

Short Question:

Specific Question:

Does standing a patient on the day of surgery following a primary unilateral total hip or knee replacement reduce the length of hospital stay?

Clinical bottom line

There is limited, low quality evidence to support reduction in length of stay (LOS) following same day mobilisation in patients undergoing primary Total Hip Replacements (THR) and primary Total Knee Replacements (TKR). However, as the previous CAT concluded, there is evidence to support same day mobilisation as part of a multidisciplinary enhanced recovery protocol, to reduce LOS

Clinical bottom line CAT 2010: "There is evidence to show that standing a patient on the day of surgery following a primary unilateral total hip or knee replacement does reduce the length of hospital stay, however the evidence is from one randomised controlled trial of 87 subjects & one non randomised comparison study of 130 subjects. The studies identified also utilised an accelerated package of care including pre-operative education, pre-operative discharge planning, an anaesthetic & postop management approach to ensure minimal post-op bleeding, adequate analgesia, adequate control of nausea, adequate hydration & nutrition. Thus length of stay was reduced when combined with a complete package of pre and post op care & management."

Why is this important?

Enhanced recovery protocols are now common place in elective orthopaedic surgery however understanding of the impact provided by individual aspects of these programmes is not clearly defined. It is suggested that mobilisation on the same day as surgery is beneficial in reduction of LOS, reducing pain and increasing ROM, however there are practical issues relating to implementation such as time of day, availability of therapy staff and adherence due to post-operative nausea and vomiting or medical stability.

Inclusion Criteria

Adults aged 18-80 who have received a primary unilateral THR or TKR

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Search – 2010- 2017

Updated search: October 2017

	Description	Search terms
Population and Setting	Adults aged 18-80 who have received a primary unilateral THR or TKR	Total hip replacement, Total knee replacement, Arthroplasty
Intervention or Exposure (i.e. what is being tested)	Standing or walking the patient on the day of surgery.	Weight Bearing, Early Ambulation, stand, mobilisation, fast track, day of surgery / operation, same day.
Comparison, if any	Standing or walking the patient on day 1 or 2 after surgery or routine care where this is the case	
Outcomes of interest	Length of hospital stay, length of hospital care, time to discharge.	Length of stay, Time to discharge, Length of hospital care, In patient stay.
Types of studies	Systematic reviews, rcts, cohort studies	

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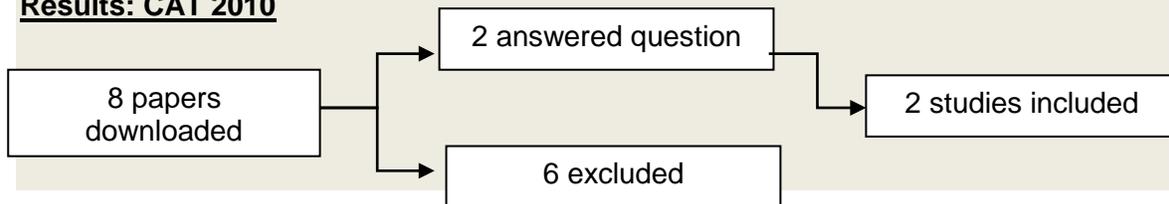
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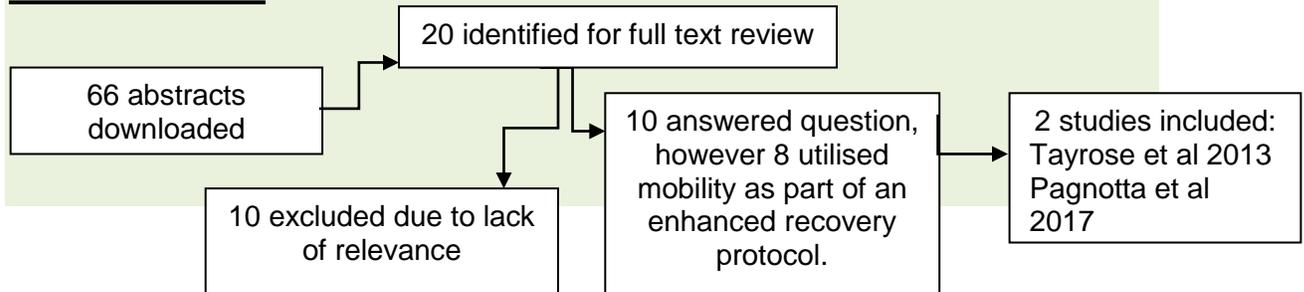
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Results: CAT 2010



Results: CAT 2017



First Author, year and type of study	Population and setting	Intervention or exposure tested	Study results	Assessment of quality and comments
Tayrose et al 2013	USA Retrospective cohort	Early morning THR and TKR mobilised on day 0, (n=331) Control: Day 1 (n=569).	THR: Reduction in LOS by 0.83 days (4.63 days to 3.80 - significant) p<0.001 TKR Reduction in LOS by 0.24 days (4.13 days to 3.89) in TKR When combined: reduction in LOS by 0.54 days (4.39 days to 3.85) p,0.001	Non randomised with selected cases, however baseline analysis similar. Patients on rapid mobilisation were operated before those on day 1 programme. Change in TKR

