



TITLE: Smith & Nephew Journey Total Knee Replacement Systems: Clinical and Cost-Effectiveness and Guidelines

DATE: 19 March 2015

RESEARCH QUESTIONS

1. What is the clinical effectiveness of Smith & Nephew Journey total knee replacement systems in patients requiring total knee replacement?
2. What is the cost-effectiveness of Smith & Nephew Journey total knee replacement systems in patients requiring total knee replacement?
3. What are the evidence-based guidelines associated with the use of Smith & Nephew Journey total knee replacement systems in patients requiring total knee replacement?

KEY FINDINGS

Five non-randomized studies were identified regarding Smith & Nephew Journey total knee replacement systems in patients requiring total knee replacement.

METHODS

A limited literature search was conducted on key resources including PubMed, The Cochrane Library (2015, 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 filters were applied to limit the retrieval by study type. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2005 and March 5, 2015. 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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SELECTION CRITERIA

One reviewer screened citations and selected studies based on the inclusion criteria presented in Table 1.

Population	Patients requiring total knee replacement
Intervention	Smith & Nephew Journey total knee replacement systems
Comparator	Alternative total knee replacement systems (e.g., Stryker Triathlon Total Knee and the Zimmer NexGen) No comparator
Outcomes	Clinical effectiveness (e.g., longevity, wear, and revision rate; comparative effectiveness, safety – patient benefits and harms) Cost-effectiveness Guidelines
Study Designs	Health technology assessment reports, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies, economic evaluations, and evidence-based guidelines

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, economic evaluations, and evidence-based guidelines.

Five non-randomized studies were identified regarding Smith & Nephew Journey total knee replacement systems in patients requiring total knee replacement. No relevant health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, economic evaluations, or evidence-based guidelines were identified.

Additional references of potential interest are provided in the appendix.

OVERALL SUMMARY OF FINDINGS

Five non-randomized studies¹⁻⁵ were identified regarding Smith & Nephew Journey total knee replacement systems in patients requiring total knee replacement. One study¹ reported high complication rates (e.g., 1.65 complications requiring major revision surgery per 100 component years) with the Journey bicruciate substituting total knee replacement. Two studies^{2,3} comparing Journey Bicruciate Stabilised knee replacement systems to Scorpio Non-Restrictive Geometry reported better clinical results in the Journey group; in both studies, patients with Journey knee replacements experienced more stiffness. Another study⁴ reported good clinical and radiological results with Journey; however, the authors reported that these outcomes did not differ significantly from conventional knee replacements. One study⁵ reported iliotibial band friction syndrome in 77 out of 1070 knees with Journey knee replacements.

REFERENCES SUMMARIZED

Health Technology Assessments

No literature identified.

Systematic Reviews and Meta-analyses

No literature identified.

Randomized Controlled Trials

No literature identified.

Non-Randomized Studies

1. Christen B, Neukamp M, Aghayev E. Consecutive series of 226 journey bicruciate substituting total knee replacements: early complication and revision rates. *BMC Musculoskelet Disord* [Internet]. 2014 [cited 2015 Mar 17];15:395. Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4289326>
[PubMed: PM25424844](#)
2. Digennaro V, Zambianchi F, Marcovigi A, Mugnai R, Fiacchi F, Catani F. Design and kinematics in total knee arthroplasty. *Int Orthop* [Internet]. 2014 Feb [cited 2015 Mar 17];38(2):227-33. Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3923950>
[PubMed: PM24420156](#)
3. Mugnai R, Digennaro V, Ensini A, Leardini A, Catani F. Can TKA design affect the clinical outcome? Comparison between two guided-motion systems. *Knee Surg Sports Traumatol Arthrosc*. 2014 Mar;22(3):581-9.
[PubMed: PM23632757](#)
4. Dutka J, Sorysz T, Dobosz B, Skowronek M. Total knee arthroplasty with application of anatomic endoprosthesis journey. Clinical and radiological assessment in a 2-year follow-up. *Pol Orthop Traumatol*. 2012;77:1-4.
[PubMed: PM23306278](#)
5. Luyckx L, Luyckx T, Bellemans J, Victor J. Iliotibial band traction syndrome in guided motion TKA. A new clinical entity after TKA. *Acta Orthop Belg*. 2010 Aug;76(4):507-12.
[PubMed: PM20973358](#)

Economic Evaluations

No literature identified.

Guidelines and Recommendations

No literature identified.

PREPARED BY:

Canadian Agency for Drugs and Technologies in Health

Tel: 1-866-898-8439

www.cadth.ca

APPENDIX – FURTHER INFORMATION:

Additional References

6. Total knee replacement using patient-specific templates [Internet]. Plymouth Meeting (PA): ECRI Institute; 2011. (Emerging technology evidence report) [updated 2014; cited 2015 Mar 17]. Available from: <http://www.ecri.org>. Subscription required.
7. Genesis II total knee system with oxinium femoral implants (Smith and Nephew Inc.) for total knee arthroplasty. Lansdale (PA): HAYES, Inc. 2012. (Healthcare Technology Brief) Structured abstract available from: <http://www.crd.york.ac.uk/crdweb/ShowRecord.asp?ID=32012000143#.VPhrPy6dDNQ> [cited 2015 Mar 17]
8. Knee Arthroplasty: newer techniques under development, improvements under way. Health Technology Trends [Internet]. 2012 Feb [cited 2015 Mar 17]; 24(2):1-3, 11-12. Available from: <http://www.ecri.org>. Subscription required.