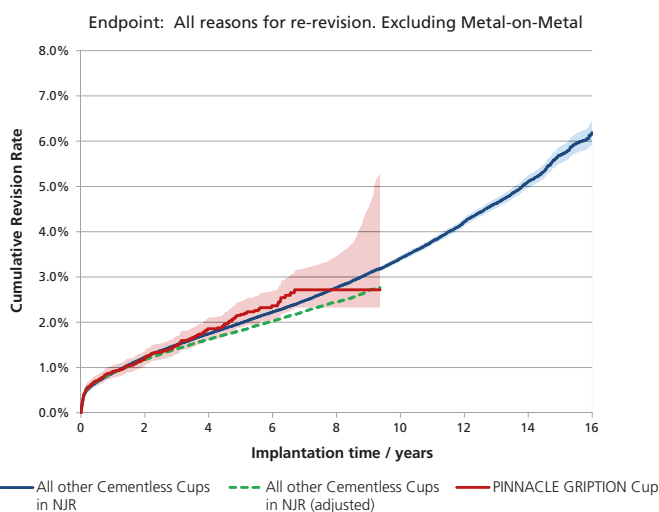


# Analysis of Total Hip Replacement Using the PINNACLE® Acetabular Cup System with GRIPTION™ Coating in the National Joint Registry of England, Wales, Northern Ireland and The Isle Of Man

National Joint Registries provide valuable information on the revision rates and survivorship of orthopaedic implants. Typically they include large cohorts with data from a range of surgeons and centres, irrespective of surgeon experience level. The National Joint Registry for England, Wales, Northern Ireland and the Isle of Man (NJR) has been in operation since 2003 and in that time has collected data on over 1,000,000 primary total hip replacements (THR).<sup>1</sup>

The PINNACLE® Acetabular Cup System includes an acetabular option with a high friction coating. The GRIPTION™ Coating exhibits a proprietary gradient porosity which is engineered with a clinically advantageous 63% surface volume porosity designed to facilitate bone in-growth and a favorable mechanical loading environment for bone formation.<sup>2-4</sup>

The NJR has produced a new report analysing the performance of the PINNACLE Cup with GRIPTION Coating.<sup>5</sup> This analysis was commissioned by DePuy Synthes, but conducted and validated by the NJR. The report details a total cohort of 17,254 implantations in primary THR (mean age 65.7, 40.1% male), which is compared to all other cementless cups on the NJR (n=776,781). The report includes cumulative revision rates (CRR) as well as hazard ratios (adjusted for age, gender, diagnosis and year of implantation) to compare the relative risk of revision. The report also includes PROMs at pre-op and 6 months using the Oxford Hip



Score (OHS), EQ-5D and EQ-VAS. All metal liners were excluded. All reports can be accessed at <http://www.corailpinnacle.net/resources>

The PINNACLE Cup with GRIPTION Coating has a CRR estimate at 9 years of 2.7% (2.3, 4.5%). This is a low revision rate and compares favorably with the CRR for all other cementless cups at 9 years of 3.1% (3.0, 3.1%). The adjusted hazard ratio is 1.10 (0.97, 1.24)  $p=0.136$  indicating that there is no statistically significant difference in risk of revision.<sup>5</sup>

The PINNACLE Cup with GRIPTION Coating demonstrates a low revision rate out to 9 years that is not statistically different than all other cementless cups on the NJR.

The adjusted PROMs scores and adjusted health gain are not statistically different than the class at 6-months.

Oxford Hip Score (0 - 48)	PINNACLE and GRIPTION Cup	All other Cementless Cups in NJR
Paired Records	3,477	181,993
PreOp score	17.7 (17.5 - 18.0)	18.4 (18.4 - 18.5)
6 month score (adjusted)	39.8 (39.5 - 40.0)	39.6 (39.6 - 39.7)
Health gain (adjusted)	21.8 (21.5 - 22.0)	21.6 (21.6 - 21.6)
p value (adjusted health gain)		0.095
Score Improved	97.4%	97.3%

EQ-5D Index (-0.59 - 1.00)	PINNACLE and GRIPTION Cup	All other Cementless Cups in NJR
Paired Records	3,231	168,047
PreOp score	0.341 (0.330 - 0.353)	0.369 (0.367 - 0.370)
6 month score (adjusted)	0.797 (0.789 - 0.805)	0.798 (0.797 - 0.799)
Health gain (adjusted)	0.442 (0.434 - 0.450)	0.443 (0.442 - 0.444)
p value (adjusted health gain)		0.54
Score Improved	90.4%	89.8%

EQ-VAS (0 - 100)	PINNACLE and GRIPTION Cup	All other Cementless Cups in NJR
Paired Records	3,054	161,747
PreOp score	64.0 (63.2 - 64.8)	65.4 (65.3 - 65.5)
6 month score (adjusted)	77.4 (76.8 - 78.0)	77.1 (77.0 - 77.2)
Health gain (adjusted)	12.4 (11.8 - 13.0)	12.1 (12.0 - 12.2)
p value (adjusted health gain)		0.26
Score Improved	67.8%	66.8%

The PROMs are covered in the tables above. Across all three measures the adjust 6-month scores and the adjusted health gain were not statistically different for the PINNACLE Cup with GRIPTION Coating when compared to all other cementless cups (OHS p=0.095, EQ-5D p=0.54, EQ-VAS p=0.26).

## References

1. National Joint Registry for England, Wales, Northern Ireland and the Isle of Man, 16th Annual Report, 2019. Table 3.3. Available from: [www.njrreports.org.uk](http://www.njrreports.org.uk)
2. DePuy Internal Test Report: WR070125 - Morphological properties of rough titanium coating: 2007.
3. Karageorgiou V, et al. Porosity of 3D biomaterial scaffolds and osteogenesis. *Biomaterials* 2005;26:5474-91
4. Simmons, et al. Differences in osseointegration rate due to implant surface geometry can be explained by local tissue strains. *J Orthop Res* 2001;19:187-194
5. Bespoke Implant report PINNACLE (GRIPTION) NJR. Report can be accessed at <http://www.corailpinnacle.net/resources>

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For full product details and precautions, please consult the Instructions For Use.



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