

The dangers of immobility

Because many patients in intensive care units (ICUs) are confined to bed and sedated, they get little activity. In conjunction with their acute illness, immobility can cause deconditioning of organ systems.

Bed rest triggers diaphragmatic weakness up to 18 hours after mechanical ventilation begins. Such weakness causes some ventilated ICU patients to lose up to 25% of peripheral muscle strength within 4 days and 18% of body weight by discharge. Critically ill patients on strict bed rest can lose 1% to 1.5% per day of total body mass and up to 50% in 2 weeks. Some patients also suffer from depression, pressure ulcers, muscular atrophy, and deconditioning from atelectasis, pneumonia, orthostatic hypotension, and deep vein thrombosis (DVT).

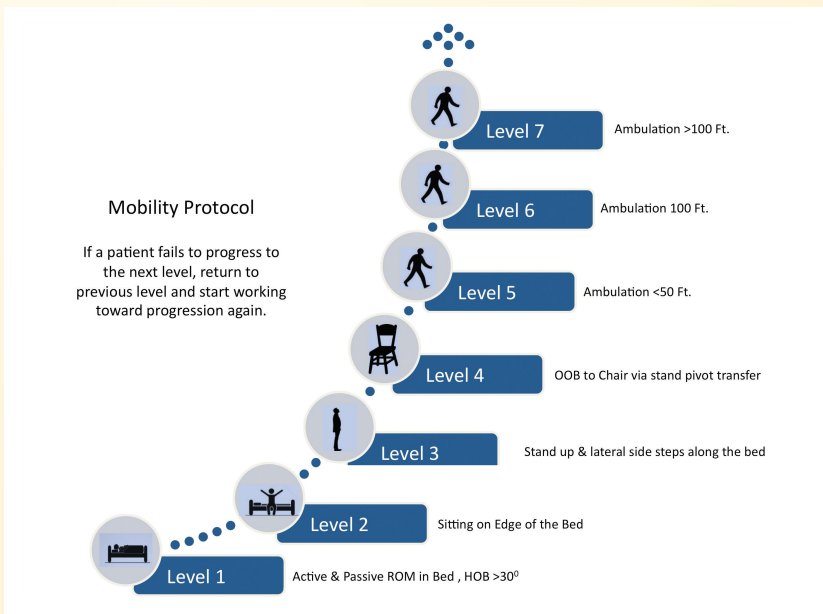
Respiratory and vascular effects

Respiratory effects of sustained bed rest include atelectasis, pneumonia, and decreases in maximal inspiratory pressure and forced vital capacity. Many patients still experience these effects even 1 year after their ICU stays, with decreased exercise tolerance and poor physical function. Mechanical ventilation beyond 1 week is an independent risk factor for ICU-acquired muscle weakness. Such muscle weakness can lead to ventilator-associated pneumonia, which occurs in 9% to 27% of ventilated patients. Mortality ranges from 33% to 55%.

Mechanically ventilated patients also are at risk for venous thromboembolism (VTE). The DVT rate for patients on mechanical ventilation longer than 7 days is up to 24%, despite prophylaxis. Approximately 60% of trauma patients develop a DVT within 2 weeks of hospital admission. Among the general surgical population, VTE may occur in up to 40% of patients who don't receive prophylaxis.

Mobility protocol

The mobility protocol shown here can be used in intensive care units and acute-care settings.



Courtesy of the author