



# The Effects of Early Mobility in Reducing Length of Stay for Adult Patients in the Intensive Care Unit due to Trauma: A Systematic Review

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## INTRODUCTION

Patients in the ICU due to trauma are at a high risk for complications associated with immobility. They often have extensive orthopedic and neurological injuries. There is no formal definition for the term “early”, therefore time frames vary when it comes to the start of a mobility program. An early mobility program typically consists of an exercise progression that begins in bed and works toward an end goal of ambulation. Early mobility typically begins when a patient demonstrates physiologic stability.

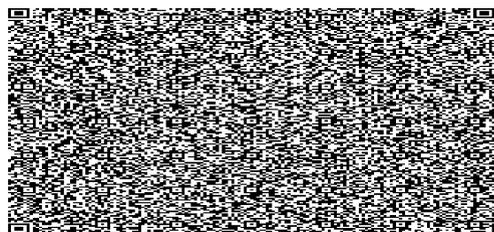
## PURPOSE

The purpose of this study was to determine if mobility is an effective intervention to reduce length of stay (LOS) for adult (> 18 y/o) patients in the Intensive Care Unit (ICU) due to trauma.

## METHODS

A literature search of ProQuest, CINAHL, Healthsource, and PubMed was conducted using search terms: (“physical therapy” OR “physiotherapy”) AND (“Intensive Care Unit” OR “ICU”) AND (“length of stay” OR “LOS”) AND (“trauma”) NOT (“pediatric” OR “neonatal”). Search limits included English, peer reviewed, and published between 2008-2018. The selection criteria consisted of intensive care trauma patients, adults 18 and over, mobility as an intervention, and outcome measures of hospital and ICU LOS. Two reviewers independently assessed each study for methodological quality and came to a consensus based on Sackett guidelines. Additionally, three reviewers looked at each article for results and key findings.

## REFERENCES



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Records identified through database searching  
(n = 305)

Records after duplicates removed  
(n = 286)

Records screened  
(n = 286)

Full-text articles assessed for eligibility  
(n = 31)

Studies included  
(n = 5)

Author (Year)	Sackett Level of Evidence	Study Design
Booth K et al ('16)	4	Pre and Post Intervention
Clark DE et al ('13)	3b	Case Control Study
Gillick BT et al ('11)	3b	Case Control Study
Pandullo SM et al ('15)	4	Retrospective Study
Sottile PD et al ('15)	4	Retrospective Study

## RESULTS

None of the 5 articles had a clear definition of early mobility. 2 of 5 articles used a specific protocol to determine patient appropriateness for mobility. 2 out of 5 articles had a specific treatment program that was implemented as quality improvement projects. The other 3 articles were completed retrospectively and no changes were made to usual ICU care.

All 5 articles involved a physical therapist in their mobility program. Samples ranged from 30 to 2,167 participants. There were 2 studies done in the neuro/trauma ICU, 1 in the burn/trauma ICU, 1 in the neurological ICU, and 1 in the ICU.

Only 2 out of 5 articles reported on mechanism of injury and 4 out of 5 articles reported specific diagnoses. Severity of injury was identified in 4 out of 5 studies with either the injury severity scale or the Glasgow Coma Scale used. All articles reported on hospital LOS and ICU LOS with no significant difference found for hospital LOS in 4 out of 5 studies. All 5 articles reported no significant difference for ICU LOS.

## CONCLUSION

There was weak to moderate evidence available on the topic of early mobilization for trauma patients. PT was involved in the ICU care of all trauma patients included. Although statistically insignificant, hospital and ICU length of stay improved in all articles. Limitations included study designs, small sample sizes, limited definitions of protocols, mechanism of injury, definition of early mobility as a treatment. Further research should be done to address these limitations.

## CLINICAL RELEVANCE

Even though ICU and Hospital LOS results were found to be insignificant, early mobility can still be considered as a physical therapy treatment for patients following trauma. All studies showed early mobility can be safe in a trauma patient and can decrease length of stay. PT's play a vital role in the development of pre mobility guidelines and early mobility protocols for the trauma patient in order to increase safety and improve hospital outcomes.