

Intubated Prone Positioning

ICD-10 Coordination and Maintenance Committee Meeting

September 13, 2022

What is intubated prone positioning?

The **coordinated** and **protocolized** turning of a **mechanically ventilated** patient from
SUPINE to **PRONE**

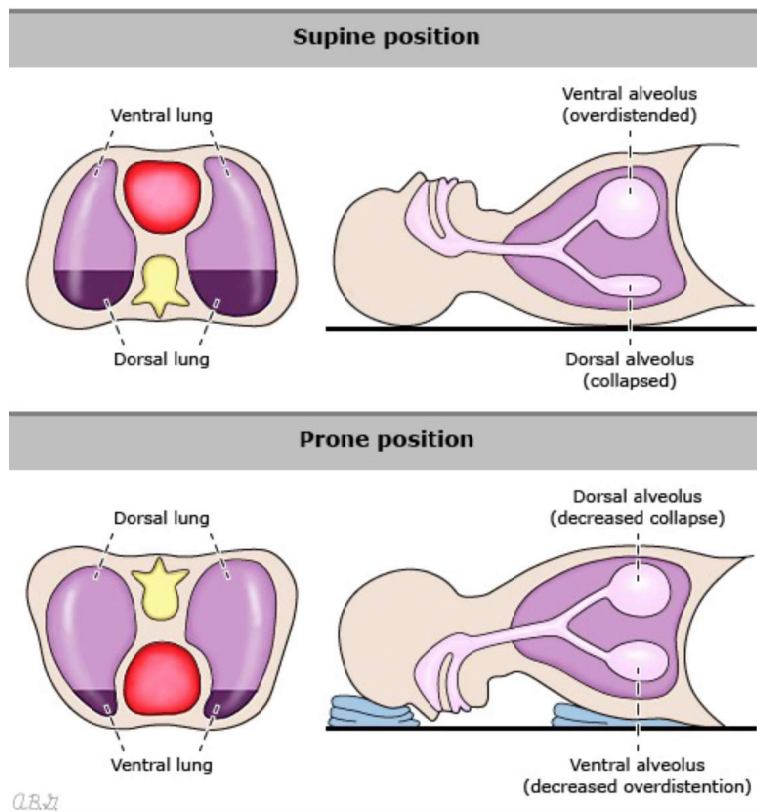


Image from Feng et al, Lancet Neurology, 2022



Image from McGuire et al, Lancet Respiratory Medicine, 2021

Prone positioning is
a physiologic treatment...



...for moderate-severe acute
respiratory distress syndrome (ARDS)



Images from:

UpToDate, **Prone ventilation for adult patients with acute respiratory distress syndrome** and
<https://radiopaedia.org/articles/acute-respiratory-distress-syndrome-1>; accessed June 28, 2022

Prone positioning is evidence-based...

