

Awake Prone Positioning for COVID-19



Western Health

COVID - 19

Be Safe -- Be Smart -- Be Kind

Clinical Considerations for Awake Prone Positioning

1.0 Overview & Summary

- Awake prone positioning improves oxygenation and reduces incidence of treatment failure and need for mechanical ventilation in patients with hypoxaemic respiratory failure due to COVID-19.
- Prone positioning is a safe and feasible, simple intervention that can be done in most circumstances, is compatible with all forms of basic respiratory support and requires little or no equipment in the conscious patient.
- Awake prone positioning is recommended to be performed on all suitable patients on the ward and in the Intensive Care Unit.
- Medical staff, ICU Liaison, nursing staff and physiotherapists can initiate and implement prone positioning in suitable patients on the wards and in the Intensive Care Unit at Western Health. ICU Liaison must be contacted and informed when awake prone is being considered for ward patients with $FiO_2 > 0.4$.
- Longer durations in the prone position (i.e. >8 hours per day) are associated with improved outcomes
- A flow diagram, check-list and patient information handout are included in this QRG

Associated documents included in this QRG:

- Appendix 1: Awake Prone Flow-Sheet
- Appendix 2: Awake Prone – Quick Reference Visual Guide
- Appendix 3: Patient / carer hand-out (in various languages) including YouTube link.
- Appendix 4: Bedside Poster

2.0 Background & Rationale

International reports indicate that patients diagnosed with COVID-19 present with lung injury that demonstrates features similar to Acute Respiratory Distress Syndrome (ARDS) (Gattinoni et al, 2020). Prone positioning is a treatment manoeuvre that is used to improve oxygenation for patients with ARDS.

Recent evidence advocates for awake prone positioning to become standard of care for suspected or confirmed COVID-19 with hypoxaemic respiratory failure (Koeckerling et al, 2020, Ehrmann et al 2021). Prone positioning reduces ventilation/perfusion mismatching, hypoxaemia and shunting. There is a decrease in pleural pressure gradient between

dependent and non-dependent lung regions as a result of gravitational effects and conformational shape matching of the lung to the chest cavity (Koeckerling et al., 2020).

Recent studies, including a prospective, multicentre international randomised meta-trial of 1121 patients (Ehrman et al), demonstrate that awake prone positioning in non-intubated patients with COVID-19 and associated hypoxaemic respiratory failure requiring supplementary oxygen results in:

- **Improvement in oxygenation** (Coppo et al., 2020, Xu et al 2020, Thompson et al 2020, Ehrman et al 2021)
- **Reduction in incidence of treatment failure at 28 days and need for intubation** (Ehrmann et al 2021)
- **Improved ability to wean from high flow nasal cannula** (Ehrmann et al 2021)
- nil significant difference with need for non-invasive ventilation (Ehrmann et al 2021)

The use of awake prone positioning will aim to reduce the burden of our critical staff and resources (e.g. ventilator usage) during the pandemic surge.

3.0 Safety & Feasibility

Studies have demonstrated that prone positioning in non-intubated patients with COVID-19 is feasible (Coppo et al 2020) and safe, without significant incidence of harm (Ehrmann et al 2021).

The risk of secondary complications from prone positioning (e.g. skin breakdown, vomiting, and line dislodgement) is low and incidence no greater than in patients managed in a supine position (Ehrmann et al 2021).

4.0 Patient Population – Flowsheet

See Appendix 1: Awake Prone Flowsheet

Appendix 1 outlines:

- Inclusion and exclusion criteria
- Patient monitoring
- Steps to take if the patient is not tolerating prone position

5.0 Awake Prone Delivery and Implementation

An Awake Prone Quick Visual Reference Guide (**Appendix 2**) has been developed as an easy to use, visual guide to assist staff with the implementation of awake prone and summarises key aspects of the below points.

