



Canadian Agency for
Drugs and Technologies
in Health

RAPID RESPONSE REPORT: SUMMARY OF ABSTRACTS



TITLE: Mobilization of Adult Inpatients in Hospitals or Long-Term/Chronic Care Facilities: Benefits and Harms, Safety, and Guidelines

DATE: 25 February 2014

RESEARCH QUESTIONS

1. What are the benefits and harms associated with mobilization of adult inpatients in hospitals or long-term/chronic care facilities?
2. What are the safety issues surrounding mobilization of adult inpatients in hospitals or long-term/chronic care facilities?
3. What are the evidence-based guidelines associated with mobilization of adult inpatients in hospitals or long-term/chronic care facilities?

KEY MESSAGE

Two systematic reviews, one randomized controlled trial, and five non-randomized studies were identified regarding benefits and harms associated with mobilization of adult inpatients in hospitals or long-term/chronic care facilities.

METHODS

A focused search (with main concepts appearing in title or as a major subject heading) was conducted on key resources including MEDLINE, PubMed, The Cochrane Library (2014, Issue 2), University of York Centre for Reviews and Dissemination (CRD) databases, Canadian and major international health technology agencies, as well as a focused Internet search. No methodological filters were applied to limit retrieval by publication type. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2009 and February 11, 2014. Internet links were provided, where available.

The summary of findings was prepared from the abstracts of the relevant information. Please note that data contained in abstracts may not always be an accurate reflection of the data contained within the full article.

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RESULTS

Rapid Response reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by randomized controlled trials, non-randomized studies, and evidence-based guidelines

Two systematic reviews, one randomized controlled trial, and five non-randomized studies were identified regarding benefits and harms associated with mobilization of adult inpatients in hospitals or long-term/chronic care facilities. No relevant health technology assessments or evidence-based guidelines were identified.

Additional references of potential interest are provided in the appendix.

OVERALL SUMMARY OF FINDINGS

Four studies^{1,4,6,7} investigated mobilization strategies for elderly inpatients. One systematic review¹ examined the effectiveness of early physical rehabilitation programs for geriatric patients who were hospitalized. Patients who were involved in either multidisciplinary or exercise programs were less likely to be discharged from hospital to a nursing home than were geriatric inpatients who received usual care. One non-randomized study⁴ evaluated the frequency and duration of mobilization of older patients in acute care by nurses. Standing and transferring were the most commonly observed mobilization events. Patients who were unable to move themselves were mobilized less frequently than patients who had mobility, and most instances were initiated by patients, not by the nursing staff. One non-randomized study⁶ assessed the effects of a strength training program for nursing home residents with impaired mobility. After eight weeks, mobility and muscle strength in the limbs had improved. Other quality of life measures did not change. In another study,⁷ lower extremity strength training was added to the mobilization protocol for elderly hospitalized adults to determine the effect on falls. One assisted fall was recorded in the intervention group.

Four studies^{2,3,5,8} investigated mobilization strategies for adult inpatients. One systematic review² examined the effectiveness of early mobilization of critically ill patients in the intensive care unit (ICU). Few studies were identified for inclusion in the review; however, those that were indicated that early mobilization and physical therapy were safe and could have an impact on functional outcomes. One randomized controlled trial³ compared the effect of an early mobilization protocol with standard physical therapy on respiratory and peripheral muscles of inpatients. There were significant changes in inspiratory and peripheral muscle strength in the early mobilization group. There were no significant differences between groups in length of ICU stay or length of hospital stay. One non-randomized study⁵ evaluated the mobility practices of one ICU during a 24 hour period. Observed mobilization activities included in-bed exercises, sitting over the side or out of bed, standing, and walking. Few adverse events were recorded. In one non-randomized study,⁸ early rehabilitation (including chair sitting, tilting, and walking) was provided to patients who were in the ICU for seven or more days and were mechanically ventilated for at least two days. Chair sitting was the most frequently reported intervention and was associated with a significant decline in heart rate and respiratory rate. The authors concluded that early intervention was safe and feasible for patients in the ICU.

REFERENCES SUMMARIZED

Health Technology Assessments

No literature identified.

