

PRONING USING AIR-ASSISTED DEVICE

SOP 4.4

Western North Carolina VA Health Care
System
Asheville, NC 28805

Service Line(s):
Nursing and Respiratory

Signatory Authority:
ADPCS/Chief Nurse Executive

Effective Date:
March 30, 2020

Manager, Respiratory Care Services
and Sleep Disorder Center

Recertification Date:
March 31, 2025

Responsible Owner:
Safe Patient Handling & Mobility
Coordinator/Nursing Quality Manager

1. PURPOSE AND AUTHORITY

a. The purpose of this standard operating procedure (SOP) is to establish procedures and routine care for safely proning patients using air assisted devices. This SOP must be followed by nursing service and respiratory service employees who care for patients with acute respiratory distress syndrome.

b. There is no governing document.

2. PROCEDURES

a. Pre-procedure

(1) Obtain order for proning that includes time frame for pronation/supination, discontinuation criteria including when to discontinue for both improvement and decline.

(2) Obtain clarification for tube feedings while in prone position.

(3) If patient does not have oral gastric or nasogastric tube, consider placing prior to proning.

(4) Consult with Wound Ostomy Nurse for skin protection guidance.

(5) Consider consultation with operating room nurses for positioning guidance.

(6) Assemble

(a) Five to Six team members (one to two must be Respiratory Therapists (RT) and one to two must be Registered Nurses (RNs)).

(b) Two single patient use air-assisted matts

- (c) Air supply
- (d) Absorbent pads
- (e) Face pillow (if available)
- (f) Electrodes
- (g) Pillows or gel rolls (from OR)
- (h) Eye and skin protectants
- (7) Obtain baseline vital signs and hemodynamic measurements.
- (8) Perform and document physical assessment paying attention to skin condition.
- (9) Obtain any ordered baseline lab samples for evaluation of effectiveness of prone position.
- (10) Remove head and foot boards.
- (11) Team review procedure and process for communicating.
- (12) Use maximum inflate on bed mattress with any turning.

b. Proning Process

- (1) Provide analgesia, sedation and neuromuscular blockade (if not ordered, consider obtaining order).
- (2) RT secure airway.
- (3) Perform skin protection interventions per Wound Ostomy Nurse.
- (4) If neuromuscular blockade used, apply ordered eye lubrication, maintain eyes closed using “kind removal” tape and secure arms to patient sides.
- (5) Max inflate bed mattress.
- (6) Place one matt under patient if not already present (use friction reducing slide tubes to place).
- (7) Secure tubes/lines/drains noting positions for reference and document.
- (8) Disconnect/cap any non-vital tubes/lines/drains, including arterial line and ETCO2.
- (9) Remove ECG leads/stickers from front of patient. Keep SpO2 monitor on during procedure.

(10) Place absorbent pads (as many as needed to protect matt), any pillows/gel rolls for off-loading areas at risk for pressure injury and second matt on top of patient (slick side up).

(11) Align matt on sender side (side opposite ventilator) along patient's shoulder/hip line not even with matt beneath patient.

(12) Clip two matts together and tighten straps as tight as possible tucking extra strap between matts.

(13) Velcro matts together (at hose connections) after securing air supply hose to bottom matt on sender side.

(14) Two staff on sending side (opposite ventilator), grasp bottom matt only (palms up help with shorter staff).

(15) Two staff on receiving side (ventilator side) grasp both matts together.

(16) RT verifies airway secure and instructs staff near air supply to begin inflation.

(17) After matt fully inflated, position patient toward sending side. Senders then begin lifting matt/patient and pushing toward receivers.

(18) Simultaneously, receivers push down on matt to push air toward sending side and push forward to aid in moving patient toward receiving side and prone position. *Patient's weight will create momentum. Allow this momentum to help with pronation.

(19) Once prone, turn air supply off, unfasten matts, remove top matt/pads and use bottom matt to position patient in bed.

c. Post-proning

(1) Place ECG pads/leads on back.

(2) Reconnect/restart all disconnected/capped non-vital tubes/lines/drains. Double check patency/function.

(3) Position arms in neutral position.

(4) If using proning face pillow, ensure eyes are clear of the pillow. If no prone pillow used, position head either left or right with regular pillow/pad.

(5) Ensure skin protection measures remain in place.

(6) Assess patient for hyperextension of neck/joints and re-position if needed.

(7) Assess to ensure bony prominences/areas with potential for pressure injury are appropriately padded.

(8) Obtain vital signs, perform physical assessment and document.

(9) Reposition head, arms and legs frequently (at least every 2 hours) to reduce pressure.

(10) May use pillows or bed function to tilt one side at a time throughout proning time.

d. Supination Process

(1) Maximum inflate bed mattress.

(2) Secure arms to patient sides.

(3) RT secure airway.

(4) Secure tubes/lines/drains noting positions for reference and document.

(5) Disconnect/cap any non-vital tubes/lines/drains, including arterial line and ETCO2.

(6) RT position patient's head so that face is facing ventilator before supination.

(7) Remove ECG leads/stickers from back of patient. Keep SpO2 monitor on during procedure.

(8) Place pads and matt on top of patient (slick side up).

(9) Align matt on sender side (ventilator side) along patient's shoulder/hip line not even with matt beneath patient.

(10) Clip two matts together and tighten straps as tight as possible tucking extra strap between matts.