The NEW ENGLAND JOURNAL *of* MEDICINE

ESTABLISHED IN 1812

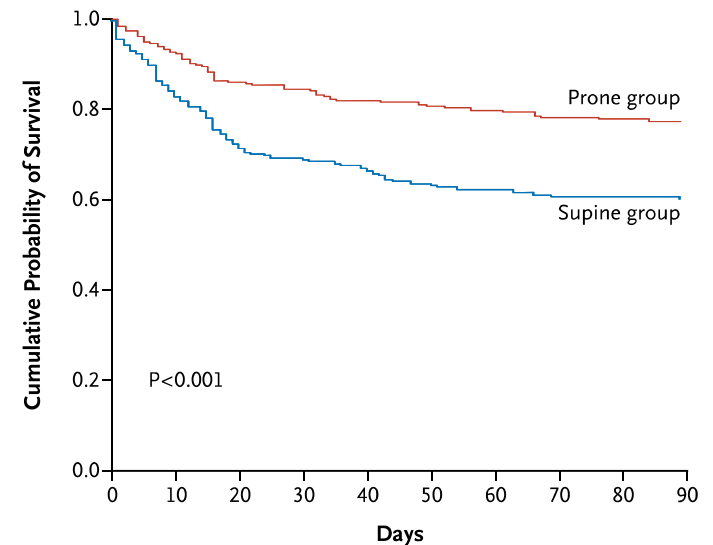
JUNE 6, 2013

VOL. 368 NO. 23

Prone Positioning in Severe Acute Respiratory Distress Syndrome

Claude Guérin, M.D., Ph.D., Jean Reignier, M.D., Ph.D., Jean-Christophe Richard, M.D., Ph.D., Pascal Beuret, M.D., Arnaud Gacouin, M.D., Thierry Boulain, M.D., Emmanuelle Mercier, M.D., Michel Badet, M.D., Alain Mercat, M.D., Ph.D., Olivier Baudin, M.D., Marc Clavel, M.D., Delphine Chatellier, M.D., Samir Jaber, M.D., Ph.D., Sylvène Rosselli, M.D., Jordi Mancebo, M.D., Ph.D., Michel Sirodot, M.D., Gilles Hilbert, M.D., Ph.D., Christian Bengler, M.D., Jack Richecœur, M.D., Marc Gainnier, M.D., Ph.D., Frédérique Bayle, M.D., Gael Bourdin, M.D., Véronique Leray, M.D., Raphaele Girard, M.D., Loredana Baboi, Ph.D., and Louis Ayzac, M.D., for the PROSEVA Study Group*

Guérin et al, PROSEVA Trial, N Engl J Med 2013.



No. at Risk

Prone group	237	202	191	186	182
Supine group	229	163	150	139	136

Figure 2. Kaplan–Meier Plot of the Probability of Survival from Randomization to Day 90.

...and guideline-recommended

AMERICAN THORACIC SOCIETY DOCUMENTS

An Official American Thoracic Society/European Society of Intensive Care Medicine/Society of Critical Care Medicine Clinical Practice Guideline: Mechanical Ventilation in Adult Patients with Acute Respiratory Distress Syndrome

Eddy Fan, Lorenzo Del Sorbo, Ewan C. Goligher, Carol L. Hodgson, Laveena Munshi, Allan J. Walkey, Neill K. J. Adhikari, Marcelo B. P. Amato, Richard Branson, Roy G. Brower, Niall D. Ferguson, Ognjen Gajic, Luciano Gattinoni, Dean Hess, Jordi Mancebo, Maureen O. Meade, Daniel F. McAuley, Antonio Pesenti, V. Marco Ranieri, Gordon D. Rubenfeld, Eileen Rubin, Maureen Seckel, Arthur S. Slutsky, Daniel Talmor, B. Taylor Thompson, Hannah Wunsch, Elizabeth Uleryk, Jan Brozek, and Laurent J. Brochard; on behalf of the American Thoracic Society, European Society of Intensive Care Medicine, and Society of Critical Care Medicine

THIS OFFICIAL CLINICAL PRACTICE GUIDELINE OF THE AMERICAN THORACIC SOCIETY (ATS), EUROPEAN SOCIETY OF INTENSIVE CARE MEDICINE (ESICM), AND SOCIETY OF CRITICAL CARE MEDICINE (SCCM) WAS APPROVED BY THE ATS, ESICM, AND SCCM, MARCH 2017