Systematic Reviews and Meta-analyses

1. Kosse NM, Dutmer AL, Dasenbrock L, Bauer JM, Lamoth CJ. Effectiveness and feasibility of early physical rehabilitation programs for geriatric hospitalized patients: a systematic review. *BMC Geriatr.* 2013;13:107, 2013.
[PubMed: PM24112948](#)
2. Adler J, Malone D. Early mobilization in the intensive care unit: a systematic review. *Cardiopulm Phys Ther J [Internet].* 2012 Mar [cited 2014 Feb 20];23(1):5-13. Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3286494>
[PubMed: PM22807649](#)

Randomized Controlled Trials

3. Dantas CM, Silva PF, Siqueira FH, Pinto RM, Matias S, Maciel C, et al. Influence of early mobilization on respiratory and peripheral muscle strength in critically ill patients. *Rev Bras Ter Intensiva.* 2012 Jun;24(2):173-8.
[PubMed: PM23917766](#)

Non-Randomized Studies

4. Doherty-King B, Yoon JY, Pecanac K, Brown R, Mahoney J. Frequency and duration of nursing care related to older patient mobility. *J Nurs Scholarsh.* 2014 Jan;46(1):20-7.
[PubMed: PM24112775](#)
5. Berney SC, Harrold M, Webb SA, Seppelt I, Patman S, Thomas PJ, et al. Intensive care unit mobility practices in Australia and New Zealand: a point prevalence study. *Crit Care Resusc.* 2013 Dec;15(4):260-5.
[PubMed: PM24289506](#)
6. Krist L, Dimeo F, Keil T. Can progressive resistance training twice a week improve mobility, muscle strength, and quality of life in very elderly nursing-home residents with impaired mobility? A pilot study. *Clin Interv Aging [Internet].* 2013 [cited 2014 Feb 20];8:443-8. Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3639017>
[PubMed: PM23637524](#)
7. Padula CA, Disano C, Ruggiero C, Carpentier M, Reppucci M, Forloney B, et al. Impact of lower extremity strengthening exercises and mobility on fall rates in hospitalized adults. *J Nurs Care Qual.* 2011 Jul;26(3):279-85.
[PubMed: PM21209594](#)
8. Bourdin G, Barbier J, Burle JF, Durante G, Passant S, Vincent B, et al. The feasibility of early physical activity in intensive care unit patients: a prospective observational one-center study. *Respir Care.* 2010 Apr;55(4):400-7.

[PubMed: PM20406506](#)

Guidelines and Recommendations

No literature identified.

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APPENDIX – FURTHER INFORMATION:

Review Articles

9. Hodgson CL, Berney S, Harrold M, Saxena M, Bellomo R. Clinical review: early patient mobilization in the ICU. *Crit Care*. 2013 Feb 28;17(1):207.
[PubMed: PM23672747](#)
10. Kalisch BJ, Lee S, Dabney BW. Outcomes of inpatient mobilization: a literature review. *J Clin Nurs*. 2013 Sep 13.
[PubMed: PM24028657](#)
11. Kalisch BJ, Dabney BW, Lee S. Safety of mobilizing hospitalized adults: review of the literature. *J Nurs Care Qual*. 2013 Apr;28(2):162-8.
[PubMed: PM23232212](#)
12. O'Connor ED, Walsham J. Should we mobilise critically ill patients? A review. *Crit Care Resusc*. 2009 Dec;11(4):290-300.
[PubMed: PM20001881](#)

Additional References

13. Asher A. Equipment used for safe mobilization of the ICU patient. *Crit Care Nurs Q*. 2013 Jan;36(1):101-8.
[PubMed: PM23221446](#)
14. Dammeyer J, Dickinson S, Packard D, Baldwin N, Ricklemann C. Building a protocol to guide mobility in the ICU. *Crit Care Nurs Q*. 2013 Jan;36(1):37-49.
[PubMed: PM23221440](#)
15. Dammeyer JA, Baldwin N, Packard D, Harrington S, Christofferson B, Christopher J, et al. Mobilizing outcomes: implementation of a nurse-led multidisciplinary mobility program. *Crit Care Nurs Q*. 2013 Jan;36(1):109-19.
[PubMed: PM23221447](#)
16. Dang SL. ABCDEs of ICU: early mobility. *Crit Care Nurs Q*. 2013 Apr;36(2):163-8.
[PubMed: PM23470701](#)
17. Lipshutz AK, Gropper MA. Acquired neuromuscular weakness and early mobilization in the intensive care unit. *Anesthesiology*. 2013 Jan;118(1):202-15.
[PubMed: PM22929731](#)
18. Vollman KM. Understanding critically ill patients hemodynamic response to mobilization: using the evidence to make it safe and feasible. *Crit Care Nurs Q*. 2013 Jan;36(1):17-27.
[PubMed: PM23221438](#)
19. Rose DJ. Reducing the risk of falls among older adults: the Fallproof Balance and Mobility Program. *Curr Sports Med Rep*. 2011 May;10(3):151-6.
[PubMed: PM21623303](#)