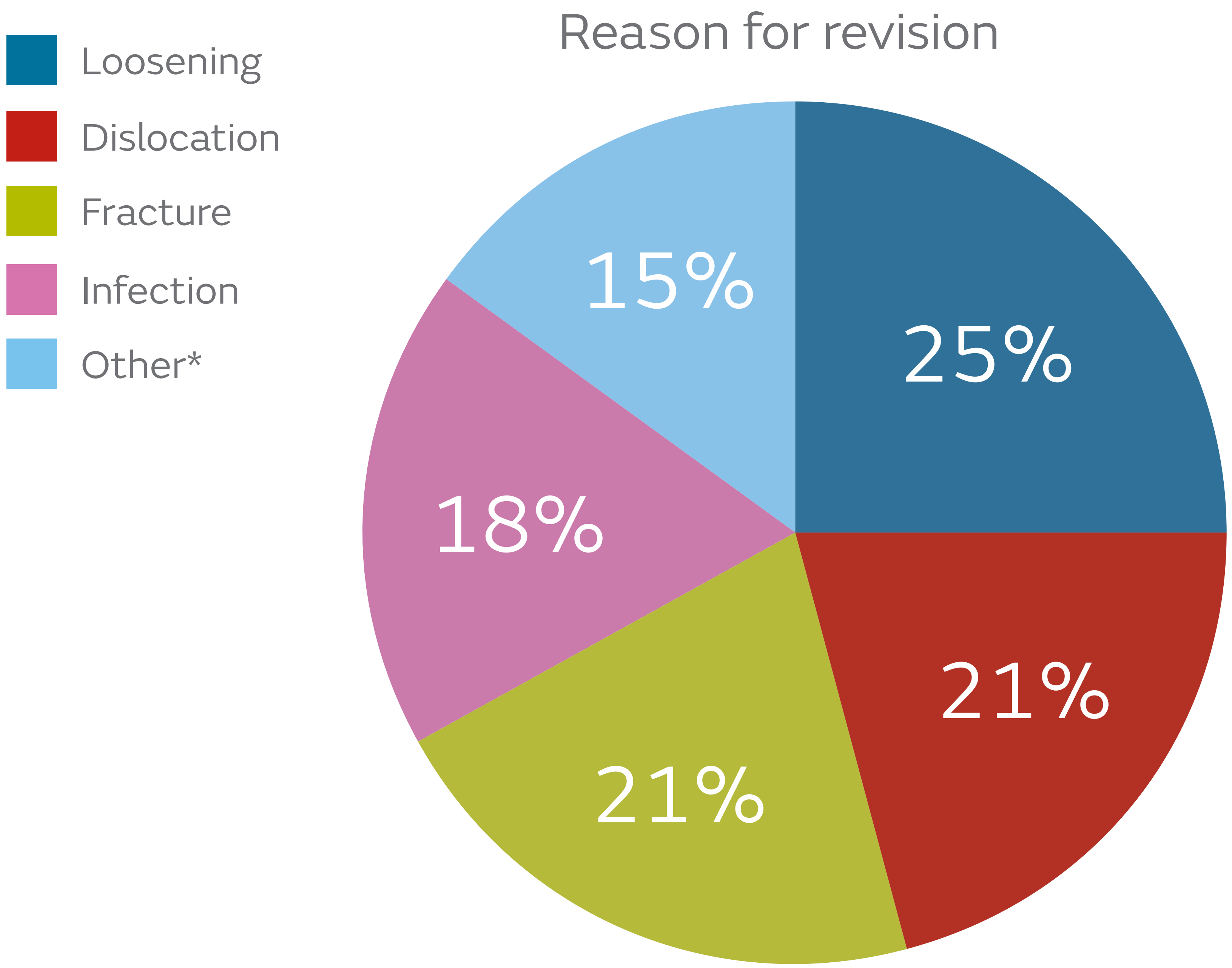
Smith+Nephew

✚ Evidence in focus

Introducing a new modular dual mobility acetabular component: OR3O◊

"Despite the success of primary THR, failure and revision continue to pose a major challenge for orthopaedists while persisting as a significant economic burden on the healthcare system."[1]

Dislocation is a leading cause of hip revision[2]



"Dislocations have a profound effect on patient outcomes and may result in implant damage."[3]

Fear of dislocation may result in some patients having to abandon their job or leisure activities.[4]

