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General Systems ICU

Prone Positioning

Purpose

- To improve respiratory function in patients refractory to conventional ventilation methods or PEEP
- The prone position can be ordered for patients with Acute Lung Injury / ARDS. It can be considered an adjunctive therapy to lung protective strategies, nitric oxide, recruitment maneuvers and high PEEP

Prior to proning, the physician and personnel must review risk / benefit and contraindications.

Contraindications:

Absolute

- Pregnancy in 3rd trimester
- Spinal injury
  - Incomplete and unstable
- Open abdomen – fascia **NOT** closed
- Seizure activity

Relative

- Weight greater than 140kg (300lbs) and abdominal girth greater than 125 cm (50 in)
- Fresh tracheostomy within last 24 hours
- Skeletal instability
    - Confirm with Neurosurgery if there are any questions regarding spinal stability
  - Recent pelvic or chest fractures
  - External fixator to femur or trunk
  - Very limited upper extremity range of abduction, flexion and /or external rotation
  - Advanced arthritis or spinal instability (osteoporosis)

The duration and frequency of prone positioning will vary from patient to patient based on tolerance and improvement of respiratory function.

- Staff must be prepared for sudden patient de-compensation and need to return to supine position
- Physician should be immediately available while patient in prone position

Personnel:

- Physician – must be at bedside during repositioning (if not actively participating in turn)
- RRTs – 1 to secure ETT/trach tubing at patient and 1 to manage ventilator tubing
- RN – 1 to manage lines
  - May require a second RN depending on number of lines / CRRT in progress
- RNs & additional staff – minimum 2 persons on each side of bed
  - Assess for need of additional personnel

The objective with building a ramp is to reduce strain on the patient's neck (should not have to fully turn head to side to prevent ETT kinks) and spine. The ramp keeps the spine straight and not bent backwards at the hip area.

Equipment:

- Fitted sheet
- Absorbent pad(s)
- Lifting sheet (flannel or reposition sheet)
- Pillows – assess number needed for under chest and torso (depending of size of patient), under lower legs and any extra support needed
- ECG electrodes
- Prone cushion – to be placed under head
  - This specialized cushion designed to allow access to and keep ETT unobstructed
  - Depending on size of patient, cushion under head may require extra lift to maintain head in position that does not overly flex or extend the neck

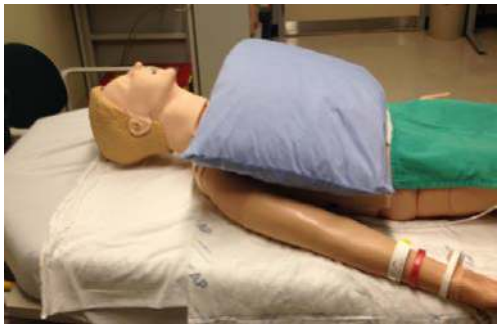
  - If a proning cushion is not available, pillows placed at an angle or gel pads can be used to lift head off bed.

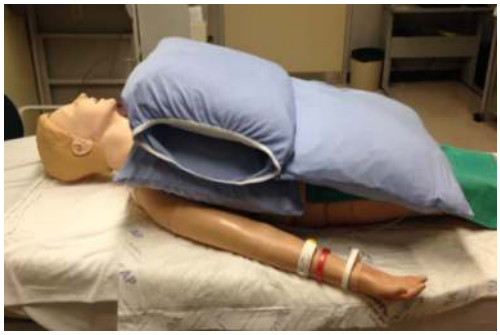
Prone Positioning Procedure

The procedure should be reviewed just prior to repositioning to ensure everyone is aware of their role, possible complications and emergency interventions. One leader instructing group is best.

- ❖ Ensure analgesic and sedation infusions are appropriate and if ordered, NMBA given prior to repositioning

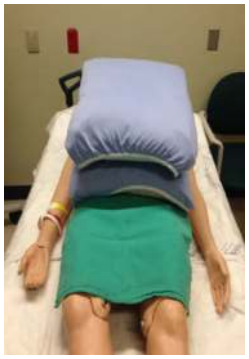
1. Explain procedure to family
2. Perform hand hygiene and don appropriate PPE
    - Maintain current isolation precautions
    - There is always the possibility of ETT disconnection from ventilator. Staff should be wearing mask and eye protection
3. Move lines, tubes and drains in preparation for turn / disconnect any non-essential lines
    - Tubes and lines above the waist, moved to HOB
        - ✓ Due to the direction of placement, chest tubes can be draped along the patient's side and the containers placed at the FOB
    - Tubes and lines below the waist moved to FOB
4. Lubricate patient's eyes and tape shut; complete oral and ETT suctioning
5. Assemble bedding linen so new linen will be in place when turn completed
    - Remove ECG electrodes from chest
    - Place pillow(s) on chest





If more than one pillow placed on the chest, a pillow must also be placed on torso to prevent undue stress on spine (think of it as if building a ramp.)

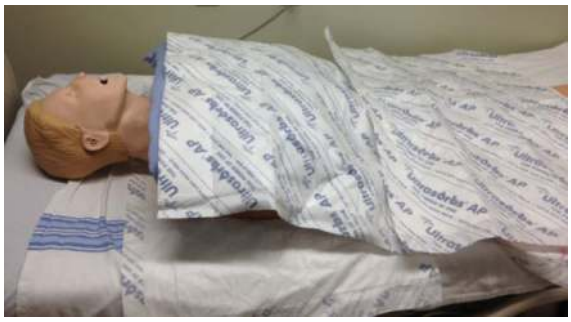
Placing the pillows across the chest works well for larger, wider patients.



Placing the pillow(s) length-wise may make it easier when turning the patient side to side while in prone position. Again, if 2 or more pillows placed on the chest there will need to be a pillow placed on torso to prevent undue stress on the spine

YES – patients are still turned every 2 hours while in prone position.

