

BARRICAID® PROSTHESIS
FOR PARTIAL ANULAR REPLACEMENT
Published Clinical Evidence List

PUBLISHED PEER-REVIEWED JOURNAL MANUSCRIPTS WITH BARRICAID® DATA

1. Spine (2013) 38(10) E587-E593
Can Prevention of A Re-Herniation Be Investigated?: Establishment Of A Herniation Model And Experiments With An Anular Closure Device
HJ Wilke, L Widmann, F Heuer, N Graf, S Rath
2. Eur Spine J (2013) 22:1030-1036
The High-Risk Discectomy Patient: Prevention Of Reherniation In Patients With Large Anular Defects Using An Anular Closure Device
GJ Bouma, M Barth, D Ledic, M Vilendecic
3. Korean J Spine (2012) 9(4):340-347
Primary Limited Lumbar Discectomy with an Annulus Closure Device: One-Year Clinical and Radiographic Results from a Prospective, Multi-Center Study
M Lequin, M Barth, C Thomé, GJ Bouma
4. Clin Neurol Neurosurg. 2013 Aug;115(8):1440-5
Protecting Facet Joints Post-Lumbar Discectomy: Barricaid Annular Closure Device Reduces Risk of Facet Degeneration
M Trummer, S Eustacchio, M Barth, PD Klassen, S Stein
5. J Neurol Surg A Cent Eur Neurosurg. 2013 Sep;74(5):285-9
Cost Savings Associated with Prevention of Recurrent Lumbar Disc Herniation: A Multi-Center Prospective Cohort Study
SL Parker, G Grahovac, D Vukas, D Ledic, M Vilendecic, MJ McGirt
6. Acta Clin Croat (2013) 52:87-91
Clinical Outcomes In Patients After Lumbar Disc Surgery With Anular Reinforcement Device; Two-Year Follow Up
D Vukas, D Ledić, G Grahovac, Z Kolić, K Rotim, M Vilendečić
7. J Neurol Surg A Cent Eur Neurosurg. DOI: 10.1055/s-0034-1393930
Effect of Anular Closure on Disk Height Maintenance and Reoperated Recurrent Herniation Following Lumbar Discectomy: Two-Year Data.
D Ledić, D Vukas, G Grahovac, M Barth, GJ Bouma, M Vilendecic

ACCEPTED BUT NOT YET PUBLISHED

8. J Neurol Surg A 2014;00:1-8.
Effect of Anular Closure on Disk Height Maintenance and Reoperated Recurrent Herniation Following Lumbar Discectomy: Two-Year Data
D Ledic, D Vukas, G Grahovac, M Barth, GJ Bouma, M Vilendecic
9. Journal of Spinal Disorders and Techniques Publish Ahead of Print; DOI:10.1097/BSD.0b013e3182956ec5
Effect Of A Novel Annular Closure Device (Barricaid) On Same Level Recurrent Disc Herniation And Disc Height Loss After Primary Lumbar Discectomy: Two-Year Results Of A Multi-Center Prospective Cohort Study
SL Parker, G Grahovac, D Vukas, M Vilendecic, D Ledic, MJ McGirt, EJ Carragee