5.1 PPE All staff entering the bed area must be wearing the recommended PPE as per the Western Health COVID-19 PPE Guidelines, please see the [microsite](#) for the latest version.

5.2 Responsibility

Medical staff, ICU Liaison, nursing staff and physiotherapists can initiate and implement prone positioning in suitable patients on the wards and in the Intensive Care Unit at Western Health. ICU Liaison must be contacted and informed when awake prone is being considered for ward patients when $FiO_2 > 0.4$.

5.3 Patient Consent

Patient consent will be obtained and the procedure explained with patient / family.

5.3 Timing / When

Awake prone will be implemented when a patient meets the inclusion criteria as outlined in the **Awake Prone Flowsheet (Appendix 1)**.

Considerations around meal times, toilet breaks, physiotherapy and exercise, sleep should be pragmatic – enabling the patient to move between positions and eat/drink/exercise, with the ultimate aim for the patient to remain in prone as long as possible.

5.4 Turning the patient prone: Pre-checks and Preparation

Pre-checks and preparation:

Staffing:

- Healthcare team member(s) able to remain with patient and monitor prior to and 15 min post prone.
- Additional team member availability to assist or call for help if required.

Equipment:

- Non rebreather mask (in event of acute hypoxia)
- Observations machine
- Additional pillow(s) for chest / arm / hip support as required
- Check oxygen tubing and IV lines have sufficient length

Patient

- The patients should be able to independently position themselves in to the prone position or require minimal assistance to turn prone. A consultation with a Physiotherapist or ICU Liaison would be recommended if more than one staff member is required for the manoeuvre.
- Review indications & contraindications
- Explain procedure to patient and potential benefits
- Patient permission/consent
- Ensure call bell available at all times

5.5 Turning a patient prone – the Manoeuvre

See video (You-tube link) <https://www.youtube.com/watch?v=cCkHPYpwg2g>

5.6 Monitoring and Post Prone considerations

Monitoring requirements are outlined in **Awake Prone Flowsheet (Appendix 1)**.

- Patient observations
 - Observe patient for 15 minutes post prone positioning, then complete a full set of vital signs
 - Continuous SpO2 monitoring if possible or assess SpO2, RR and patient comfort every 15 minutes.
- Pressure area care: Position change should occur every 2 hours.
- Eating and drinking: The patient should move to a suitable position to eat/drink
- A call bell will be left within reach

5.7 Dosage

There is no study that specifically identifies the ideal dosage of awake prone positioning, however Ehrmann et al 2021 demonstrated longer duration of awake prone positioning (greater than 8 hours per day) was associated with greater treatment success.

It is recommended that patients should be encouraged to remain in prone for as long as they can tolerate each day.

5.8 Cessation of Awake Prone

Awake prone will cease when a patient no longer meets inclusion criteria.

- Improved oxygenation: Patient weaned to 2L O2 per minute via nasal cannula or less

- Meets exclusion criteria

5.9 Patient Information

A patient information sheet is available (Appendix 3) and will be translated in to key Western Health Languages.

5.10 Bedside Poster

A bedside poster (Appendix 4) is available to place on the wall behind the patient's bed to remind staff to position the patient in prone.

6.0 Awake prone for complex patients

For patients that may have precautions to awake prone (Appendix 1) consider:

- Referral to Physiotherapy for patients with complex mobility/positioning needs that meet inclusion criteria
- Referral to Bariatric Assessment Team (BAT Team) for bariatric patients as required
- Referral to Physiotherapy for airway clearance and positioning advice in patients with excess bronchial secretions