Step 1: Prepare Patient

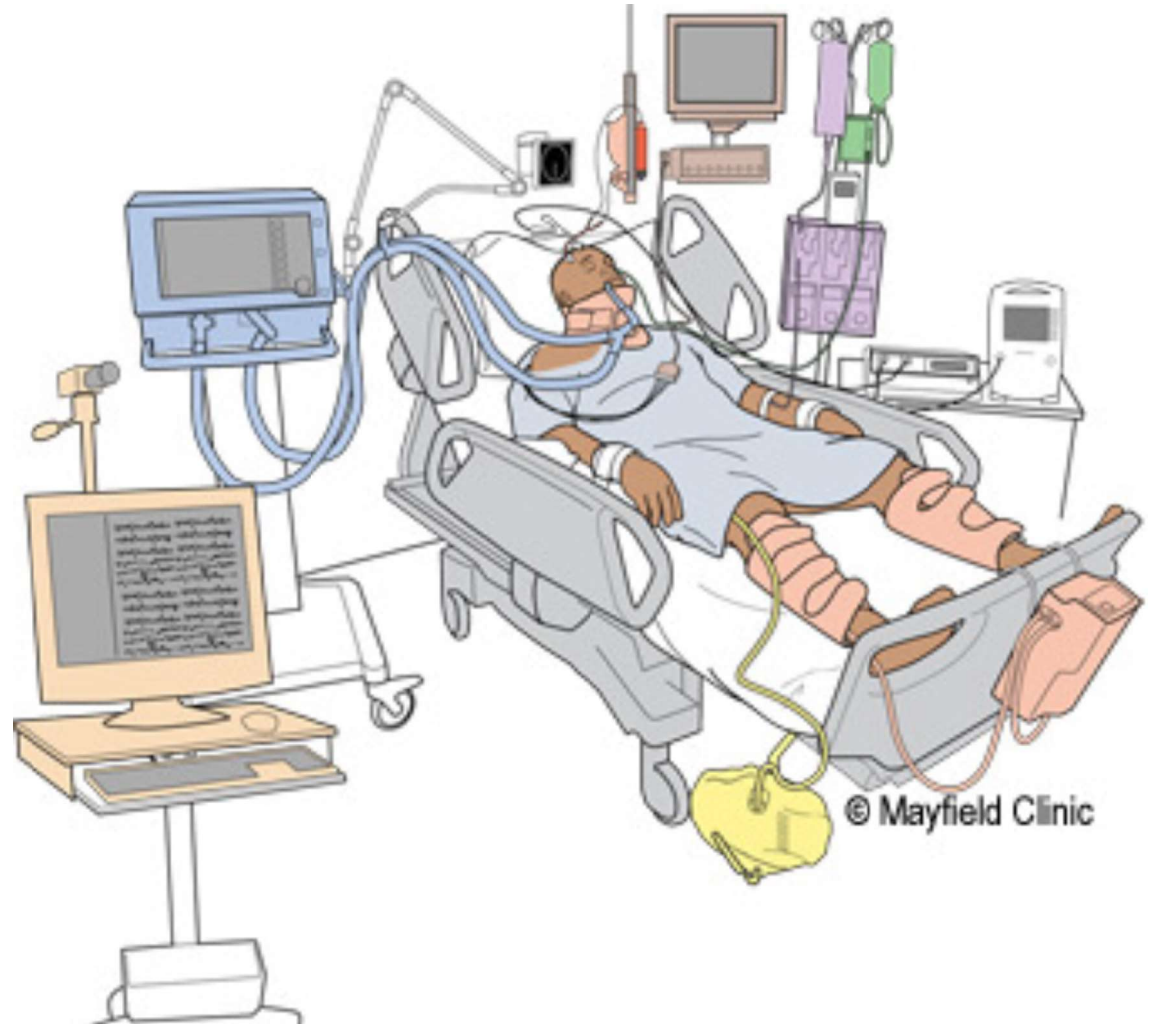


Image from <http://www.mayfieldclinic.com/pe-tbi.htm>, Accessed June 28, 2022

Step 1: Prepare Patient

A) Ensure safe **depth** of
endotracheal tube in
patient **airway**

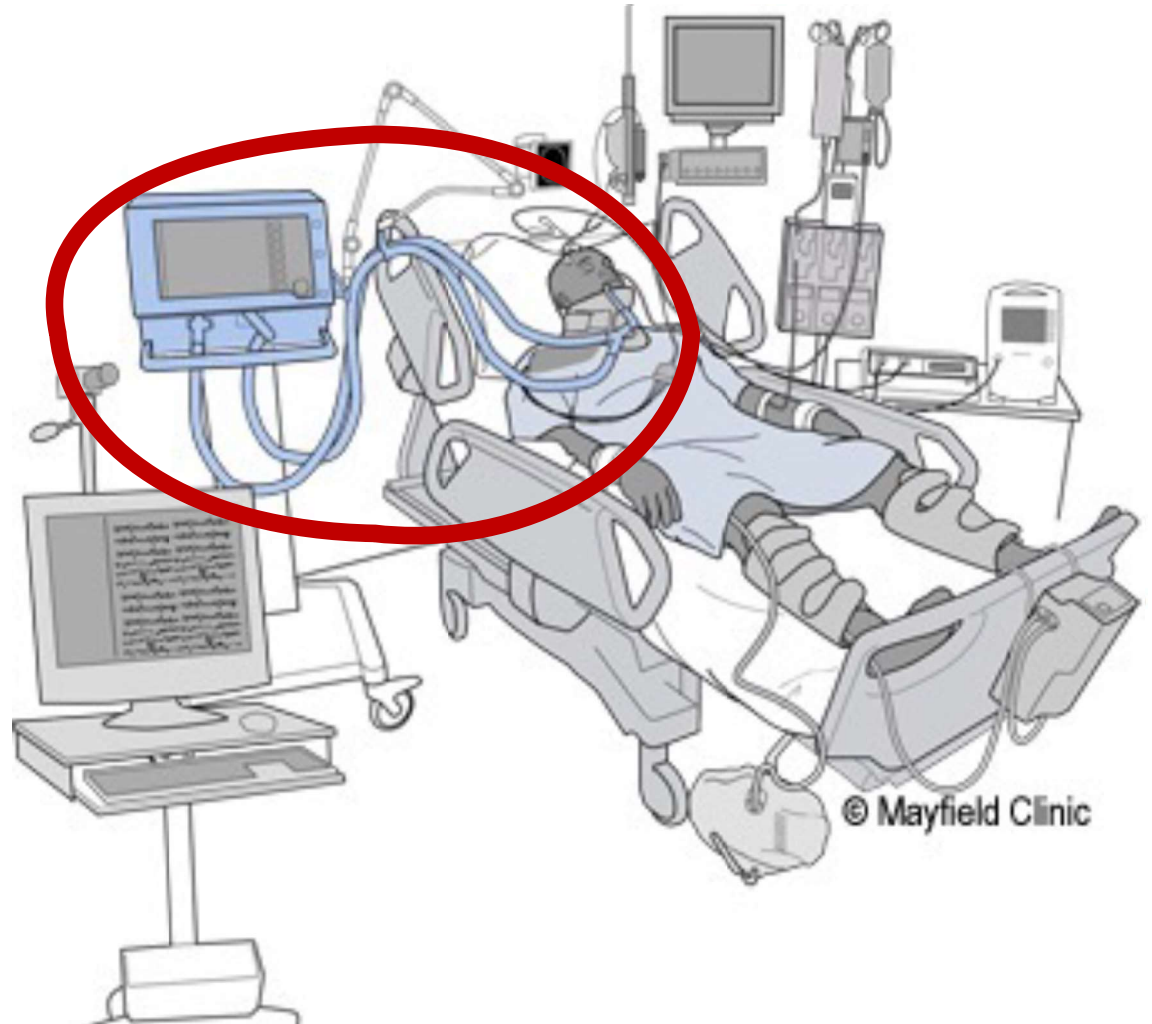


