

## National Stop the Pressure Programme

### Pressure ulcer prevention guidance when nursing patients in the prone position – May 2020

The prone position is defined as lying in a horizontal position with the front of the body facing downwards. Its use with critically ill patients with respiratory compromise is known to improve short-term oxygenation and lung compliance (BACCN 2018).

The desired outcome of prone positioning is to improve lung perfusion and oxygenation in patients who are in the early stages of pneumonia or who have an acute lung injury (ALI) or acute respiratory distress syndrome (ARDS) which is common in COVID – 19 patients (Zhu et al 2020).

One of the most common complications of nursing patients in the prone position is the occurrence of pressure ulcers (The Faculty for Intensive Care Medicine 2019, Bloomfield, Noble, Sudlow 2015). Pressure ulcers are likely to occur as patients are repositioned far less frequently once in prone (generally only after 16 hours) and the patient may develop significant facial oedema. It is important therefore to take precautions to reduce the risk of pressure ulcers when preparing for and caring for the patient in the prone position.

The following guidance on skin care should be used in association with the guidance on when and how to prone issued by The Faculty for Intensive Care Medicine [https://www.ficm.ac.uk/sites/default/files/prone\\_position\\_in\\_adult\\_critical\\_care\\_2019.pdf](https://www.ficm.ac.uk/sites/default/files/prone_position_in_adult_critical_care_2019.pdf)

#### Equipment

- If using a powered mattress, it should be in static / maximum / autofirm mode during the repositioning manoeuvre ensure this is deactivated once the manoeuvre is completed.
- The bed should be flat during the procedure.
- Remove any ECG dots, these should be repositioned on the patient's back following local guidance. All other monitoring lines and devices should be regularly checked to ensure that they are not under the patient.

#### Patient Positioning

**Head:** Head position should be changed in line with Consultant instructions, this is usually every 2 – 3 hours, in addition to the arms. Some patients for example ECMO patients cannot have the head repositioned due to the ECMO cannula.

If using a face cushion~ the eyebrow line should be visible and the eyes, clear. It may be helpful to place an absorbent pad with wicking technology under the head so that any oral or nasal fluids which leak out during proning are absorbed away from the skin reducing the length of time the skin is exposed to the moisture.

**Forehead:** should be protected/supported, if using a rolled-up towel avoid pressure on the eyes. If the towel appears rough enclose it in a pillowcase.

**Eyes:** no direct pressure on the eyes, lubricate and close with tape, ensure the eyelashes are facing outwards. Protect with gauze or gel pad.

**Ears:** ensure that the ears are not bent over and no devices are loading vulnerable skin areas. Protect with an appropriate dressing if necessary^

**Cheeks:** Protect the cheeks with an appropriate dressing material ^.

**Nose / NG Tube:** use the hammocking technique, if the tube is taped to the face use a silicone padding material\*. Check the skin around the nostrils and septum for damage 2 – 4 hourly.

**Lips:** protect the corners of the mouth with a silicone padding material^\*. You may also wish to apply barrier film to prevent moisture damage from any fluids that may collect.

**ET Tube:** Taped or tied. **DO NOT use Anchorfast type products.** Place foam or a silicone pad\* between the tape and the skin.

**Chin:** Protect with either an appropriate dressing material^ or a silicone padding material\*

**Neck:** Keep in a neutral position. Protect skin under tapes with an appropriate dressing material.

**Arms:** Should be in the swim position, this involves raising one arm on the same side to which the head is facing whilst placing the other arm by the patients' side.

The shoulder should be abducted to 80° and the elbow flexed 90° on the raised arm

**Chest:** supported on pillows\*\* ensure they are not too high under the chin or too low and covering the abdomen. Avoid any creases in the material adjacent to the skin.

**Breasts:** Apply protection to the nipples using appropriate dressing materials^

**Iliac crest /Pelvis:** supported on pillows as for chest

**Genitalia:** Use a strip of silicone pad between catheter and the skin, catheter tubing should lie free between the legs. Male genitals should be positioned between the legs, a heel shaped silicone pad may be used to cup the testicles if sizing is appropriate.

**Legs:** One leg in slight flexion^^, with the other leg straight. Pillow or inflatable wedge product supporting the bent leg.

**Knees:** Apply appropriate dressing material^ over areas that will be in contact with the mattress, be particularly aware of bony prominences.

**Feet:** The foot of bent leg should be offloaded by the pillow under the leg. The straight leg should have its respective foot hanging free, the toes should not be pressing into the mattress.

**Other bony prominences:** Protect with an appropriate dressing product^ or silicone padding

Once the patient is securely in the prone position, remember to restart the mattress pump if appropriate.

The bed should be in reverse Trendelenburg with a 30° head of bed elevation.

N.B.

- ~ e.g. .CS Prone head support
- \*e.g. Aderma or Kerropro
- \*\* if using a total Immersion bed the pillows will not be necessary
- \*\* If using an alternating mattress with the option to deflate specific cells the pillows may not be necessary
- ^^ same side leg is bent as arm
- ^ Appropriate dressing products – selection criteria

Select the most appropriate product based on the specific patient needs and what is available on your formulary

<b>Product</b>	<b>Pros</b>	<b>Cons</b>
<b>Film barrier product</b>	Easy to apply, protects the skin from moisture May reduce friction Needs to be reapplied as per manufacturer's instructions	Does not provide pressure relief or reduction.
<b>Thin hydrocolloid</b>	Low profile and waterproof, good in areas of higher friction as it has a low friction surface. Varying degrees of transparency to facilitate skin inspection.	Provides little if any padding or pressure relief.
<b>Multilayer silicone foam products</b>	Available as adhesive and non-adhesive depending on location Adhesive is very 'skin friendly' and less likely to cause skin stripping. Evidence to show that these products improve pressure, shear and friction, also have good absorbency	May be too thick to fit in tight areas. Ensure they are removed regular (at least once per shift) to check skin condition.
<b>Silicone padding materials</b>	Good padding redistribute pressure well. Good range of shapes and sizes.	Does not have any absorbency, may increase risk of maceration.

### References:

- Bloomfield R, Noble DW, Sudlow A. Prone position for acute respiratory failure in adults. Cochrane Database of Systematic Reviews 2015, Issue 11. Art. No.: CD008095. DOI: 10.1002/14651858.CD008095.pub2.
- British Association of Critical Care Nurses (BACCN) 2018 [https://www.baccn.org/static/uploads/resources/NRCP\\_Prone\\_Position\\_ICU\\_pt.pdf](https://www.baccn.org/static/uploads/resources/NRCP_Prone_Position_ICU_pt.pdf)
- Zhu J, Ji P, Pang J, Zhong Z, Li H, He C, Zhang J, Zhao C. Clinical characteristics of 3,062 COVID-19 patients: a meta-analysis. J Med Virol. 2020 Apr 15. doi: 10.1002/jmv.25884. [Epub ahead of print]