(11) Velcro matts together (at hose connections) after securing air supply hose to bottom matt on sender side.

(12) Two staff on sending side (ventilator side), grasp bottom matt only.

(13) Two staff on receiving side (opposite ventilator side) grasp both matts together.

(14) RT verifies airway secure and instructs staff near air supply to begin inflation.

(15) After matt fully inflated, position patient toward sending side. Senders then begin lifting matt/patient and pushing toward receivers.

(16) Simultaneously, receivers push down on matt to push air toward sending side and push forward to aid in moving patient toward receiving side and supine position.

*Patient's weight will create momentum. Allow this momentum to help with supination.

(17) Once supine, turn air supply off, unfasten matts, remove top matt/pads and use bottom matt to position patient in bed.

e. Post-supination

(1) Place ECG pads/leads on front.

(2) Reconnect/restart all disconnected/capped non-vital tubes/lines/drains. Double check patency/function.

(3) Position ensuring bony prominences/areas with potential for pressure injury are appropriately padded.

(4) Obtain vital signs, perform physical assessment and document.

(5) Reposition as usual.

f. Important Considerations

(1) If droplet/airborne precautions/isolation, wear appropriate Personal Protective Equipment (PPE) to include eye protection and once air supply used in room with precautions, only use air supply in those rooms. Do not use an air supply that has been used in an isolation room in a non-isolation room. Once the air supply is no longer needed in the isolation room, red bag it and contact the facility Safe Patient Handling and Mobility Coordinator for instructions.

(2) May choose to use a single matt and sheet rather than two matts if there is concern for the matt that stays beneath patient causing the patient to become too hot/have increased sweating. If this is selected, the following should be followed when turning

(a) Place matt beneath patient if not already present using friction reducing slide tubes to place.

(b) Place absorbent pads and flat sheet on top of patient. Secure arms and tuck sheet under each side of patient

(c) Two senders (side opposite ventilator) grasp matt as above. Two receivers (ventilator side) grasp bottom matt as above. Follow steps above to prone (inflate matt on sender side, move patient toward senders, senders lift and turn patient as receivers push down and forward on matt).

(d) When ready to turn supine, place matt beneath patient using friction reducing slide tubes.

(e) Place absorbent pads and flat sheet on top of patient. Secure arms. Tuck sheet under each side of patient.

(f) Two senders (ventilator side) follow sending steps and two receivers (opposite ventilator) follow receiver side steps.

(3) If available, consider the use of low air mattress to relieve pressure under the body and to help to ensure proper air circulation, helping to prevent, manage, and treat the occurrence of injuries related to pressure.

(4) For emergency situations, quickly return prone patient to supine.

g. Inclusion/Exclusion Guidelines (consult with ordering Provider)

(1) Inclusion

(a) New onset and severe ARDS.

(b) All the following

1. PaO₂/FiO₂ ratio < 150 mmHg

2. FiO₂ > 60%

3. PEEP > 5cm H₂O

(2) Exclusion

(a) Suspected increased ICP > 30mm Hg or CPP < 60mm Hg

(b) Unstable spine, femur, pelvis, rib fractures or other skeletal limitations

(c) Open chest or unstable chest wall

(d) Substantial facial trauma

(e) Substantial acute bleeding

(f) Wounds at risk of dehiscence

(g) Pregnancy

(h) Tracheal surgery or sternotomy

(i) IABP therapy, Ventricular assist device

(j) Goals of care incompatible with aggressive treatment plans

3. ASSIGNMENT OF RESPONSIBILITIES

a. **Respiratory Therapists** – Secure/manage airway, ensure emergency equipment is close by, communicate when to begin proning/supinating and reposition head at least every two hours.

b. **Registered Nurses** – Verify orders, obtain supplies, consult with wound care and RT, ensure pre-proning items collected/completed, perform assessments and document and reposition at least every two hours.

c. **Nursing Quality Manager** – Provide education and support for staff.

4. DEFINITIONS

a. None.

5. REFERENCES

a. Guidance For: Prone Positioning in Adult Critical Care. (2019, November). Intensive Care Society. London.

b. HoverMatt Proning Demo 1. Retrieved March 26, 2020. <https://www.youtube.com/watch?v=KvqtMPmGS0o&feature=youtu.be>

c. Prone Positioning Utilizing a Ceiling Lift. Nursing Procedure. (2019). VA Puget Sound Health Care System. Revision date July 2021.

d. Pronation Therapy. Elsevier Skills. Retrieved March 26, 2020. https://point-of-care.elsevierperformancemanager.com/skills/32/quick-sheet?skillId=CC_016

e. Wiegand, D.J. (2017). AACN Procedure manual for Critical Care, 7th ed. St. Louis, MO: Elsevier/Saunders.

6. REVIEW

Review at recertification, in the event national governance is received and any regulatory requirement for more frequent review.

7. RECERTIFICATION

This SOP is scheduled for recertification on or before the last working day of March, 2025. In the event of contradiction with national policy, the national policy supersedes and controls.

8. SIGNATORY AUTHORITY

David Przestrzelski, MS, RN
ADPCS/Chief Nurse Executive
Date Approved: March 30, 2020

Eric Cahill
Manager, Respiratory Care Services and Sleep Disorder Center
Date Approved: March 30, 2020

NOTE: *The signature remains valid until rescinded by an appropriate administrative action.*

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