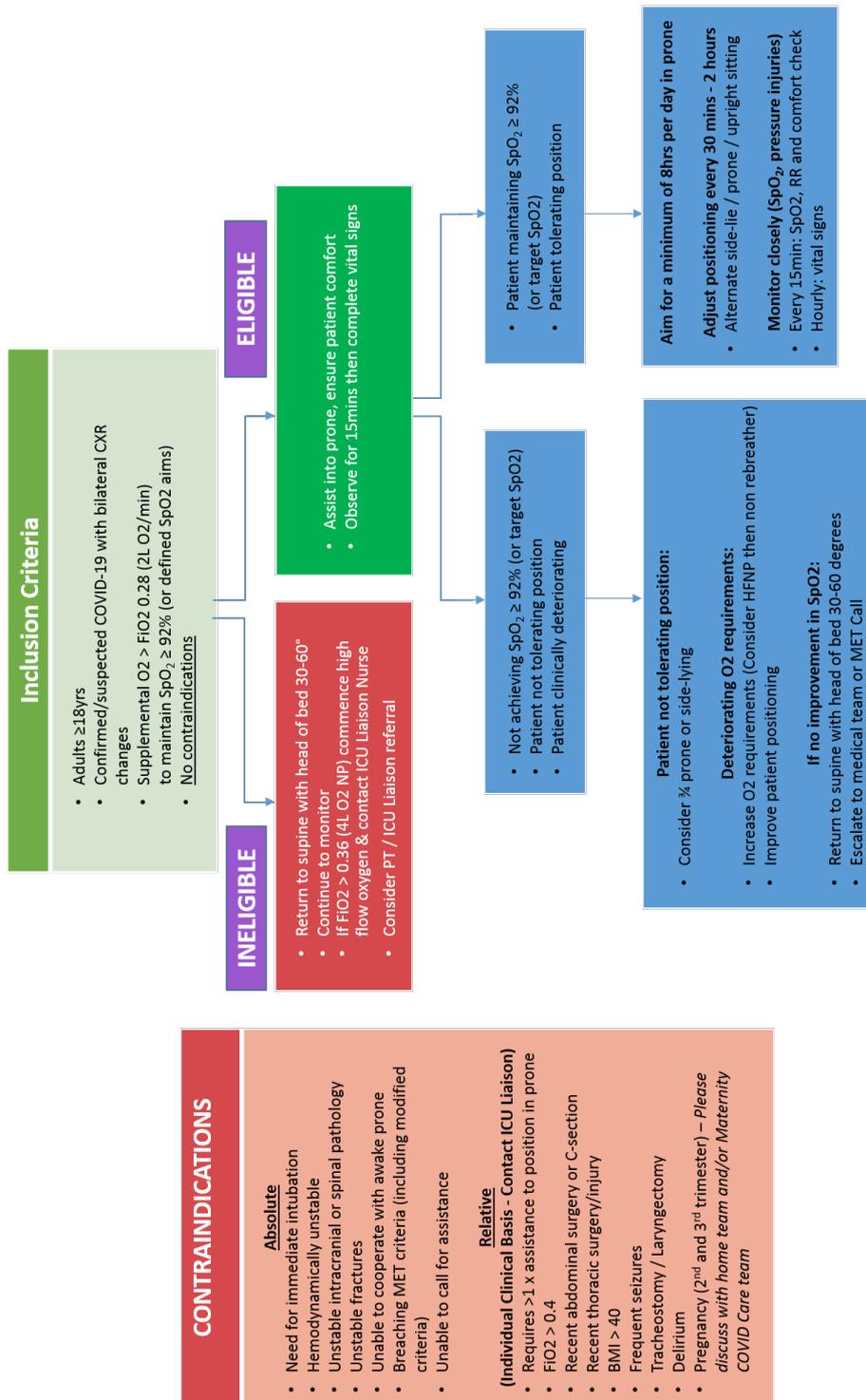
Modified Prone Position

The $\frac{3}{4}$ prone position should be considered if the patient is unable to position in full prone.

