Background Information

- ARDS is a common condition in the pediatric intensive care unit (PICU)\(^1\).
- Mortality rate as high as 40\(^%\)\(^3\).
- Additional oxygen or ventilation may further damage lung function\(^4\).
- When placed in particular positions patients with ARDS were examined to have better outcomes, be more comfortable and breath more effectively\(^2\).
- Improvement of oxygenation was found when patients were placed in a prone position\(^1\).
- Numerous beneficial effects of prone positioning have been found to supplement pediatric patients with ARDS\(^3\).

Prone Positioning Benefits

- Increase in oxygen saturation and arterial oxygenation.
- Decreased episodes hypoxaemia, respiratory rates, heart rate, and thoracoabdominal synchrony\(^2\).
- Improves airway drainage and appears to be effective in the reversal of atelectasis\(^1\).
- Improves regional ventilation, increases of lung volume, greater uniformity of ventilation/perfusion ratios, and increased recruitment of dorsal regions of the lungs\(^3\).
- Benefits are most evident in patients with severe ARDS\(^3\).
- Prone positioning should be at least 12 hours or more per day to gain benefits of treatment position\(^3\).

Contraindications and Complications to Prone Positioning

- **Complications**
  - Facial edema and skin breakdown, transient desaturation, transient hypotension, accidental extubation, catheter displacement\(^1\).
  - Ensure no possibility of infant death syndrome\(^2\).

- **Contraindications**
  - Spinal instability and unmonitored increased intracranial pressure\(^1\).

<table>
<thead>
<tr>
<th>Relative contraindications</th>
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<td>Open abdominal wounds, multiple trauma with unstabilized fractures, severe hemodynamic instability, and high dependency on airway and vascular access(^1)</td>
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Conclusion

- Unloads the heart’s weight from the dorsal lung\(^1\).
- Improves oxygenation by optimizing lung recruitment and ventilation-perfusion matching\(^1\).
- Sustain recruitment in response to positive end-expiratory pressure\(^1\).
- Absolute survival advantage of 10-17% over other positions\(^1\).
- Reduced mortality in cases of severe ARDS\(^3\).

References