control vent of the suction catheter open.
 - a. In patients at high risk for suction-related complications, insert the catheter into the artificial airway and advance it to the distal end of the ET (shallow suctioning).

- b. In patients not at risk for suction-related complications, insert the catheter into the artificial airway until resistance is met and then pull it back 1 to 2 cm (deep suctioning). **Ensure that each suction pass lasts less than 15 seconds to minimize decreases in oxygen saturation. Do not instill a 0.9% sodium chloride solution routinely before suctioning.**
14. Using the nondominant thumb, occlude the control vent of the suction catheter to apply continuous suction while completely withdrawing the catheter within 10 to 15 seconds.
 15. Perform an additional pass of the suction catheter if secretions remain in the airway and the patient is tolerating the procedure. Multiple suctioning passes may be needed to clear secretions. **Do not exceed four passes per suctioning procedure to minimize oxygen desaturation and cardiopulmonary complications. Allow adequate time between passes for the patient to recover before the next pass.**
 16. Consider administering 100% oxygen for at least 60 seconds after suctioning.
 17. Monitor the patient for adverse reactions.
 18. Insert the end of the catheter into the container of sterile 0.9% sodium chloride solution or sterile water and suction up the solution until the suction connecting tubing is clear.
 19. Wrap the catheter around the dominant hand after the upper airway suctioning is complete. Pull the glove off inside out; the catheter remains in the glove. Pull the other glove off in the same manner and discard.
 20. Turn the suction device off.
 21. Enable the ventilator alarm and the monitoring alarms as needed.
 22. Verify that the FIO₂ is returned to the previous level.
 23. Assess the volume, consistency, and color of the airway secretions. **Notify the practitioner of changes in the airway secretions, which could be a sign that the patient is developing pneumonia or adverse effects.**
 24. Discard supplies, remove PPE, and perform hand hygiene.
 25. Document the procedure in the patient's record.

Adapted from Johnson, K.L. (Ed.). (2024). *AACN procedure manual for progressive and critical care* (8th ed.). St. Louis: Elsevier.