PUBLISHED CONFERENCE PROCEEDINGS

10. Eur Spine J (2014) 23:2473–2569 | DOI 10.1007/s00586-014-3600-8; 9th Annual Meeting of the German Spine Society, Leipzig, Germany, 11-13 December 2014
MRI-changes in patients 2 years after sequestrectomy alone versus sequestrectomy with anulus closure
A Carolus, K Schmieder, C Thomé, GJ Bouma, M Barth
11. Eur Spine J (2014) 23:2473–2569 | DOI 10.1007/s00586-014-3600-8; 9th Annual Meeting of the German Spine Society, Leipzig, Germany, 11-13 December 2014
Preliminary Two-Year Safety Data for an Anular Closure Device: German Experience from a Multicenter, Prospective, Randomized Clinical Trial
M Czabanka, A Kursumovic, R Bostelmann, M Barth, V Heidecke, M Mehdorn, A. Hegewald, S Fröhlich, H.-P. Köhler, PD Klassen
12. Eur Spine J (2014) 23:2473–2569 | DOI 10.1007/s00586-014-3600-8; 9th Annual Meeting of the German Spine Society, Leipzig, Germany, 11-13 December 2014
Can Anular Closure Device Improve the Outocme of Discectomies? Clinical and Real World Experience with Anular Closure at a Single Site
A Kursumovic, S Rath
13. Eur Spine J (2014) 23:2473–2569 | DOI 10.1007/s00586-014-3600-8; 9th Annual Meeting of the German Spine Society, Leipzig, Germany, 11-13 December 2014
Recurrent Lumbar Disc Herniation: Treatment with a Bone- Anchored Anular Closure Device
A Kursumovic, R Hes, GJ Bouma, M. Barth, V Heidecke, A Hegewald, F Martens, C Thomé, J Kienzler, PD Klassen,S. Rath
14. J Neurol Surg A Cent Eur Neurosurg 2014; 75 - p27 | DOI: 10.1055/s-0034-1383763; Joint Annual Meeting 2014, Zurich, Switzerland, 12-13 June 2014
Early Two-Year Safety Data for an Annular Closure Device: Interim Results from a Multicenter, Prospective, Randomized Clinical Trial
J Kienzler, J Fandino, F Martens, R Hes, GJ Bouma, Anular Closure RCT Study Group, PD Klassen

SCIENTIFIC PROCEEDINGS

15. International Society for the Advancement for Spine Surgery (ISASS), San Diego, CA, 15-17 April, 2015
Confirming the Carragee Massive-defect Results: Lumbar Discectomy Patients at High Risk of Reherniation
GJ Bouma, A Kursumovic, J Kienzler, C Thomé, R Bostelmann
16. International Society for the Advancement for Spine Surgery (ISASS), San Diego, CA, 15-17 April, 2015
Early Readmissions Following Lumbar Discectomy with and without Anular Closure: Interim Data from an RCT
J Kienzler, G Lesage, R Hes, PD Klassen, Anular Closure RCT Study Group
17. Evidence & Technology Spine Summit, North American Spine Society, Snowbird, UT, 26-28 February, 2015
Initial Two-Year Safety Data for an Annular Closure Device: Interim Results from a Prospective, Multicenter, Randomized Control Trial
J Kienzler, J Fandino, F Martens, R Hes, GJ Bouma, Anular Closure RCT Study Group, PD Klassen
18. Congress of Neurological Surgeons (CNS), Boston, USA, 18-22 October 2014
Discectomy Patients at High Risk of Reherniation: Confirming the Carragee Large-Defect Results
GJ Bouma, PD Klassen, J Fandino, F Martens, R Hes

