As the demand for total hip arthroplasty (THA) continues to grow due to an aging population, longer and more active lives and a propensity to treat younger patients, so too does the incidence of THA revisions.\(^2,3\) Patients who undergo revision THA often have increased intra-operative technical difficulties, post-operative complications and poorer outcomes requiring higher resource utilisation than primary THA.\(^4-6\) Strategies to reduce the clinical and economic burden of revision THA could include the use of primary implants with lower cumulative revision rates.\(^3,4\)

**Polarstem** in combination with **R3** has demonstrated the highest survivorship at 7 years regardless of fixation method\(^1\)

**Highest survivorship**
- 7 years
- 99.02% for any cup-stem combination regardless of fixation method\(^1\)

**Lowest revision rate**
- 7 years
- 0.98% for any cementless cup-stem combination\(^1\)

**Cumulative revision rates for the six most implanted cementless THA prostheses by best performing bearing combinations**\(^1\)

<table>
<thead>
<tr>
<th>Bearing Combination</th>
<th>Cumulative Percentage Probability of Revision</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>POLARSTEM/R3</strong></td>
<td>0.98%</td>
</tr>
<tr>
<td><strong>Taperloc®</strong></td>
<td>1.12%</td>
</tr>
<tr>
<td><strong>Furlong® HAC Stem/Exceed® ABT CoP</strong></td>
<td>1.21%</td>
</tr>
<tr>
<td><strong>Furlong® HAC Stem/CSP CoP</strong></td>
<td>1.23%</td>
</tr>
<tr>
<td><strong>Accolade®/Trident CoP†</strong></td>
<td>1.25%</td>
</tr>
<tr>
<td><strong>Corail®/Pinnacle® CoP†</strong></td>
<td>1.27%</td>
</tr>
</tbody>
</table>

\(^1\) Data beyond seven and 10 years respectively not available in report.

**Polarstem Cementless Femoral Component: NJREW Implant Summary Report**\(^7\)

At 8 years, compared to class average (all bearing types), **Polarstem** demonstrated:

- 46% reduction in femoral revisions – all reasons (p<0.001)\(^7\)
- 61% reduction in stem aseptic loosening (p<0.01)\(^7\)
- 36% reduction in dislocation/subluxation (p<0.05)\(^7\)
- 55% reduction in revisions caused by pain (p<0.01)\(^7\)

After exclusion of Metal-on-Metal, **Polarstem** still showed a significant 41% reduction in femoral revision rates when compared with the class average for cementless THA (p<0.001)\(^7\)

A reduction in pain has been shown to correlate with increased patient satisfaction.\(^8\)
At 8 years, compared to class average (all bearing types), R3 demonstrated:

- 55% reduction in acetabular revisions (p < 0.001)²
- 77% reduction in aseptic loosening – socket (p < 0.001)²
- 44% reduction in socket malalignment (p < 0.005)²
- 67% reduction in revisions caused by pain (p < 0.001)²

Results from recent studies support the stand-out survivorship trends seen in the NJREW

Cypres et al, 2018²
99.1% stem survivorship at 10 years
502 THAs with POLARSTEM femoral component and POLARCUP™ acetabular component

Tech et al, 2018²
98.89% cup survivorship at 5 years
293 THAs with R3 acetabular component
97% (n = 283) cementless THA with POLARSTEM femoral component
3% (n=10) hybrid combination

POLAR3: Different by design

The unique design features of POLARSTEM, R3 and VERILAST™ may translate into the clinical benefits reported in the registry

POLARSTEM
Cementless Stem System

- 7A* ODEP rating²
- >250,000 implantations

Unique design

Wideened proximal taper providing stability designed to reduce the incidence of subsidence²,³,⁴

The shortened stem length and narrow distal tip allow for ease of implantation through any surgical approach²,³,⁵

Advanced coating

The stem design incorporates the advanced surface roughness of Titanium Plasma spray with a hydroxyapatite coating²,³,⁶

R3
Acetabular System

- 7A* ODEP rating²
- >1 million implantations

STIKTITE™ stability

When compared with more traditional porous coatings, STIKTITE coating has greater porosity providing a higher coefficient of friction for an immediate “scratch-fit” feel and better initial implant fixation¹,⁹,¹⁰

Improved initial fixation limits micromotion potentiating enhanced bony ingrowth¹,⁹,¹⁰

VERILAST™ Technology for Hips

14 years of clinical heritage

- >1 million implantations of OXINIUM™

Excellent wear performance

The exclusive combination of OXINIUM™ oxidized zirconium alloy and highly cross-linked polyethylene has excellent wear performance in laboratory and clinical studies²⁰-²³

Low levels of taper corrosion

OXINIUM implants have been shown to undergo substantially lower levels of taper corrosion compared to metal femoral heads²⁴,²⁵

Biacompatibility

The OXINIUM material contains very low levels of the metals nickel, cobalt and chromium compared to cobalt chromium molybdenum implants²⁶,²⁷

Patients who may not tolerate other bearing materials may tolerate an OXINIUM component²⁸-³⁰

Supporting healthcare professionals for over 150 years