 <b>Lakeridge Health</b>	<b>Non-Mechanically Ventilated Patient Pronation – Guideline</b>	
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	<input checked="" type="checkbox"/> Harmonized	Document Applies to: Lakeridge Health Inpatient teams – All Sites
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## Introduction

Prone positioning improves oxygenation through a variety of mechanisms, primarily optimization of ventilation and perfusion. It produces changes in the distribution of extravascular lung water as well as secretions and results in a decrease in both alveolar over inflation and alveolar collapse.

## Guideline

Prone positioning for appropriate patients is an intervention that can be done in most circumstances to improve oxygenation and is compatible with all forms of basic respiratory support requiring little to no equipment for conscious patients. See [Appendix A](#) for prone positioning process guidance.

An order by the Most Responsible Prescriber (MRP) is required and a plan should be discussed by the interprofessional team in advance to ensure a safe environment for pronation of the non-mechanically ventilated patient.

Prone positioning for the non-mechanically ventilated patient can be maintained for 30 minutes to 2 hours. Several repeat sessions may be required and are dependent upon the patient's response and tolerance.

## Indications

- If patient is on supplemental oxygen to achieve SpO<sub>2</sub> greater than or equal to 92% AND has a suspected/confirmed infectious disease (i.e. COVID19).

## Absolute contraindication

- Respiratory distress (RR greater than 35, acutely acidotic, accessory muscle use)
- Immediate need for intubation
- Haemodynamic instability (SBP less than 90 mmHg) or arrhythmia or requiring pressors
- Agitation or altered mental status
- Unstable pelvic/spine/thoracic injury/recent abdominal surgery
- Massive hemoptysis requiring immediate surgical or interventional radiology procedure
- Serious facial trauma or facial surgery in the previous 15 days
- Cardiac pacemaker (temporary or permanent) inserted less than 48 hours ago
- Abdominal compartment syndrome

## Relative contraindications

The following list does not exclude a patient from prone positioning, but extra caution and consideration must be exercised when proning a patient with any of the following.

- Dialysis
- Morbid obesity
- Anterior chest tube with airleak
- Deep venous thrombosis treated for less than 48 hours ago
- Mild facial injury
- Neurological issues/ neuromuscular weakness
- Pregnancy (2nd/3rd trimester)
- Pressure ulcers

Discussion with consulting services is recommended to optimize patient safety.

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## Turn to Prone Assessment

If patient meets criteria for proning ask the patient to switch positions every 30 minutes or as required including prone, side lying and sitting up as indicated in Figure 1, Figure 2 and Table 1 ([Appendix A](#)). Monitor oxygen saturations 15 minutes after each position change to ensure oxygen saturation has not decreased. When not prone, the patient should be positioned in semi-fowlers, between 30 – 60 degrees.

Discontinue prone positioning if there is:

- No improvement with change of position
- Patient unable to tolerate position

**NOTE:** Consider notifying Registered Respiratory Therapist (RRT) or Critical Care Outreach Team (CCOT) if patient's vital signs do not return to baseline or the patient deteriorates further.

When in prone it is important to consider additional risks to skin integrity given the pressure on different bony prominences than when in supine. Refer to the Pressure Injury Prevention and Management Patient Care Standard to support patient safety.

Some common strategies for pressure injury prevention that may be indicated are:

- Placing pillows or pressure relieving devices at potential pressure areas (face, knees, hips and chest)
- Applying protective dressings to bony prominences such as knees/iliac crest as needed (i.e. Mepilex)