Pregnant Patients

- Discussion with the treating team and/or Maternity COVID-19 Care Team should occur prior to prone positioning of any pregnant patient.
- Caution should be taken when proning pregnant COVID-19 patients, particularly after 28 weeks gestation
- If proning is deemed not possible, consider placing the patient in a supported lateral recumbent position
- Caution should be taken when proning patients after Lower Segment Caesarean Section (LSCS), as this may increase the risk of mask bleeding at the incision

Appendix 1 – Awake Prone Flowsheet



Appendix 2 – Awake Prone Quick Visual Reference Guide

AWAKE PRONE VISUAL REFERENCE GUIDE

WHAT IS PRONE POSITIONING AND ITS BENEFITS?

Prone positioning is when the patient is positioned to lie on their stomach in bed during certain times of the day. Prone positioning can improve oxygenation, reduce ventilation/perfusion mismatching, shunting in patients with COVID-19.

INCLUSION CRITERIA

≥18yo patients with suspected OR confirmed COVID-19.

Able to participate in prone positioning.
FiO2 ≤ 0.4 to maintain SpO2 aims.

If patient requires > FiO2 0.40, please contact ICU Liason prior to prone position



CONTRAINDICATIONS

- Need for immediate intubation
- Haemodynamically unstable
- Unstable intracranial or spinal pathology
- Unstable fractures
- Unable to call for assistance
- Breaching MET criteria
- Unable to cooperate or requires moderate assistance to position.

PRONE & MONITOR

Please refer to pre-prone checklist on reverse.

Monitor patient for 15 minutes post prone position then measure vitals (SpO2 and RR).



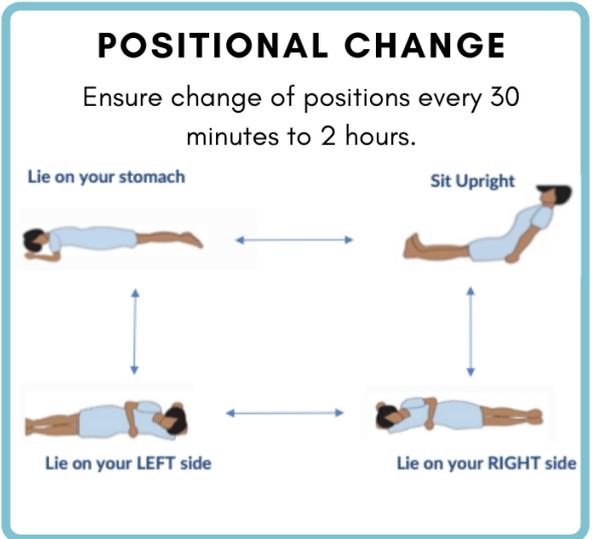
TROUBLESHOOT

If patient is NOT maintaining SpO2 OR tolerating prone position, **CONSIDER:**

- Increasing oxygen
- Consider humidified oxygen
- Modifying position (3/4 prone, sidelying)

If NO improvements despite modifications, **CEASE** prone positioning.