19. Congress of Neurological Surgeons (CNS), Boston, USA, 18-22 October 2014
Early Two-Year Safety Data for an Anular Closure Device: Interim Results from a Multicenter, Prospective, Randomized Clinical Trial
 J Kienzler, J Fandino, F Martens, R Hes, GJ Bouma, Anular Closure RCT Study Group, PD Klassen
20. Europ. Assoc. Neurological Surgeons (EANS), Prague, Czech Republic, 13-16 October 2014
The Barricaid annular prosthesis: Two-year clinical data and interim safety results of a multicenter RCT
 GJ Bouma
21. DGNC Spine Section, Innsbruck, Austria, 19-20 September 2014
Reoperation rate and revision strategies of failed lumbar discectomy with and without anular closure
 C Thomé, GJ Bouma, F Martens, J Fandino, PD Klassen
22. DGNC Spine Section, Innsbruck, Austria, 19-20 September 2014
Endplate changes observed on CT following lumbar discectomy: Interim analysis from the discectomy-only cohort of a post-marketing, multicenter, prospective study
 M Barth, C Thomé, PD Klassen, J Fandino
23. DGNC Spine Section, Innsbruck, Austria, 19-20 September 2014
Führen große Anulusdefekte zu höherem Risiko für Rezidiv-Bandscheibenvorfälle bei Patienten nach lumbaler Diskektomie?
 A Kursumovic, F Martens, GJ Bouma, C Thome, PD Klassen, J Fandino
24. National Congress of the Society of Spine Surgery SICV & GIS. Milan, Italy. 15 - 17 May 2014
24 Month Safety Data from a Prospective, Randomized Clinical Trial Evaluating an Anular Closure Device
 R Hes, PD Klassen, F Martens, GJ Bouma, A Kuršumović, Anular Closure RCT Study Group
25. German Society of Neurosurgery Annual Meeting. Dresden, Germany. 11-14 May, 2014
Bone-Anchored Anular Closure Device Following Limited Discectomy For Primary Lumbar Disc Herniation: Biomechanical Testing, Surgical Technique, And Preliminary Clinical Results
 NG Rainov, J Einhorn, V Heidecke
26. 1st EUROSPINE Spring Speciality Meeting. Prague, Czech Republic. 8-9 May 2014
24 Month Safety Data From A Prospective, Randomized Clinical Trial Evaluating An Anular Closure Device: An Interim Review
 A Kuršumović, PD Klassen, F Martens, R Hes, Anular Closure RCT Study Group, GJ Bouma
27. Spine Society of Australia Annual Scientific Meeting. Brisbane, Australia. 10-12 April 2014
24 Month Safety Data from a Prospective, Randomized Clinical Trial Evaluating an Anular Closure Device: An Interim Review
 A Kuršumović, PD Klassen, F Martens, R Hes, Anular Closure RCT Study Group, GJ Bouma
28. Neurosurgery in the Rockies. Colorado, USA. 23-27 February 2014
Initial Two-Year Safety Data for an Anular Closure Device: Interim Results from a Multicenter, Prospective, Randomized Clinical Trial
 PD Klassen, F Martens, R Hes, GJ Bouma, A Kuršumović, Anular Closure RCT Study Group 6
29. 19. Forum Wirbelsäulen Chirurgie. St. Anton am Arlberg, Austria, January 16-18, 2014
Darf's Ein Bisschen Mehr Sein? (Anulusverschluss U.Ä)
 PD Klassen
30. 3. Wirbelsäulenschmerz kongress. Munich, Germany. November 23, 2013
Rezidivbandschreibenvorfall, Kann Man Ihn Verhindern? (Reherniation, Can It Be Avoided?)
 M Trummer

31. Looking at the Future of the Spine Surgery based on the past experience. Venice, Italy. November 7-9, 2013
Closing The Anulus After Lumbar Discectomy: Indications, Technique And Results With Barricaid® Bone Anchored Prosthesis
S Eustacchio
32. 62° Congresso Nazionale Società Italiana Neurochirurgia (SINch). Palermo, Italy. October 10-12, 2013
Anular Closure Device: A Real World Experience
A Kuršumović, S Rath
33. 62° Congresso Nazionale Società Italiana Neurochirurgia (SINch). Palermo, Italy. October 10-12, 2013
Utilizzo Di Una Protesi Anulare Discale Come Complemento Intraoperatorio Del Trattamento Chirurgico Dell'ernia Discale Lombare: Risultati Preliminari
F Barone, N Alberio, M Fricia, M Passanisi, P Seminara (Catania)
34. 64th Annual Meeting of the German Society of Neurosurgery (DGNC). Friendship Meeting with Chinese Neurosurgical Society (CNS). Düsseldorf, Germany. May 26-28, 2013.
How Does Intradiscal Pressures Respond To Annulotomy And Annular Closure? - An In Vitro Biomechanical Study Of The Lumbar Functional Spinal Unit (Fsu)
R Bostelmann, JF Cornelius, HJ Steiger, M Leimert
35. 64th Annual Meeting of the German Society of Neurosurgery (DGNC). Friendship Meeting with Chinese Neurosurgical Society (CNS). Düsseldorf, Germany. May 26-28, 2013.
A Multicenter, Prospective, Randomized Study To Demonstrate The Superiority Of A Bone-Anchored Prosthesis For Annular Closure Used In Conjunction With Limited Discectomy To Limited Discectomy Alone For Primary Lumbar Disc Herniation
PD Klassen, R Hes, GJ Bouma, S Eustacchio, M Barth, S Rath, H M Mehdorn, V Heidecke, R Bostelmann, C Thomé, P Vajkoczy, HP Köhler, F Martens
36. 64th Annual Meeting of the German Society of Neurosurgery (DGNC). Friendship Meeting with Chinese Neurosurgical Society (CNS). Düsseldorf, Germany. May 26-28, 2013.
Three Years Experience With An Anular Closure Device
A Kuršumović, S Rath
37. Congresso Nazionale Società Italiana Di Chirurgia Vertebrale E Gruppo Italiano Scoliosi (GIS). May 16-18. Bologna, Italy
Lumbar Discectomy With An Anular Closure Prosthesis: Two-Year Clinical And Radiographic Results From A Prospective, Multicenter Study
S Eustacchio, M Barth, GJ Bouma
38. Congresso Nazionale Società Italiana Di Chirurgia Vertebrale E Gruppo Italiano Scoliosi (GIS). May 16-18. Bologna, Italy
Effect of Annular Defects on Intradiscal Pressures in the Lumbar Spine - An In Vitro Biomechanical Study of Discectomy and Annular Closure
R Bostelmann, JF Cornelius, TM Kinfe, HJ Steiger, M Leimert
39. ISASS. Vancouver, Canada. April 2-5, 2013
Comparative Effectiveness and Cost-utility of a Novel Annular Closure Device for Prevention of Recurrent Disc Herniation Following Lumbar Discectomy: A Prospective Cohort Study
SL Parker, G Grahovac, D Vukas, D Ledic, M Vilendecic, MJ McGirt
40. DWG 2012. Stuttgart, Germany. December 6-8, 2012
Limited Lumbar Discectomy with an Anular Closure Device: Initial 24 Month Clinical and Radiographic Results from a Prospective, Multinational, Multi-Center Study
PD Klassen, C Thomé, GJ Bouma, M Barth

