

MGH Emergency Department Non-Intubated Prone Positioning Guidelines

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Massachusetts General Hospital
Prone Positioning for Non-Intubated Patients Guideline

Designated Clinical Areas:

Emergency Department

Introduction/Purpose:

For patients with hypoxemia there are many physiologic benefits to the prone position. These include better matching of pulmonary perfusion to ventilation, better recruitment of dependent areas of the lung and improved arterial oxygenation. In addition, there is evidence that the prone position results in a more homogenous distribution of stresses in the lung and thus may prevent patients with hypoxemia from developing frank respiratory failure. Prone positioning is extensively used in the ICU to treat intubated patients with hypoxemic respiratory failure^{1,2} but the benefits cited above may accrue to non-intubated patients as well. For this reason, patients presenting with hypoxemia should be encouraged to adopt the prone position where practical. Prone positioning may be used as a rescue therapy in patients with escalating oxygen needs. This document serves to inform clinicians about prone positioning of non-intubated, hypoxemic patients in the Emergency Department.

Indications:

- Patients with moderate hypoxemia, SpO₂ < 95% on supplemental oxygen or < 90% with exertion
- Patients with tachypnea or mild-moderate dyspnea with supplemental oxygen
- Rescue therapy, as below

Contraindications:

- Spinal instability
- Facial or pelvic fractures
- Open chest or unstable chest wall
- Delirium, confusion, or inability to follow staff instructions when given proper interpretive services
- Inability to independently change position
- Recent nausea or vomiting
- Advanced pregnancy
- Inability to obtain reliable pulse oximetry waveform
- Hemodynamic lability, including but not limited to, heart rate > 120 or MAP < 65
- Need for immediate intubation, including severe respiratory distress (tachypnea or dyspnea) not responsive to supplemental oxygen

Equipment:

- Pillow
- Supplemental oxygen
- Continuous O₂ monitor
- Telemetry monitoring

Nursing Actions/Special Considerations

Assessment

1. Assess mobility
2. Assess mental status
3. Evaluate for absolute/relative contraindications (noted above)

Monitoring of Patient

1. EKG leads should remain on anterior/lateral chest wall for continuous monitoring
2. Continuous SpO₂ probe should be placed on patient and waveform verified

Procedure

1. A patient experiencing persistent mild-moderate respiratory symptoms despite supplemental oxygen should receive an initial one-hour period of prone position.
2. EKG leads should remain on anterior chest wall.
3. In the prone position, the patient should lie on his/her stomach, supported by their arms and a pillow in such a manner that oxygen supply tubing is unobstructed.
4. Pillows may be placed under the hips, or under the legs, as needed, for comfort.
5. The patient should be assessed continuously for the first 5 minutes to ensure tolerance and comfort. Note that patients may get winded with the turning, but improve with rest.
6. After initial one-hour period, the patient should be reassessed, with repeat vital signs and dyspnea assessment documented. Any patient with a clinical deterioration despite proning should be considered for intubation.
7. After demonstrating tolerance for an hour, the patient can reposition themselves to supine, but should be educated on the use of prone position and encouraged to adopt prone position as often as tolerated and able.
8. Prior to being encouraged to adopt the prone position, the patient should be assessed for ability to independently change position in bed.
9. The call bell must be within the patient's reach at all times.
10. To minimize interruptions during prone positioning, patients should consider comfort
11. strategies such as: using the bathroom, having their phone or other device within view, and utilizing music or television as a distraction.

Documentation

1. Patients' SpO₂, oxygen device (i.e NC, simple face mask, NRB), L/min of O₂, respiratory rate and dyspnea should be assessed just prior to proning and one hour after prone.
2. Documenting response to one hour in the prone position in EPIC (SpO₂, oxygen device, L/min of O₂, RR, s/sx of respiratory distress) will help identify those patients who are most likely to benefit should prone positioning be needed as a rescue therapy.
3. Consider lead placement, ensuring that the leads are not placed on potential pressure points
4. Encourage patient to be mindful of discomfort due to pressure and adjust themselves as needed.
5. Document patient position in [Institution's EMR system].

Prone position as rescue therapy

1. A patient who develops increasing oxygen need (an increase of > 2L/min in the amount of oxygen needed to maintain SpO₂ > 90%) is at risk for respiratory failure. Note that this may occur after checking an exertional oxygen saturation.
2. If the patient is in the supine position, and it is safe to do so, place the patient in the prone position.
3. Notify the ED senior resident, attending, TRN and resource nurse of worsening hypoxemia
4. If patient stabilizes (decreased RR, increased SpO₂, decreased L.min O₂), reassess with nursing and ED senior resident or attending after 1 hour.

Cardiac Arrest

1. In the rare event of cardiac arrest while prone, the patient should be turned supine as soon as possible.
2. Resuscitation should be carried out according to the Emergency Medicine Guidelines for Adult Out-of-hospital Cardiac Arrest During COVID-19 Pandemic, prioritizing staff PPE and safety.

Documentation

At time of the event, document in EPIC:

- L/min of O₂
- Oxygen device (NC, face mask, NRB)
- RR
- SpO₂

References:

1. Drahnak, D., & Custer, N. (2015). Prone Positioning of Patients with Acute Respiratory Distress Syndrome. *Critical Care Nurse*, 32(6): 29-37.
2. Guerin C, Reignier J, Richard J et al. Prone positioning in severe acute respiratory distress syndrome. *NEJM* (2013); 368(23): 2159-2168.
3. Sun, Q., Qiu, H., Huang, M., Yang, Y., 2020 Lower mortality of COVID-19 by early recognition and intervention: experience from Jiangsu Province. *Ann. Intensive Care* 10; 33