

Arthroplasty versus fusion in single-level cervical degenerative disc disease (2012)

Toon FM Boselie, Paul C Willems, Henk van Mameren, Rob de Bie, Edward C Benzel, Henk van Santbrink



COCHRANE BACK REVIEW GROUP
The best evidence in back and neck pain care



**Institute
for Work &
Health**

Research Excellence
Advancing Employee
Health

Copyright © 2014

Overview of the study

Objectives

- To assess the effects of arthroplasty versus fusion for radiculopathy or myelopathy, or both due to single level cervical degenerative disc disease

Methods

- Evidence current up to 25 May 2011
- Participants: Adults (≥ 18 years of age) with symptomatic single level cervical degenerative disc disease
- Intervention: Single level anterior cervical discectomy with fusion vs. Anterior cervical discectomy with the placement of an artificial cervical disc
- Outcomes measured:
 - Primary outcomes: arm and neck pain, neck-related functional status, patient satisfaction, neurological outcomes, global health status
 - Secondary outcomes: radiological signs of fusion, revision surgery, mobility on flexion-extension x-rays, work disability

Results & Conclusion

- 9 studies (2400 participants) included

Treatment	Evidence	Quality of evidence
Arthroplasty	Small but significant difference in effectiveness for alleviation of arm pain at one to two years	Low
	- Small difference in effectiveness for neck-related functional status at one to two years - Small difference in neurological outcomes	Moderate
Arthroplasty, fusion	Large and statistically significant difference in segmental mobility at one to two years at the treatment level	High
	No statistically significant difference in secondary surgery at the adjacent levels at one to two years	Low

⇒ There is a tendency for clinical results to be in favour of arthroplasty, but effect size was small and clinically irrelevant for all primary outcomes