Image from <http://www.mayfieldclinic.com/pe-tbi.htm>, Accessed June 28, 2022

Step 1: Prepare Patient

B) Ensure sufficient **length**
of all **catheters** and **wires**

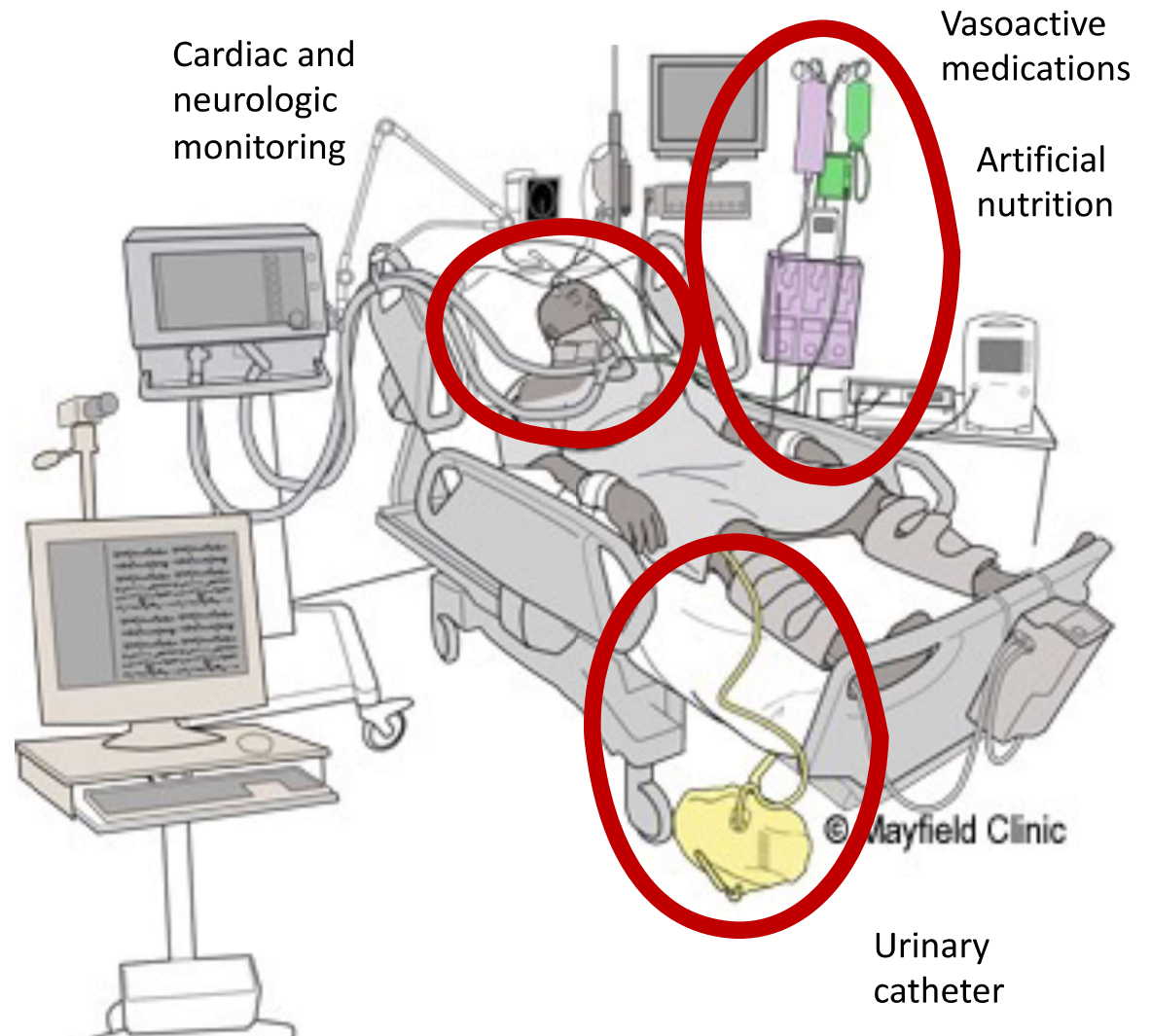


Image from <http://www.mayfieldclinic.com/pe-tbi.htm>, Accessed June 28, 2022