41. DWG 2012. Stuttgart, Germany. December 6-8, 2012
Disc preservation after discectomy and anular closure: investigation of modic changes
M Barth, M Vilendecic, D Ledic, GJ Bouma
42. DWG 2012. Stuttgart, Germany. December 6-8, 2012
Bandscheibenschonung durch Annulusverschluss – Radiografische Veränderungen nach Diskektomie
M Trummer, M Vilendecic, D Ledic, GJ Bouma, M Barth (Mannheim), S Eustacchio
43. DWG 2012. Stuttgart, Germany. December 6-8, 2012
Effect of Annular Defects on Intradiscal Pressures in the Lumbar Spine - An In Vitro Biomechanical Study of Discectomy and Annular Closure
R Bostelmann, J.F Cornelius, H-J Steiger, M Leimert
44. ÖGNC. Graz, Austria; October 4-6, 2012
Two-Year Benefits of Anular Defect Closure After Limited Discectomy
PD Klassen, C Thome, GJ Bouma, T Marinovic, D Ledic, M Barth
45. ÖGNC. Graz, Austria; October 4-6, 2012
Real World Experience with an Anular Closure Device
A Kuršumović, S Rath
46. ÖGNC. Graz, Austria; October 4-6, 2012
Cost Effectiveness of Anular Closure: Same-Site Comparison to a Primary Discectomy Population
S Eustacchio, D Ledic, T Marinovic
47. DGNC-Spine Section. Köln, Germany; September 14-15, 2012
Kommt es zur Veränderung des intradiskalen Druckes nach Diskektomie und nach Anulusverschluß? - Eine in vitro biomechanische Untersuchung
R Bostelmann, JF Cornelius, HJ Steiger, M Leimert
48. DGNC-Spine Section. Köln, Germany; September 14-15, 2012
Do Trial Inclusion/Exclusion Criteria Exclude Real World Patients? – Anular Closure Device (Acd) Registry Patients Screened Against Trial Criteria For The ACD Randomized Trial
A Kuršumović, S Rath
49. 63rd Annual Meeting of the German Society of Neurosurgery (DGNC). Joint Meeting with the Japanese Neurosurgical Society (JNS). Leipzig, Germany. June 13-16, 2012.
Preventing Facet Degeneration After Discectomy With An Anular Closure Device
M Vilendecic, D Ledic, GJ Bouma, M Barth, S Eustacchio, S Stein
50. 63rd Annual Meeting of the German Society of Neurosurgery (DGNC). Joint Meeting with the Japanese Neurosurgical Society (JNS). Leipzig, Germany. June 13-16, 2012.
Would You Ride Your Bicycle With A Puncture In The Tire? Two-Year Benefits Of Anular Defect Closure After Lumbar Discectomy
GJ Bouma, M Barth, M Vilendecic, D Ledic, R Bartels, EA Al-Kahlout
51. 63rd Annual Meeting of the German Society of Neurosurgery (DGNC). Joint Meeting with the Japanese Neurosurgical Society (JNS). Leipzig, Germany. June 13-16, 2012.
Real World Experience With An Anular Closure Device
A Kuršumović, S Rath
52. 63rd Annual Meeting of the German Society of Neurosurgery (DGNC). Joint Meeting with the Japanese Neurosurgical Society (JNS). Leipzig, Germany. June 13-16, 2012.
Can Lumbar Discectomy With The Barricaid Endoprosthesis Bring Benefit To Patients With Back Pain Greater Than Leg Pain?
GJ Bouma, M Barth, M Vilendecic, D Ledic, R Bartels, EA Al-Kahlout