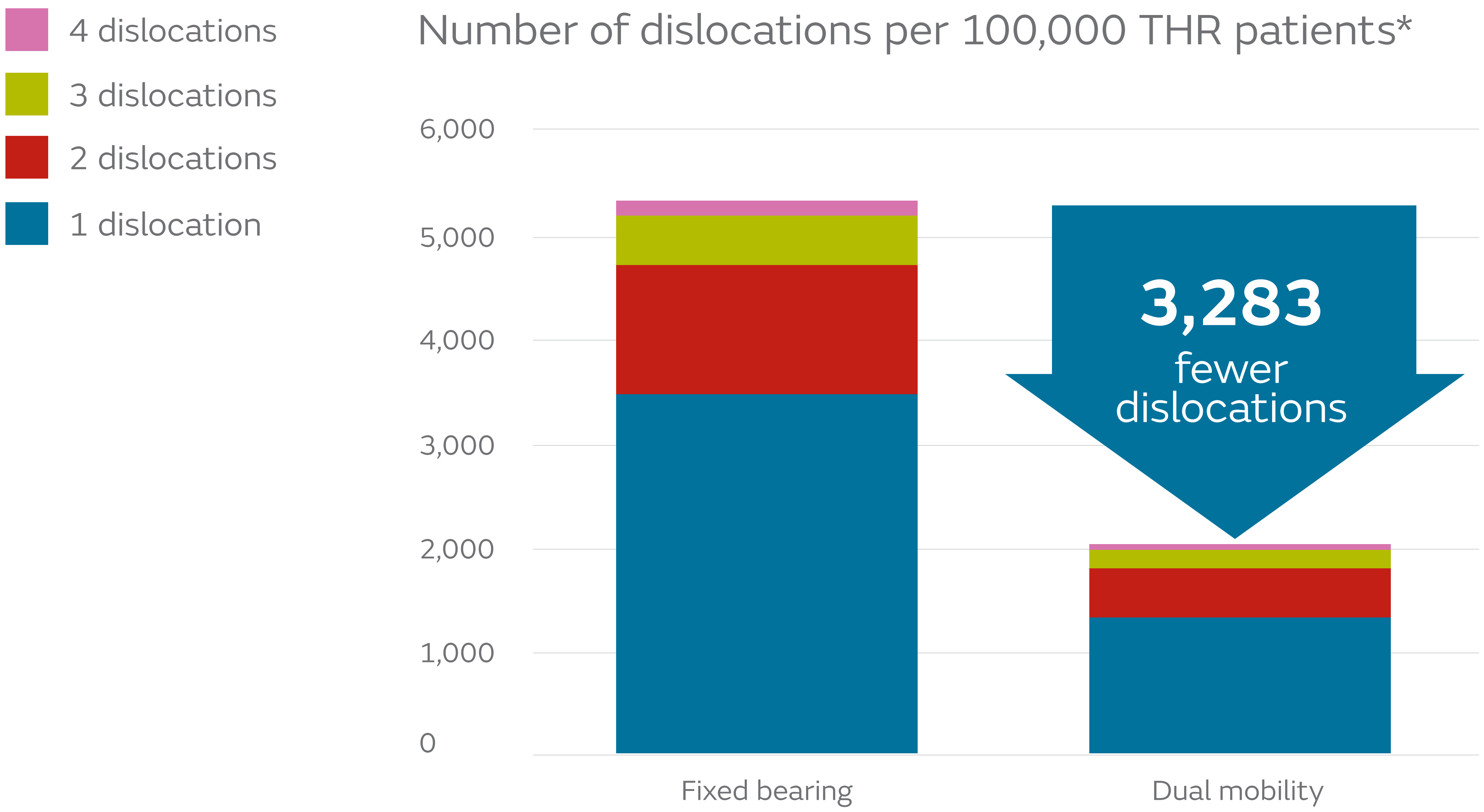
*Includes lysis, pain, leg length discrepancy, malposition, instability, implant breakage. All less than 2.5%.