Step 1: Prepare Patient

C) Discontinue **artificial
nutrition** to reduce
aspiration risk

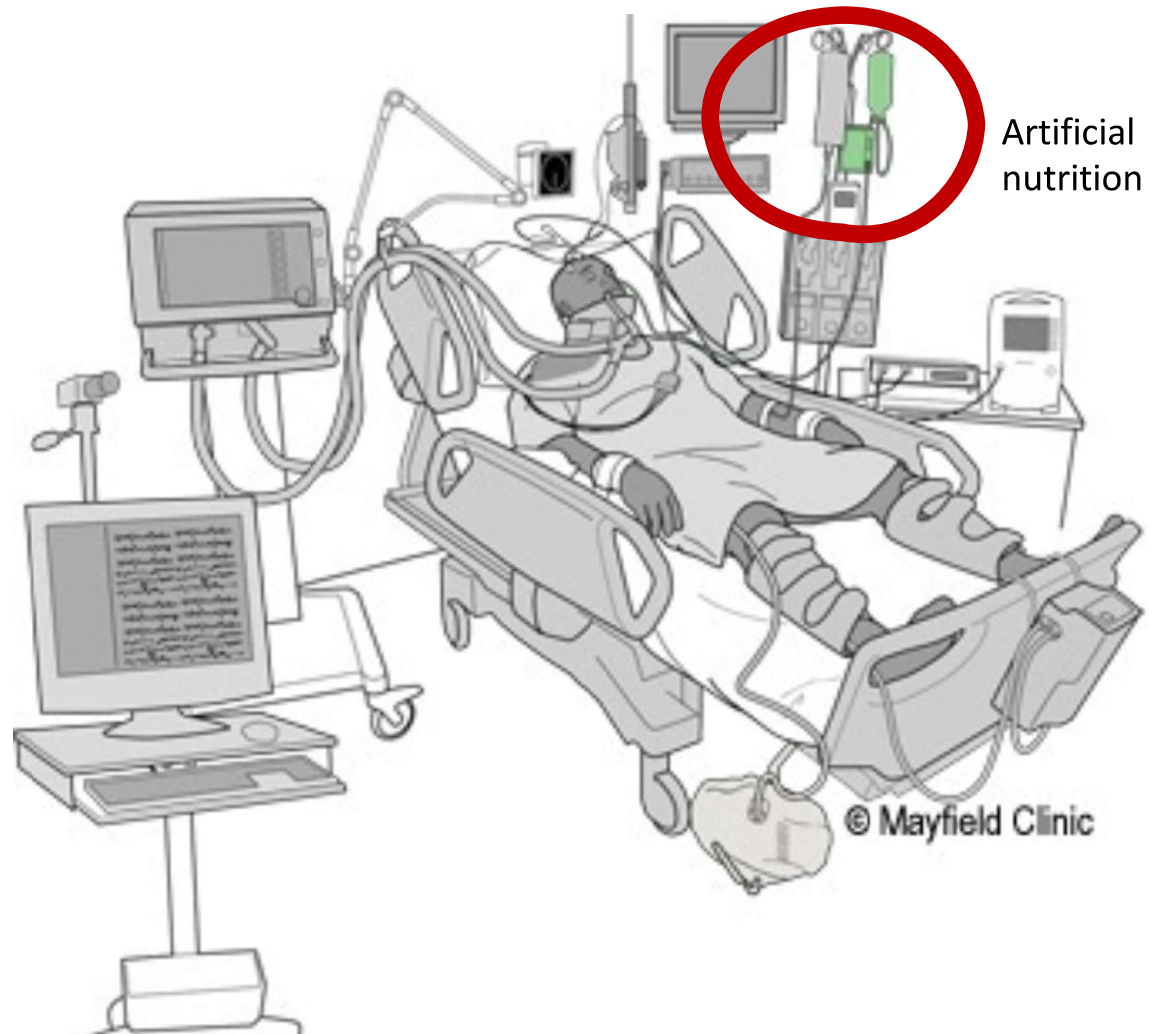


Image from <http://www.mayfieldclinic.com/pe-tbi.htm>, Accessed June 28, 2022

Step 1: Prepare Patient