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				LOS is very small (P=0.16). There were also changes in the hospital social care programme during the study time that could have influenced results.
Pagnotta et al 2017	USA. Retrospective cohort	TKR Early morning surgeries mobilised on day 0, (n=30) (selected patients.) Control: Day 1 (n=45)	0.5 day reduction in LOS (3.6 days to 3.1) p = 0.0261	Non randomised with selected cases. Low study and control numbers. Early mob patients had lower average age and lower BMI than control. There were 3 different analgesic protocols used, with no details on use in test vs control groups.

Conclusions

There is limited, poor quality evidence that suggests mobilisation on day of surgery following THR or TKR can reduce length of stay. The two studies that solely focused on mobilisation were flawed in methodology and all patients were selected by surgeons or by time of operation, meaning there was no randomisation in these retrospective cohort studies.

Tayrose et al (2013) demonstrated a significant reduction in LOS for THR but minimal reduction in TKR. There was also systemic change in the social care and discharge planning procedure in the hospital at the time of the study which was reported as a possible confounding variable, influencing length of stay.

Pagnotta et al (2017) retrospectively studied as small group of patients who were selected for rapid rehabilitation by surgeon's preference and time of surgery. There was a 0.5 day reduction in length of stay but there are variables that are not detailed clearly

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including three different pain management protocols with no details on the use in control or test groups, making it difficult to conclude the significance of early mobilisation alone.

There is good support from several large retrospective cohort studies that day of surgery mobilisation can decrease length of hospital stay when embedded within an enhanced recovery protocol which is more common in clinical practice. These protocols generally consisting of a mixture of the following; pre operation education groups, anaesthetic type and local infiltration, analgesic and antiemetic prophylaxis, autologous blood transfusion, catheter use, day 0 mobilisation. (Gwynne-Jones et al 2017) (Hartog et al 2013)(Karim et al 2016)Wellman et al 2011)(Mewmpel & Walmsley 2015) (Robbins et al 2014). Unfortunately it is not possible to ascertain the role of same day mobilisation in these studies as the enhanced recovery is carried as a package, specific analysis of individual elements is not well documented.

Tweet

There may some benefit in getting up and about on the same day as total hip and knee replacements surgery but evidence still low quality

References:

New References:

- Gwynne-Jones et al 2017 Enhanced Recovery After Surgery for Hip and Knee Replacements. *Orthopaedic Nursing* March/April 2017 Volume 36 Number 3
- Hertog et al 2012 Pathway-controlled fast-track rehabilitation after total knee arthroplasty: a randomized prospective clinical study evaluating the recovery pattern, drug consumption, and length of stay. *Arch Orthop Trauma Surg* (2012) 132:1153–1163
- Hertog et al 2013 Reduced length of hospital stay after the introduction of a rapid recovery protocol for primary THA procedures *Acta Orthopaedica*, 84:5, 444-447
- Karim et al 2016 Does Accelerated Physical Therapy After Elective Primary Hip and Knee Arthroplasty Facilitate Early Discharge? *Am J Orthop*. 2016;45(6):E337-E342.
- Maempel & Walmsley 2015 Enhanced recovery programmes can reduce length of stay after total knee replacement without sacrificing functional outcome at one year. *Ann R Coll Surg Engl* 2015; 97: 563–567
- Pagnotta et al 2017 The Effect of a Rapid Rehabilitation Programme on Patients undergoing Unilateral Total Knee Arthroplasty. *Orthopaedic Nursing* March/April 2017 Volume 36 Number 2

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- Robbins C et al 2014 A Multidisciplinary Total Hip Arthroplasty Protocol With Accelerated Postoperative Rehabilitation: Does the Patient Benefit? *Am J Orthop.* 2014;43(4):178-181
- Tayrose G et al 2013 Rapid Mobilization Decreases Length-of-Stay in Joint Replacement Patients. *Bulletin of the Hospital for Joint Diseases* 2013;71(3):222-6
- Wellman et al Implementation of an accelerated mobilization protocol following primary total hip arthroplasty: impact on length of stay and disposition *Curr Rev Musculoskelet Med* (2011) 4:84–90.

Previous References:

Larsen K Sorenson OG Hansen TB Thomsen PB Soballe K 2008 Accelerated perioperative care and rehabilitation intervention for hip and knee replacement is effective a randomised clinical trial involving 87 patients with 3 months of follow-up. *Acta Orthopaedica* 79(2) 149-159.

Isaac D Falode T Lui P l'Anson H Dillow K Gill P 2005 Accelerated rehabilitation after total knee replacement. *The Knee* 12 346-350.

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