53. Britspine Meeting, Newcastle, United Kingdom. May 2-4, 2012.
Preventing Reherniations With An Anular Closure Endoprosthesis
GJ Bouma, M Barth, M Vilendecic, D Ledic, R Bartels, E Al-Kahlout
54. 6th German Spine Conference, Annual Meeting of the German Spine Society. Hamburg, Germany. December 8-10, 2011.
Preventing Disc Height Loss And Reherniation After Discectomy: One-Year Data From An EU Post-Marketing Study Of An Anular Closure Technology
GJ Bouma, M. Barth, R. Bartels, E. Al-Kahlout, M. Vilendecic, M. Gorensk, P. Varga, D. Ledic, S. Eustacchio
55. North American Spine Society, 26th Annual Meeting. Chicago, IL. November 2-5, 2011.
The Spine Journal Vol. 11, Issue 10, Supplement, Pages S148-S149:
Can Herniation Be Prevented? Establishment of a Herniation Model and Experiments with an Annulus Reconstruction Implant
HJ Wilke, L Widmann, N Graf, F Heuer
56. EuroSpine 2011. Milan, Italy. October 19-21, 2011.
Preventing Disc Height Loss and Reherniation After Discectomy: One-Year Data From an EU Post-Marketing Study of an Anular Closure Technology
GJ Bouma, M Barth, RH Bartels, T Beems, E Al-Kahlout, M Vilendecic, M Gorenssek, P Varga, D Ledic, S Eustacchio
57. Spine Arthroplasty Society, 11th Annual Meeting. Las Vegas, NV. April 26-29, 2011.
Reconstructing the Anulus: Complete One-Year and Initial Two-Year Results From the Intrinsic Therapeutics Barricaid Endoprosthesis Pilot Study
M Vilendecic, D Ledic, G Grahovac, D Vukas, P Varga, S Eustacchio, M Gorenssek
58. AANS/CNS Section on Disorders of the Spine and Peripheral Nerves, 27th Annual Meeting. Phoenix, AZ. March 9-12, 2011.
Effect of a Novel Anular Repair Device (Barricaid) on Same Level Recurrent Disc Herniation and Disc Height Loss After Primary Lumbar Discectomy: Results of a Multicenter Non-randomized Prospective Cohort Study
S Parker, KL Chaichana, D Ledic, M Vilendecic, MJ McGirt
59. DWG 2010. Bremen, Germany. December 16-18, 2010. V33 Eur Spine J (2010) 19:1976:
An annulus fibrosus prosthesis. EU clinical (phase II) study: One-year results in reconstructing the anulus
S Eustacchio, M Trummer, M Vilendecic, D Ledic, P Varga, M Gorenssek, W Kreil, H Schröttner
60. DWG 2010. Bremen, Germany. December 16-18, 2010. SP12 Eur Spine J (2010) 19:1995-1996:
Biomechanical investigation of a new annulus reconstruction implant after a provoked nucleus extrusion
H-J Wilke, L Widmann, N Graf, F Heuer
61. DWG 2010. Bremen, Germany. December 16-18, 2010. P47 Eur Spine J (2010) 19: 2016:
Effectiveness And Safety Of A New Designed Endodiscal Device In The Treatment Of Primary Lumbar Discectomy: Results Of A Prospective Study In 20 Patients
PD Klassen, B Baume, H Seidel
62. DWG 2010. Bremen, Germany. December 16-18, 2010. P142 Eur Spine J (2010) 19: 2051-2052:
Design History of an Anular Reconstruction Device: From Failure to Success
M Trummer, S Eustacchio
63. DWG 2010. Bremen, Germany. December 16-18, 2010. P154 Eur Spine J (2010) 19: 2056:
Initial Clinical Results Concerning Reherniation with Novel Anular Closure Device 'Barricaid' after Limited Discectomy for Patients with Lumbar Disc Herniation
A Kuršumović, S Rath
64. DWG 2010. Bremen, Germany. December 16-18, 2010. P161 Eur Spine J (2010) 19:1963:
Short-Term Results Of A Novel Bone-Anchored Anular Closure Device In Lumbar Disc Surgery
C Thomé, R Bartels, M Barth, E Al-Kahlout, GJ Bouma