D) Administer **eye lubricant** and **dressings** to bony prominences

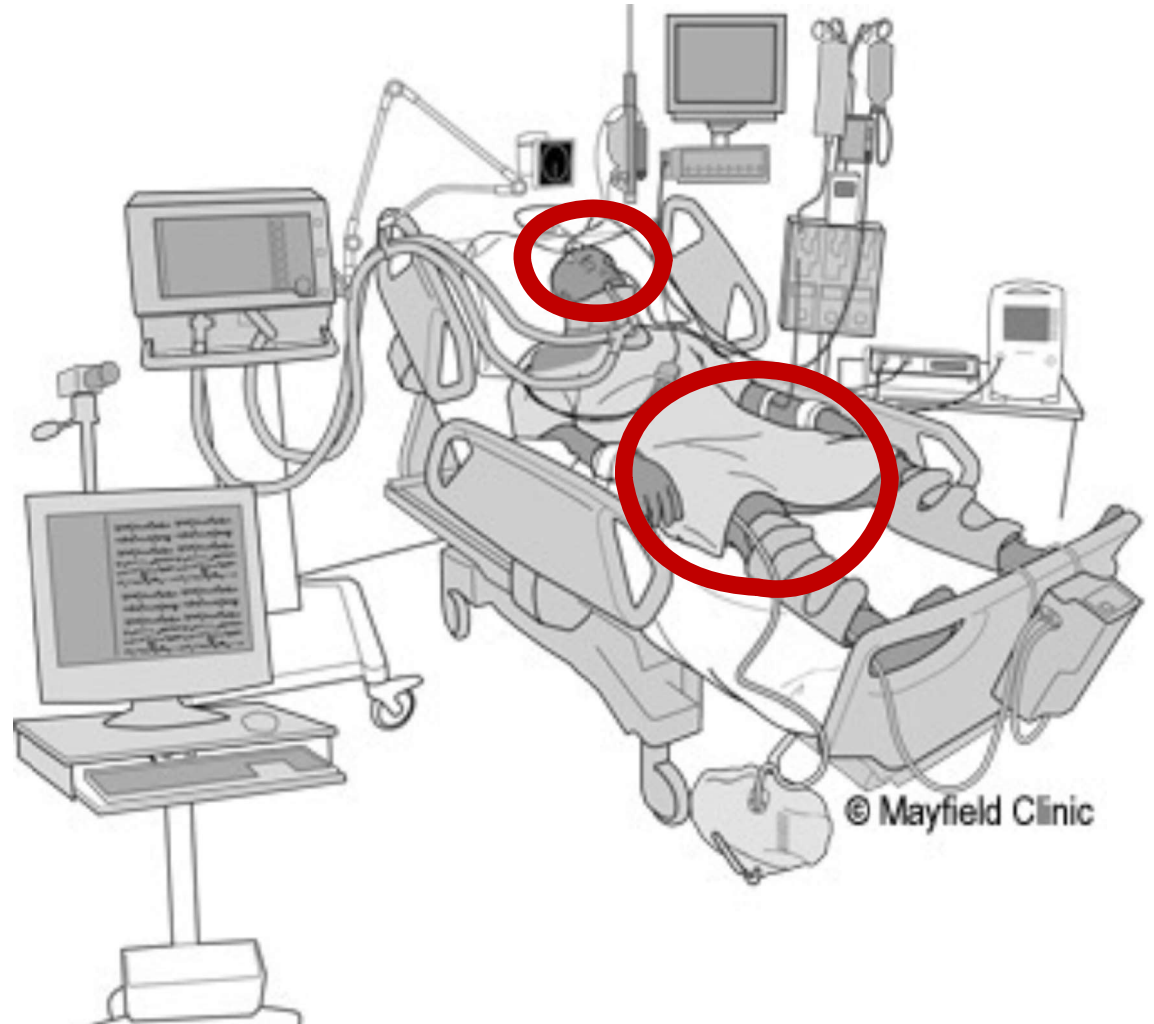


Image from <http://www.mayfieldclinic.com/pe-tbi.htm>, Accessed June 28, 2022

Step 2: Assemble equipment



Patient supports



Emergency equipment



Step 3: Convene staff, Timeout

2 nursing staff on each side of bed
1 respiratory therapist



Images from: Intensive Care Society, Guidance for Prone Positioning in Adult Critical Care,
https://www.wyccn.org/uploads/6/5/1/9/65199375/icsfcm_prone_guidance_final_2019.pdf, Accessed June 28, 2022