Consider contacting ICU Liason or Physiotherapist

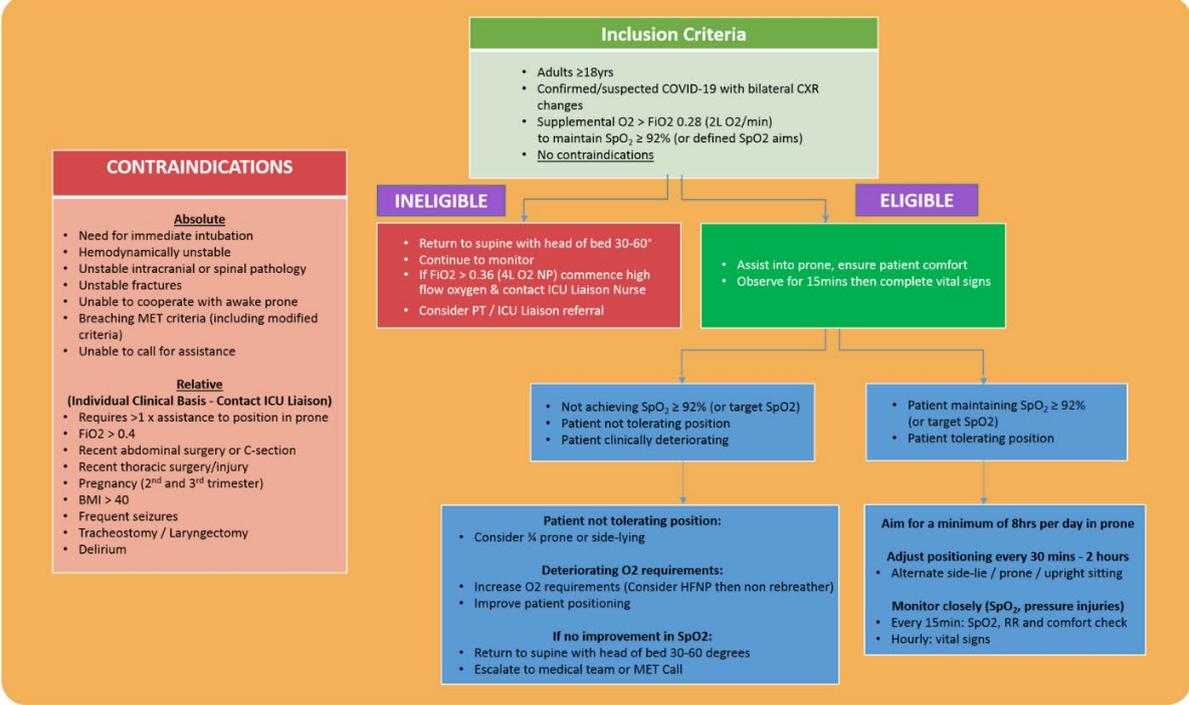


GOAL

If patient tolerating position AND maintaing SpO2 aims, **CONTINUE** prone positioning.



AWAKE PRONE POSITIONING FLOWSHEET



Appendix 3 – Patient / Carer Information Sheet

To be translated in to key WH languages.



PRONE POSITIONING Information for patients, families & carers.

What is “prone positioning”?

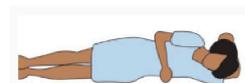
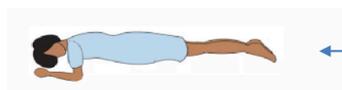
Prone positioning is where you lie on your stomach with the support of pillows. Prone positioning has been shown to improve the amount of oxygen you can get into your blood which can help your breathing.

How often should I lie on my stomach?

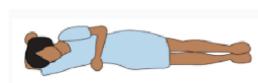
- You should lie on your stomach for **as long as you can each day**.
- **Aim for at least 8 hours a day in total on your stomach**
- You should move/change your position **every 30 minutes to 2 hours** like in the images below
- If you require assistance to change positions, please ask nursing staff

Lie on your stomach

Sit Upright



Lie on your LEFT side



Lie on your RIGHT side

Can I get up to move / exercise / eat?

Yes, you can get up to eat and drink, go to the toilet, for procedures and to exercise.

If you have further questions, please contact your nurse or physiotherapist

Please scan the QR code to watch a video on how to position yourself in prone.



Appendix 4 – Bed Poster

AWAKE PRONE POSITIONING

 Prone positioning, lying on your stomach, can help improve oxygenation in patients with COVID-19

Ensure patient meets eligible criteria for awake prone positioning and does not have any contraindications 

 Monitor patient for 15 minutes and measure vitals. Consider altering oxygen requirements and position as required.

Aim for accumulative 8 hours per day. Encourage positional change every 30 mins - 2 hours. 

**THIS PATIENT WOULD BENEFIT FROM PRONE POSITIONING.
PLEASE ENCOURAGE AND/OR ASSIST PATIENT WITH POSITIONING.**

If you have any concerns with awake prone positioning, please refer to ward information sheet or QRG.
Contact ICU Liason or Physiotherapist if required

References

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Acknowledgements

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