DEFINING THE NEED (DISCECTOMY OUTCOMES ARE NOT PERFECT)

65. J Bone Joint Surg Am. (2003) Jan;85-A(1):102-8.
Clinical Outcomes After Lumbar Discectomy for Sciatica: The Effects of Fragment Type and Anular Competence.
Carragee, et al.
66. Spine (2006) Mar 15;31(6):653-7.
A Prospective Controlled Study Of Limited Versus Subtotal Posterior Discectomy: Short-Term Outcomes In Patients With Herniated Lumbar Intervertebral Discs And Large Posterior Anular Defect.
Carragee, et al.
67. Spine (2000) Jun 15;25(12):1500-8.
Reoperations After Lumbar Disc Surgery: A Population-Based Study Of Regional And Interspecialty Variations.
Keskimäki , et al.
68. Spine J. (2012) Feb;12(2):89-97. doi: 10.1016/j.spinee.2011.11.010. Epub 2011 Dec 21.
Repeat Surgery After Lumbar Decompression For Herniated Disc: The Quality Implications Of Hospital And Surgeon Variation.
Martin, et al.
69. Spine (2007) Feb 1;32(3):382-7.
Reoperation Rates Following Lumbar Spine Surgery And The Influence Of Spinal Fusion Procedures.
Martin, et al.
70. Neurosurgery (2009) Feb;64(2):338-44; discussion 344-5.
Recurrent Disc Herniation And Long-Term Back Pain After Primary Lumbar Discectomy: Review Of Outcomes Reported For Limited Versus Aggressive Disc Removal.
McGirt, et al.
71. Spine (2003) Mar 15;28(6):621-7.
Risk Of Multiple Reoperations After Lumbar Discectomy: A Population-Based Study.
Osterman, et al.
72. Eur Spine J. (2009) Aug;18 Suppl 3:294-304.
The Swedish Spine Register: development, design and utility.
Strömqvist, et al.
73. Spine J. (2009) Mar;9(3):240-57. 46.
An Evidence-Based Review Of The Literature On The Consequences Of Conservative Versus Aggressive Discectomy For The Treatment Of Primary Disc Herniation With Radiculopathy.
Watters, et al.
74. Spine (2013) Feb 7. [Epub ahead of print]
Prospective, Multi-Center, Randomized, Controlled Study of Anular Repair in Lumbar Discectomy: Two-Year Follow-Up.
Bailey, et al.
75. Spine 2(013) Apr;38(7): 581-590
Reoperation Rate After Surgery For Lumbar Herniated Intervertebral Disc Disease: Nation-Wide Cohort Study.
Kim, et al.
76. Eur Spine J, DOI 10.1007/s00586-014-3734-8
Endplate Changes Following Discectomy: Natural History And Associations Between Imaging And Clinical Data.
Weiner, et al.