Step 4: Wrap and turn



1) Position



2) Pad anterior of patient



3) Top sheet



4) Bundle patient



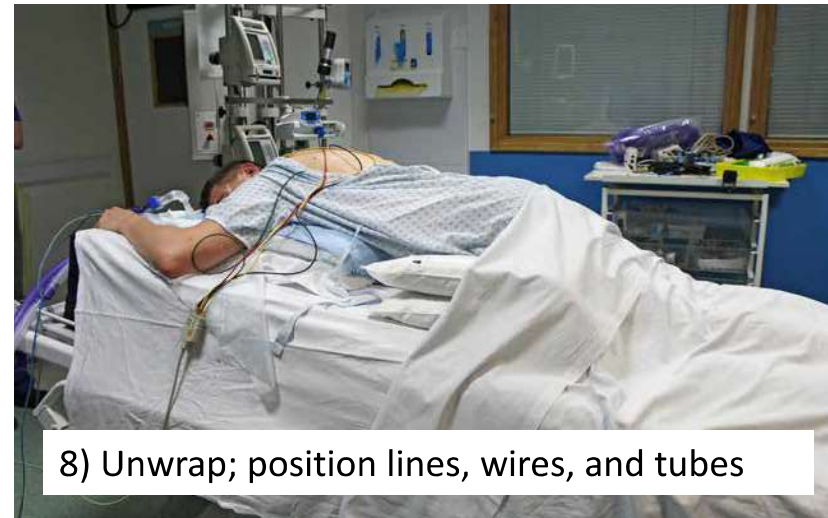
5) Lateral shift



6) First 90° turn



7) Second 90° turn



8) Unwrap; position lines, wires, and tubes

Step 5: Hemodynamic monitoring



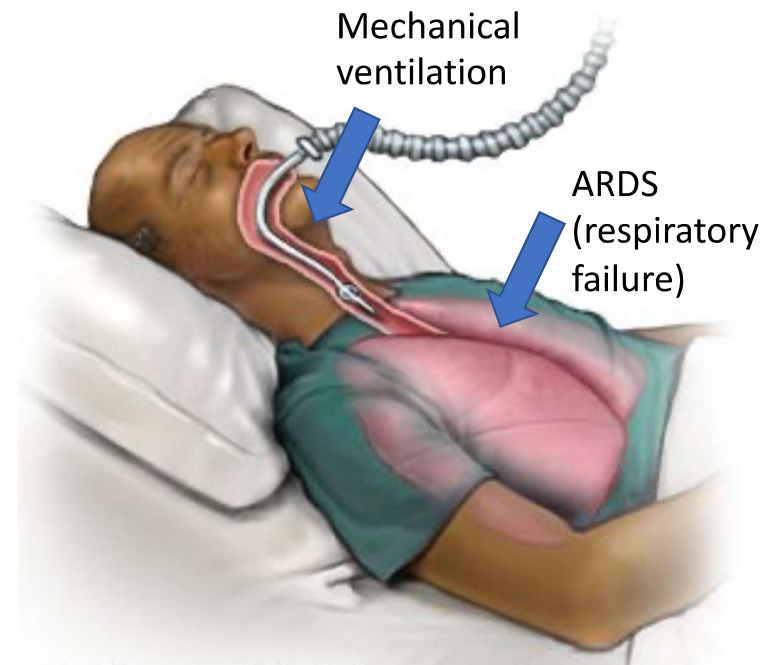
Observe 16-24 hours -->
Return to supine

Associated diagnoses and procedures

Performed in patients with:

- Moderate-severe **Acute Respiratory Distress Syndrome (ARDS)**
 - ICD-10-CM: J80
- Receiving **mechanical ventilation**
 - ICD-10-PCS: 5A1935Z, 5A1945Z, 5A1955Z
- Among **inpatients** in the intensive care unit
- As a **standalone procedure**

Estimated ~200,000 eligible patients/year



Documentation

The screenshot displays a medical flowsheet interface with a sidebar on the left containing a list of assessment types and care categories, each with a checkbox. The main area shows a table with columns for dates (6/25/19, 10/9/19) and a 'Last Filed' column. A red box highlights the 'Positioning' section, which includes 'Body Position', 'Head of Bed (HOB)', and 'Positioning/Transfer Devices'. A dropdown menu is open for 'Body Position', showing options like 'swimmer's position - head left', 'swimmer's position - head right', 'prone', 'prone positioning', and 'swimmer's position'. The right sidebar shows a 'Body Position' section with a date of 10/09/19 0900 and a list of options for 'Select Multiple Options: (F5)'.

Assessment Type	6/25/19	10/9/19	Last Filed
ASSESSMENT TYPE			
PAIN/COMFORT/SLEEP			
COPING/PSYCHOSOCIAL			
DYSPHAGIA SCREENING			
HEENT			
COGNITIVE			
NEURO			
BEHAVIORAL			
RESPIRATORY			
CARDIAC			
PERIPHERAL NEUROVASCULAR			
GASTROINTESTINAL			
GENITOURINARY			
REPRODUCTIVE			
SKIN			
MUSCULOSKELETAL			
NUTRITION			
ACCESS/MONITORING DEVICES			
DRAINS/TUBES			
SAFETY			
DAILY CARE			
Positioning			
Hygiene Care			

Documented in:

- Flowsheets
- Notes

Synonyms:

- Proned
- Proning
- Prone positioning
- Pronation
- Swimmer's position

Image from: <https://pivot.mainlinehealth.org/news/swimmers-position-options-for-positioning-prone-patients/>, Accessed July 5, 2022

Complications

- Inadvertent dislodgement or obstruction of:
 - Endotracheal tube
 - Catheters
 - Monitoring device
- Hemodynamic instability:
 - Arrhythmias
 - Hypotension
 - Hypoxemia
- Pressure injuries
 - Skin breakdown/facial edema

Complications are **rare** in clinical trials and can be **prevented or minimized** with **proper training** and preparation

ICD-10 for prone positioning

Prone positioning (PP) is:

- **Evidence-based**
- **Guideline-recommended**

PP requires:

- Institutional **protocols**
- Trained, **multidisciplinary staff labor**
- Support **equipment** (padding, dressings)
- Attention to prevention/**monitoring of complications**

An ICD-10 procedure code would allow:

- Hospital **tracking to ensure staff/material availability**
- Mechanism for **quality assurance**
- **Research tool** for epidemiologic surveillance, comparative effectiveness