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ACE REPORT
ADVANCED CLINICAL EVIDENCE REPORT

Fixed bearing for TKR provides better results for individuals aged 70 and above

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PubMed Link

Therapy
Level I - Randomized Trial

Jolles BM, Grzesiak A, Eudier A, Dejnabadi H, Voracek C, Pichonnaz C, Aminian K, Martin E

A randomised controlled clinical trial and gait analysis of fixed- and mobile-bearing total knee replacements with a five-year follow-up

J Bone Joint Surg Br. 2012 May;94(5):648-55

Synopsis

55 patients, scheduled to undergo total knee replacement, were randomized to receive either fixed or mobile-bearings. The results from a 5 year follow-up indicated that elderly patients (>70 years of age) with fixed bearings had better improvements in gait parameters in comparison to those with mobile bearings. These results was in fact reversed for patients less than 70 years of age, as they performed best with mobile bearings.

Funding:	Non-Industry funded
Sponsor:	Swiss National Science Foundation
Conflicts:	None disclosed

Why was this study needed now?

Outcome after total knee replacement can be addressed using a variety of methods. Therefore, it is often very difficult to compare the results from different studies. Laboratory measures can be used; however, they have been found to be time consuming and costly. On the other hand, a portable ambulatory gait system has been developed that allows for long term monitoring. Thus, the aim of this randomized trial was to compare the outcome of TKR in patients who received either fixed or mobile bearings with the ambulatory gait system.

What was the principal research question?

Does the ambulatory gait system identify differences between fixed and mobile bearing TKR designs in patients at long term follow-up?

Population:	55 patients scheduled to undergo total knee replacement
Intervention:	Total knee replacement with fixed bearings (n=30)
Comparison:	Total knee replacement with mobile bearings (n=26)
Outcomes:	EuroQol questionnaire, Western Ontario and McMaster Universities osteoarthritis index, Knee Society score, visual analogue scales for pain and stiffness and gait analysis
Methods:	RCT; Centre Hospitalier Universitaire Vaudois and University of Lausanne, Lausanne, Switzerland
Time:	5 year follow-up

What were the important findings?

- Mean VAS stiffness score was significantly lower in the fixed bearing group (mean = 1.0) than the mobile bearing group (mean = 2.4) at one year ($p<0.01$). This difference was not evident at 5 year follow-up
- Mean EQ-5D score was 75.3 in the mobile bearing group and 79.9 in the fixed bearing group at 5 years. This difference was not significant ($p=0.32$)
- Mean KSS score was 94.4 in the mobile bearing group and 93.1 in the fixed bearing group at 5 years. This difference was not significant ($p=0.44$)
- Gait analysis revealed no significant differences between the two groups ($p>0.05$). However, it was found that patients older than 70 years displayed significantly better results with fixed bearings.

What should I remember most?

The results of this study suggest that no differences in regards to function or pain exists between fixed and mobile bearings; however, fixed bearing provides better results for individuals aged 70 years and older.

How will this affect the care of patients?

Although these findings suggest that fixed bearings provide better results for individuals aged 70 and greater, extended randomized trials are still needed for any conclusive decisions.

How to cite:

Fixed bearing for TKR provides better results for individuals aged 70 and above. OrthoEvidence Advanced Clinical Evidence Report. In: Ortho Evidence. Created Jun 12, 2012. Last modified Oct 01, 2012. Retrieved Jun 05, 2013 from http://www.myorthoevidence.com/?section=15&id=3055.

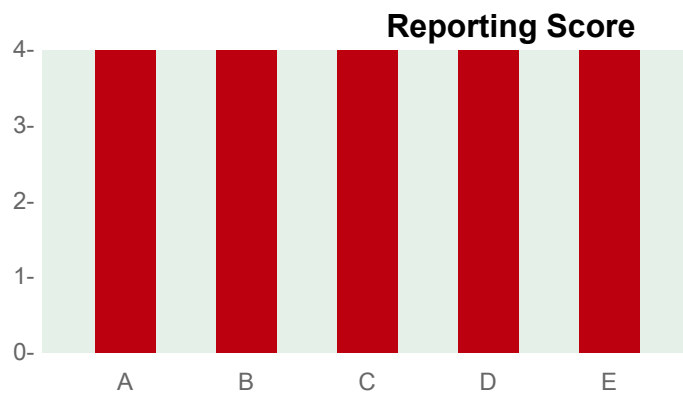
Why is this study believable? (Risk of Bias)

1. Was the allocation sequence adequately generated?	**YES**
2. Was allocation adequately concealed?	**YES**
3. Blinding Surgeons: Was knowledge of the allocated interventions adequately prevented?	**NO**
4. Blinding Outcome Assessors: Was knowledge of the allocated interventions adequately prevented?	**YES**
5. Blinding Patients: Was knowledge of the allocated interventions adequately prevented?	**YES**
6. Was loss to follow-up (missing outcome data) infrequent?	**YES**
7. Are reports of the study free of suggestion of selective outcome reporting?	**YES**
8. Were outcomes objective, patient-important and assessed in a manner to limit bias (ie. duplicate assessors, Independent assessors)?	**YES**
9. Was the sample size sufficiently large to assure a balance of prognosis and sufficiently large number of outcome events?	**NO**
10. Was investigator expertise/experience with both treatment and control techniques likely the same (ie.were criteria for surgeon participation/expertise provided)?	**YES**

TOTAL SCORE: 8/10

YES = 1 | UNCERTAIN = 0.5 | NO = 0

Reporting Score



REPORTING QUALITY
20/20

A) Randomization /4
B) Outcome Measurements /4
C) Inclusion/Exclusion /4
D) Therapy Description /4
E) Statistic /4