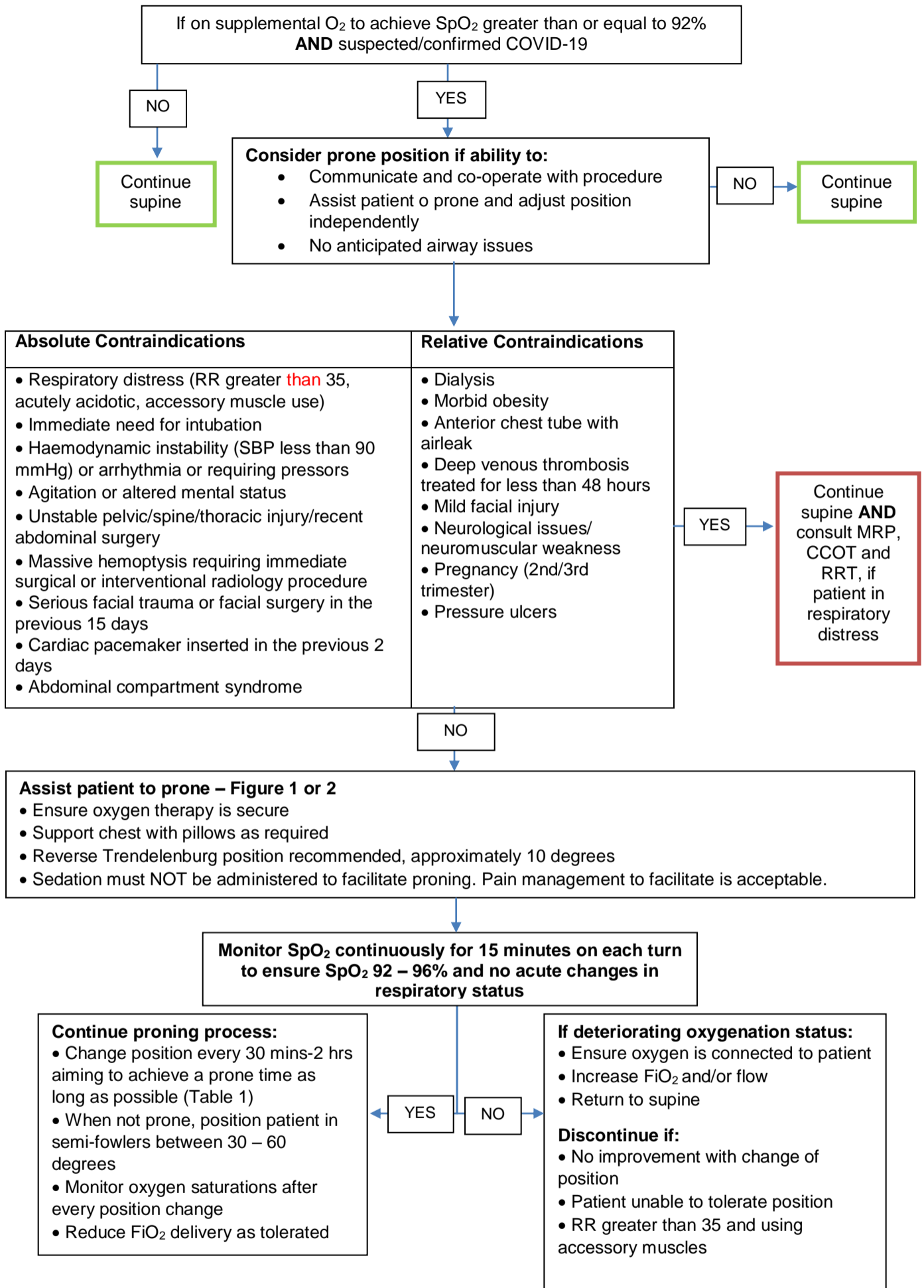
## References

Elmhurst Hospital. SB, <https://www.embeds.co.uk/wp-content/uploads/2020/04/Self-Proning-Positioning-leaflet.pdf>

Prone positioning in severe acute respiratory distress syndrome. New England Journal of Medicine, 386(23), 2159-2168.

Taranaki District Health Board. NZ, Physiotherapy and COVID-19 Physiotherapy Booklet; April 2020.

**Appendix A - Prone Positioning of the Patient**



## Appendix A - Prone Positioning of the Patient (cont'd)

Table 1 – Timed position changes for patients undergoing conscious proning process

### Timed Position Changes

If patient fulfills criteria for proning ask the patient to switch positions as follows. Monitor oxygen saturations 15 minutes after each position change to ensure oxygen saturation has not decreased.

- 1) 30 minutes to 2 hours lying fully prone (Reverse Trendelenburg position recommended, approximately 10 degrees)
- 2) 30 minutes to 2 hours lying on right side (Reverse Trendelenburg position recommended, approximately 10 degrees)
- 3) 30 minutes to 2 hours sitting up (30 – 60 degrees) by adjusting head of the bed
- 4) 30 minutes to 2 hours lying on the left side (Reverse Trendelenburg position recommended, approximately 10 degrees)
- 5) Repeat cycle, if tolerated

\* If O<sub>2</sub> weaned while in prone position, carefully monitor FiO<sub>2</sub> requirements when returned to supine. Ensure patient has call bell within reach to signal assistance if patient decides to unprone independently

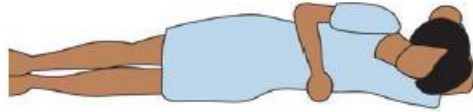
## Appendix A - Prone Positioning of the Patient (cont'd)

Figure 1 - Positioning Images

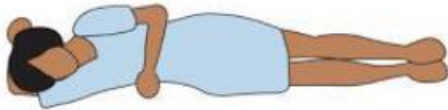
1. 30 minutes - 2 hours: lying fully prone (bed flat)



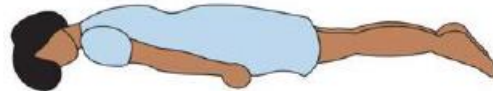
4. 30 minutes - 2 hours: lying on your left side (bed flat)



2. 30 minutes - 2 hours: lying on your right side (bed flat)



5. Then back to Position 1. Lying fully prone (bed flat)



3. 30 minutes - 2 hours: sitting up (30-60 degrees) by adjusting head of the bed



Figure 2 – Alternative Prone Positioning Images