Patient-related risk factors for dislocation[4-6]

Patient-related risk factors	**Preoperative diagnosis**
Age >75 years	Avascular necrosis
Female gender aged >70 years	Fractured neck of femur
Prior hip surgery	Inflammatory arthropathy
ASA grade* >3	Neuromuscular disease
Body mass index >30 kg/m^2	
Abductor deficiency	
Significant pelvic tilt	

*American Society of Anesthesiologists' physical status classification system

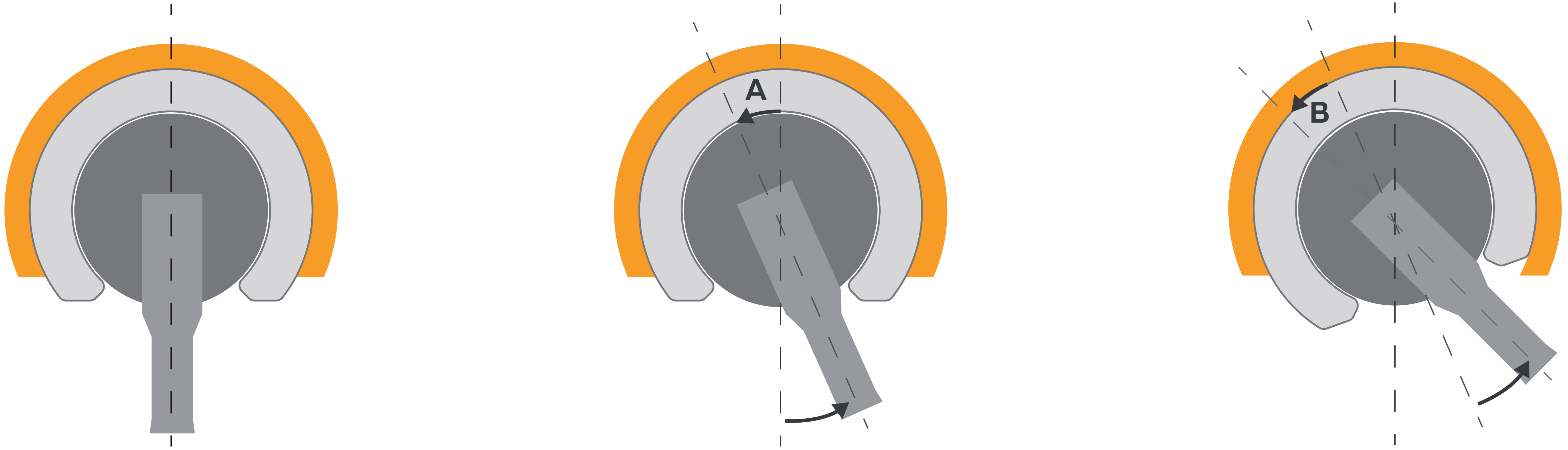
Dual mobility acetabular components may reduce number of dislocations and revisions compared to fixed bearings[7]



*Based on assuming a relative risk of dislocation of 0.4 for dual mobility vs fixed bearing

Dual mobility (DM) acetabular components

Designed to deliver increased range of motion with good stability to address dislocation whilst reducing wear[8]