- Place absorbent pads (if using the Prevalon® turning sheet, use appropriate pad for system) on top of the pillows

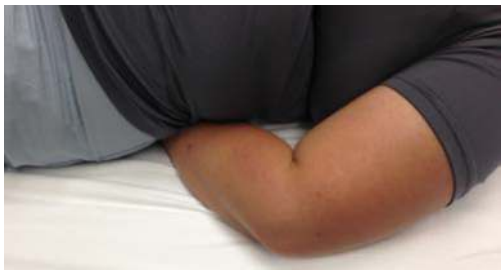


- Place lifting sheet (folded flannel or Prevalon ® turning sheet) on top of the absorbent pads

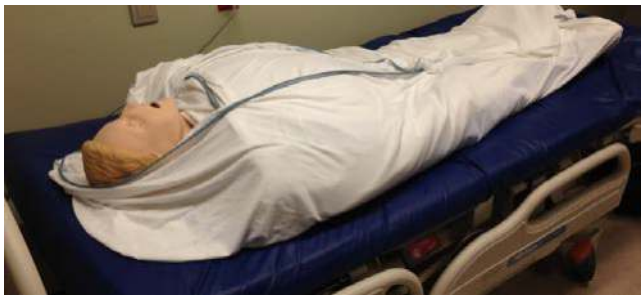
- Place fitted sheet on next. Ensure it is placed high enough that when turning complete, it will reach the top of the bed. Fold down to keep face and ETT visible

For consistency plan to turn TOWARD THE VENTILATOR the first time.
For safety, the patient head should be turned so that the ETT ALWAYS passes over (not under.) It should be visible at all times.

6. Tuck the arm (on same side as the ventilator) under the patient, palm side down. This will facilitate turn and reduce possible injury to arm as it passes under patient



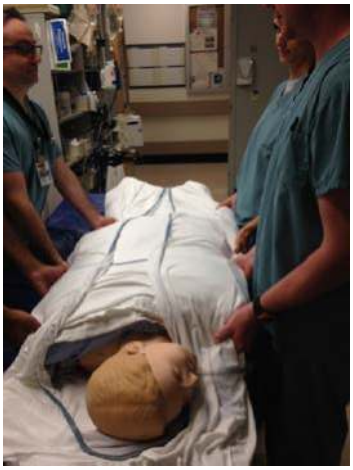
7. Tuck edges of new linen under patient (to keep them in place during turn)
8. Un-tuck the current linen and fold snugly over patient forming a cocoon



9. Turn patient head to face away from the ventilator. (RRT at HOB removed from picture to allow clear view of patient positioning))

Ventilator is on this side of bed.

The left side will go under during the turn.



By turning the head away from the ventilator, when the patient is turned, the ETT will come over the top.

It is easier to stabilize ETT, manage tubing and keep ETT visible throughout the turn.

10. RRT holding ETT to confirm everyone ready to move
    - The RRT coordinates moves on the count of 3.
    - Stop at any time there is concern over ETT or infusion lines.
11. Slide patient, (away from the ventilator) as far as safely possible to edge of bed
12. Turn patient up on to their side

When the patient up on their side, it may be necessary with a larger patient, to slide the patient further away from the ventilator. This will create enough room on the bed for the final turn to prone position.

The person at the chest level of the patient needs to place a hand on the pillows to make sure they stay in proper position.

13. Turn patient to prone position
14. Place proning cushion under head and adjust height as needed to ensure no airway obstruction and it is possible to perform mouth care and suctioning
    - If there are no proning cushions, place thin pillow at an angle under head to keep head up, ETT free of obstruction and allow access to mouth for oral care.
      - RRT should attempt to suction via ETT to ensure tube is not kinked
    - It may require some trouble-shooting, to manage head position and keep neck in neutral position
    - Ensure the least amount of pressure is created to face
15. Ensure infusion lines are not obstructed, positioned for easy access and any pressure lines are re-zeroed if needed and properly leveled
16. Place ECG electrodes on back (remember it will appear reversed to supine position) and connect the cables

17. Remove old linen and complete minor positioning to centre patient in bed / tuck in new linen
    - Check to ensure there are no hard tubing connections, stopcocks under patient
    - Simultaneously pull back on the lifting sheet from both sides to remove any wrinkles or folds under patient
18. Place patient arms in swimmer's position
    - Raise the arm on one side (face in direction of raised arm) and the other arm down with palm up
19. Place pillows under lower legs to keep toes up off bed
20. Bed can remain flat or slight Trendelenberg position to promote drainage.

Note – it is not unusual for patient SpO_2 to decrease initially. Draw an ABG and CvO_2 (as ordered) usually within the first 30 to 45 minutes to check the PaO_2 / FiO_2 ratio

When it is time to return to supine position, apply bedding as previously described with the exception of the pillows under chest, torso and legs.

- Always turn face away from the direction of the turn to keep ETT and ventilator tubing moving over top of patient and visible throughout the turn.

Patient care is maintained as usual. Careful monitoring of the following:

- Check eyes every 2 hours to ensure tape still in place; lubricate eyes PRN
- Turn head from side to side every 2 hours, repositioning arms and checking for any pressure injury
- Frequent oral care (may be required more frequently than q2h) - drainage may be increased while in prone position
- Keep the urinary catheter placed between the legs
- Turn patient side to side (for pressure relief) every 2 hours using extra pillows to maintain positioning

In the event of cardiac arrest:

- **DO NOT IMMEDIATELY TURN PATIENT BACK TO SUPINE POSITION**
- Slide hard board under patient and start compressions over the spine
- If CPR is not effective, as soon as team ready to safely turn, reposition to supine and continue resuscitation efforts.