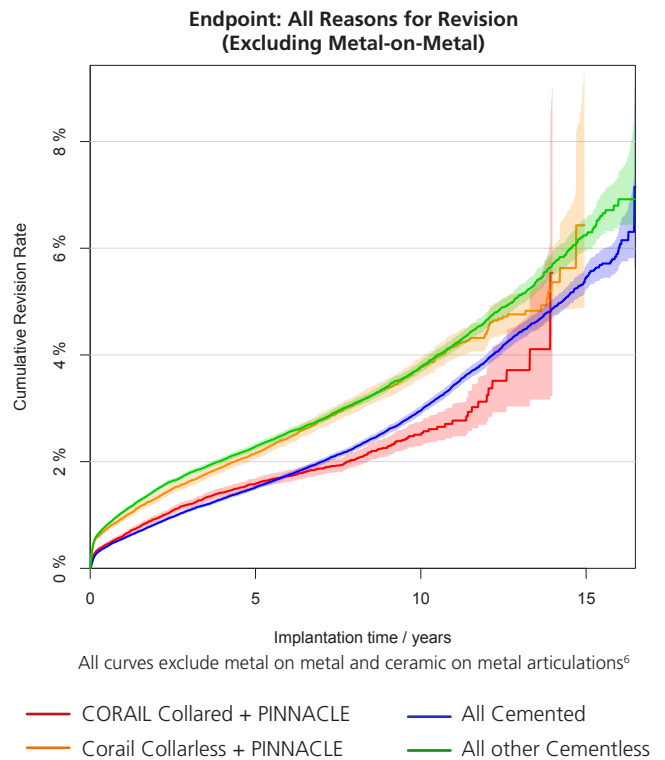


NJR Analysis of Collared and Collarless Total Hip Replacement using the cementless CORAIL® Femoral Stem

National Joint Registries provide valuable information on the revision rates and survivorship of orthopaedic implants. Typically they include large cohorts with data from all surgeons and from all 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).¹

The cementless CORAIL® Femoral Stem is available both with and without a collar. Proponents of the use of a collared prosthesis claim that it provides advantages in the early stability of the implant, allowing for earlier post-operative weight bearing, protection against subsidence, and a positive dispersion of the vertical forces via the collar into the medial calcar.²⁻³

The NJR has produced new analysis examining the performance of the CORAIL Femoral Stem, specifically the CORAIL Collared Stem in combination with the PINNACLE® Cup.⁴⁻⁵ This analysis was commissioned by DePuy Synthes, but conducted and validated by the NJR. The reports detail 81,685 CORAIL Collared with PINNACLE implantations (mean age 66.7, 40.3% male). In order to better understand the performance of the combination of CORAIL Collared with PINNACLE the analysis compares to two sets of class data; all other cementless hips on the NJR (n=402,309) and all cemented hips on the NJR (n=367,209). Analysis is also provided on the non-collared CORAIL designs used with PINNACLE (N=68780). The cumulative revision rates (CRR) are presented on the chart below and the reports provide hazard ratios to compare the relative risk of revision. The hazard ratios presented below are adjusted for any differences in age, gender, diagnosis and year of implantation. All metal liners were excluded. All reports can be accessed at <http://www.corailpinnacle.net/supporting-evidence/overview>



KEY MESSAGES

PATIENTS RECEIVING CORAIL COLLARED WITH PINNACLE ARE:

28% less likely

to be revised when compared to all other uncemented hips on the NJR
 (HR 0.72 (0.68-0.77) P<0.001)⁴

8% less likely

to be revised when compared to all cemented hips on the NJR
 (HR 0.92 (0.86, 0.98) p=0.013)⁵

In addition to survival analysis the NJR reports also examine the reasons for revision.⁴ The table below details the actual number of revisions reported for each reason within the CORAIL Collared PINNACLE cohort, as well as the number that would be expected for a cohort of 81,685, based on the data for all other cementless hips on the NJR. These numbers are then compared. CORAIL Collared with PINNACLE demonstrates statistically significantly fewer revisions than all other cementless hips across a range of revision reasons, including pain, infection, dislocation, aseptic loosening and peri-prosthetic fracture.

CORAIL Collared with PINNACLE Construct. Reasons for revision compared to expected rates on NJR⁴

Reason for Revision	Revised [†]	Expected Revisions*	p Value
Unexplained Pain	102	140.06	<0.001
Dislocation/Subluxation	258	314.44	<0.001
Adverse Soft Tissue Reaction	33	46.60	0.034
Infection	208	246.73	0.006
Aseptic Loosening - Stem	258	259.52	0.947
Aseptic Loosening - Socket	57	94.59	<0.001
Periprosthetic Fracture - Stem	76	245.34	<0.001
Periprosthetic Fracture - Socket	10	33.80	<0.001
Malalignment - Stem	54	59.87	0.437
Malalignment - Socket	84	91.84	0.399
Wear of Acetabular Component	44	59.34	0.033
Lysis - Stem	17	22.71	0.268
Lysis - Socket	9	13.83	0.208
Implant Fracture - Stem	12	22.70	0.012
Implant Fracture - Socket	47	34.50	0.027
Implant Fracture - Head	4	6.89	0.323
Dissociation of Liner	39	37.59	0.79
Other/Reason not Recorded	58	75.36	0.028
Total Revised	1138	1475.78	<0.001
Significantly better, p <0.001	Significantly better, p <0.05	Significantly worse, p <0.05	Significantly worse, p <0.001

*Based on all NJR Cementless Stems (excluding Metal-on-Metal), adjusted for age group, gender and indications. †Multiple reasons may be listed for one revision procedure.

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4. Bespoke Implant report (CORAIL Collared and PINNACLE vs Cementless) NJR. Report can be accessed at <http://www.corailpinnacle.net/supporting-evidence/overview>
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