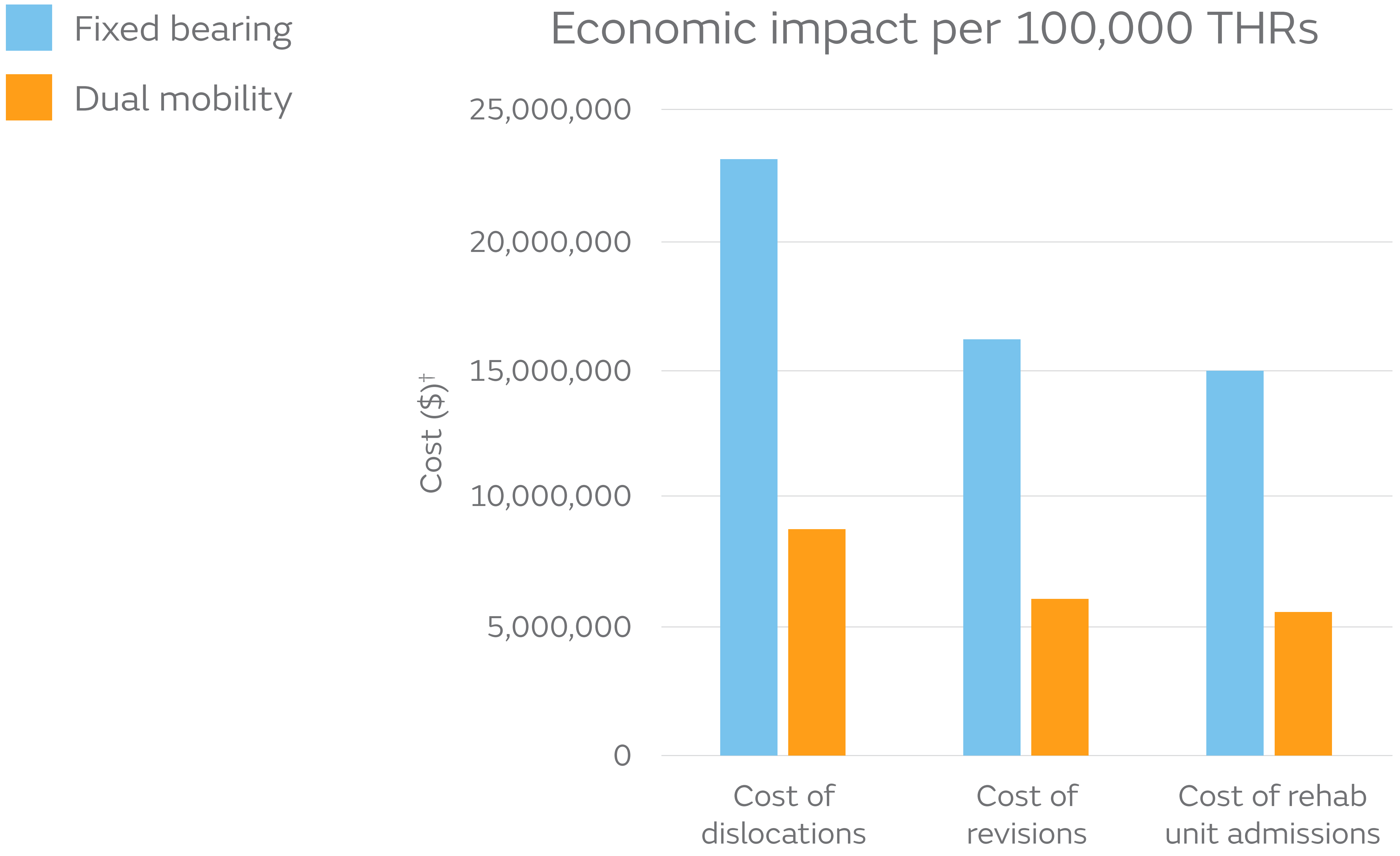
Neutral position
The insert is self-aligning, allowing loading following the path of least resistance

Low level activity
Primary movement occurs in the ball head/insert articulation, allowing the insert to sit in its natural position

High level activity
Secondary movement occurs in the insert/cup articulation

Source: Moore C, Orlandi L (2012)[3]

Potential cost savings with DM cups when used in *all* primary THR patients*[7]



DM cups may result in cost savings per 100,000 primary THRs of **$33,399,671†**

*Compared to fixed bearings
†Calculated from €30,276,802 with an exchange rate of 1USD=€0.91 (calculated May 1, 2020)

Dual mobility cups – building on our strong heritage

Advances in dual mobility systems

1974
DM acetabular component developed in France[9]

1996
Second generation DM acetabular component (changes made to cup and liner)[9]

1999
POLARCUP◊ launched in France

2006
Third generation DM acetabular component (new coatings used on the outside of the metal cup)[9]

2007
US clearance of POLARCUP

2010
US clearance of modular dual mobility acetabular components (MDM)

2017
US clearance of BIRMINGHAM HIP◊ dual mobility insert

2019
US clearance of OR3O◊ Dual Mobility with OXINIUM◊ DH Technology

1970 1980 1990 2000 2010 2020

POLARCUP◊ demonstrates excellent clinical and functional outcomes

20+ years of clinical heritage
10A* ODEP rating
POLARCUP Cementless[10]

7 clinical publications

4 Registries

200,000 implantations

Clinical results

Excellent cumulative 10-year survivorship (all cause)[11]
95.9%
n=502

0
Dislocations[11]

Dislocation rate in primary THR:[11–13]
0.0 to 0.7%

From monoblock to modular DM cups: OR3O◊ Dual Mobility with OXINIUM◊ DH Technology

OXINIUM femoral head

Launched in 2002; currently used with POLAR3 and REDAPT◊ Total Hip Solutions

- Ceramicised metal: oxidized zirconium is a metallic alloy with a ceramic surface that provides wear resistance without brittleness
- OXINIUM minimizes the risk of corrosion and fretting compared to CoCrMo[14]
- Biocompatibility: OXINIUM contains very low levels of nickel, cobalt and chromium compared to cobalt chromium molybdenum implants[15,16]

