

# Mobilizing Mechanically Ventilated Neuroscience Patients - A Clinical Practice Guideline to 'Get Up and Go'

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# Mobilizing Mechanically Ventilated Neuroscience Patients - A Clinical Practice Guideline to 'Get Up and Go'

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## Abstract

Neuroscience patients often require mechanical ventilation, thus inhibiting patient mobilization beyond turning and repositioning. Bedrest prompts a decline in muscle strength by 1 - 1.5 %/ day and total muscle mass up to 50% in two weeks. These statistics prompted staff to develop a multidisciplinary clinical practice guideline for mobilizing mechanically ventilated patients. The guideline incorporates collaborative plans and actions for nursing, respiratory and rehabilitation services to assist ventilated neuroscience patients to "get up and go." A pre-mobilization evaluation determines readiness and termination criteria to grant team members autonomy to start and stop mobilization. Over the 18 months since guideline inception in the neuroscience ICU, there have been decreases in ventilator associated pneumonias, ventilator days, length of stay, and falls. This poster details mobility challenges faced by critical neuroscience patients, guidelines for mobilizing mechanically ventilated patients and, through case studies, pragmatic strategies learners can incorporate to mobilize ventilated neuroscience patients in any setting.

## Objective #1

Identify mobility challenges faced by critically ill neuroscience patients and the subsequent anatomic and physiologic consequences.

### Etiologies of Immobility

- Fatigue
- Muscle wasting
- Hemodynamic instability
- Respiratory compromise and ↓ oxygen reserves
- Neurological monitoring equipment

### Mobility Challenges

- Issues impacting mobility
  - Hemiplegia of extremities
  - Hemiparesis of extremities
  - Joint subluxation
  - Spatial neglect
  - Cognition impairment
  - Intolerance to activity

### Potential Negative Outcomes

- DVT
- Pressure ulcers
- Pneumonia
- Falls

## Objective #2

Discuss criteria that must be assessed to determine readiness for mobilization of the mechanically ventilated patient.

### Hemodynamic

- Stable heart rhythm
- Blood pressure within ordered parameters

### Respiratory

- Rate < 30 breaths/minute during over breathing of set ventilator settings
- Oxygen saturation > 90% on mechanical ventilation settings
- Ventilator oxygen setting < 50%

### Neurological

- Non-dependence on ventriculostomy
- Stable ICP, CPP, neurological examination

### Presence & Consensus - All of the Following

- Registered Nurse
- Respiratory Therapist
- Physical Therapist
- Occupational Therapist
- Attending Provider (agreement, but not present)

## Objective #3

Review two case studies which demonstrate that early and consistent mobilization prevents muscle wasting and complications and enhances patients' physiological well-being.

### Case Studies

#1 - Young adult patient with Guillian Barre experiencing severe muscle weakness and ventilator dependent respiratory failure

- Early use of tilt table to improve muscle tone
- Early mobilization out of bed
- Ambulation while on tracheotomy collar
- Return to full function at 3 month follow-up

#2 - Middle-aged patient with Hunt Hess Grade IV subarachnoid hemorrhage; muscle wasting due to critical nature of disease and prolonged bedrest

- Active and passive range of motion to limit wrist and foot drop
- Tilt table when hemodynamic stability achieved
- OOB techniques: ceiling lift, stand pivot & weight bearing
- Transfer to rehabilitation hospital
- Minimal ADL assist required at 6 month follow-up



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### Disclosure Information:

The poster presenter has nothing to disclose.



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