

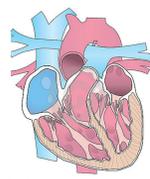
## Negative Impact of Immobility



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Survivors of critical care generally have suboptimal quality of life, enduring neuropsychological impairments and high costs of health care utilization (Adler, J., & Malone, D. 2012.)

Whether healthy or sick, young or old, inactivity produces severe orthostatic hypotension and an increased resting heart rate with decreased cardiac output (Ronnebaum et al, 2012).



<http://anatomyandphysiologybook.blogspot>



<http://uabnews.blogspot>

Pulmonary complications include compression atelectasis and impaired ability to clear the lungs (Vollman, 2010).

Muscle atrophy occurs in all patients on bed rest. When complicated by mechanical ventilation, it severely weakens attempts at weaning. Failure to wean worsens muscle atrophy in a vicious cycle (Mendez-Tellez & Needham, 2012).



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## Obstacles to Early Progressive Mobility

- Patient pain and discomfort
- Hemodynamic instability
- Lack of staff
- Lack of equipment
- Large size of many patients
- Sedation
- Staff lack of knowledge

## Staff Survey Pre-Implementation of EPM

A survey of 54 staff members were surveyed. Forty six were nurses, four were nursing assistants and four were physicians.

94% of our staff considered early progressive mobility very beneficial.

76% were very concerned that our ICU patients were not mobile enough.

72% believed that increased mobility would decrease length of hospital stay.

65% felt we lacked enough resources to initiate progressive mobility.

## Hypothesis of this Ongoing Study

Improved care and decreased length of stay for our patients.

Reduced physical strain for our care-givers because patients will be stronger before they are expected to get out of bed.

Adequate resources to initiate EPM due to increased strength of patients.



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## Early Progressive Mobility In the Intensive Care Unit

Intensive care patients have high morbidity and mortality with extraordinary costs of care resulting in very poor functional outcomes. After one week of bed rest, muscle strength may decrease as much as 20%, with an additional 20% loss of remaining strength each subsequent week (Perme & Chandrashekar, 2009).

Implementation of a nurse-driven early, progressive mobility program in the ICU can significantly decrease ICU length of stay as well as the overall hospitalization (Winkelman et al, 2012). Unfortunately, range of motion exercises done in bed, while necessary for maintaining flexibility, have little effect on physical strength. The body doesn't need to adjust for orthostatic changes on bed rest (Perme & Chandrashekar, 2009) thus greatly weakening a patient.

Early Progressive Mobility (EPM) is a series of planned movements in a sequential manner beginning at a patient's current mobility status. EPM rebuilds up the body beginning with simple changes of position. Gradual and safe advancement of cardiovascular physical fitness can make a world of difference for the ICU client. This poster provides an exemplar of how nurses at the bedside translate and apply scientific knowledge from evidence based research to improve patient quality and safety.

## General Goals of Early Progressive Mobility

### Goals include:

- Returning the patient to his/her baseline state.
- Increasing psychosocial well being.
- Preventing pressure ulcers.
- Reducing ICU and overall hospital length of stay (LOS).
- Improving satisfaction for patients, family and significant others.
- Decreasing time intubated patients spend on a ventilator
- Preventing ventilator-acquired pneumonia for intubated patients.
- Reducing care-giver injuries.

## Implementation at Saint Peter's University Hospital: A Two-Step Nurse-Driven Protocol

### Step 1: Safety Screening — MOVE (an AACN Pearl)

All ICU patients are evaluated within twelve hours of admission and then at four-hour intervals or more frequently

#### M: Myocardial stability

- No evidence of active myocardial ischemia for 24 hours.
- No dysrhythmia requiring a new medication for 24 hrs.

#### V: Vasopressor(s) minimal

- No increase of any vasopressor for 2 hours

#### O: Oxygenation adequate on

- $FiO_2 < 0.6$
- $PEEP < 10$  cm H<sub>2</sub>O

#### E: Engages to voice:

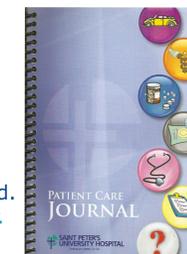
- Patient responds to verbal stimulation

## Step 2: Initiation of Mobility

Many protocols call for "levels" of mobility. A protocol may have four or six levels with various combinations of patient objectives. At Saint Peter's University Hospital, we describe the progress as patient goals in keeping with our approach to patient-centered care and patient participation. Each patient in ICU is offered a Patient Care Journal. The Journal has several functions. One of these functions is to engage the patient and significant others to record patient goals and progress toward them.

### patient Goals

1. Head of the bed at 45° to 65°.
2. Head of the bed at 45° to 65° with legs dependent.
3. Chair position in bed.
4. Dangle legs on the side of the bed.
5. Stands at bedside independently.
6. Can march in place at bedside for 30 seconds or more.
7. Can pivot into a chair next to the bed.
8. Can sit in chair 30 minutes or longer.
9. Can ambulate a few steps.
10. Can ambulate a few feet or more.



Head of bed at 45 degrees.



Bed in chair position.



Dangling



Sitting in chair.



Ambulating.

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