From monoblock to modular DM cups: OR3O◊ Dual Mobility with OXINIUM◊ DH Technology

Highly cross-linked polyethylene (XLPE) insert

Launched in 2002; currently used across entire Smith+Nephew hip platform

- 10 Mrad irradiated and remelted XLPE
- Excellent mechanical properties[17]
- No measurable free radicals[17]
- Oxidation resistance[18]
- Low wear rate with a marked reduction in the risk of revision for aseptic loosening[19-21]
- Eccentric polyethylene design; reduces risk of impingement at retentive mouth

From monoblock to modular DM cups: OR3O◊ Dual Mobility with OXINIUM◊ DH Technology

OXINIUM DH (Diffusion Hardened) liner

Launched in 2020

- Diffusion hardened oxidized zirconium (OXINIUM) designed for hard-on-hard articulation[22]
- Comparable abrasion damage resistance to OXINIUM and superior to CoCrMo[23]
- Low wear rates under ideal and adverse conditions[24,25]
- 18 degree taper and alignment peg designed to aid in liner insertion and seating[26]

From monoblock to modular DM cups: OR3O◊ Dual Mobility with OXINIUM◊ DH Technology

R3◊ or REDAPT◊ Acetabular Systems

- Continuum of care from primary to complex revisions with acetabular platform
- Modular shell designs enabling screw fixation
- Liner removal slot

OR3O◊ delivers…

Low wear rates

OR3O may deliver reduced XLPE wear rates compared to POLARCUP◊ under idealised conditions (ORS1041) and under adverse subluxation (ORS1012)[24,25]

Adequate clearance to accommodate deformation

OR3O device has been shown to incorporate adequate clearance between the insert and liner to accommodate acetabular shell/liner deformation that may occur upon implantation; it should perform similarly to POLARCUP (ORS1905)[27]

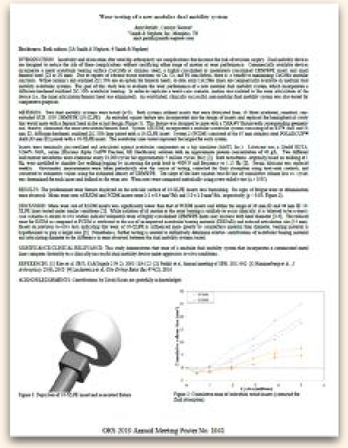
Minimal fatigue failure

OR3O insert will withstand stresses anticipated by sub-optimal acetabular cup orientation, and is comparable to POLARCUP (ORS1036)[28]

Improved corrosion resistance

OR3O may deliver improved corrosion resistance compared to CoCrMo (ORS0528)[29]

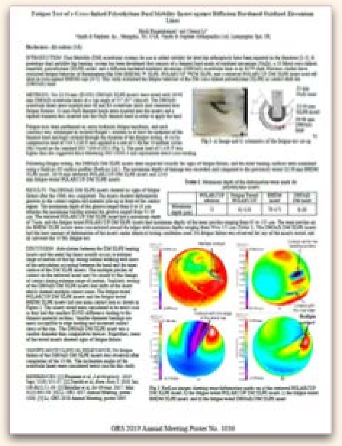
ORS1041



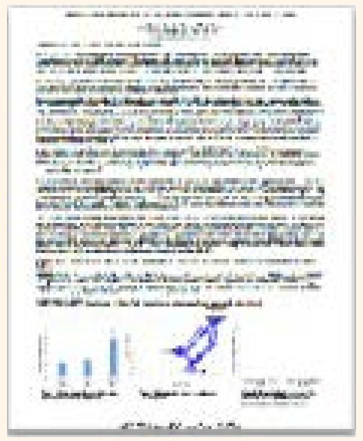
ORS1012

ORS1905

ORS1036



ORS0528



Indications for OR3O◊*30

- Advanced degeneration of the hip joint as a result of degenerative, post-traumatic, or rheumatoid arthritis
- Fracture or avascular necrosis of the femoral head
- Failure of previous hip surgery: joint reconstruction, internal fixation, arthrodesis, hemiarthroplasty, surface replacement arthroplasty, or total hip replacement
- All forms of osteoarthritis
- Patients with hips at risk of dislocation (incl. spinal deformity)
- Femoral neck fracture or proximal hip joint fracture

*This is a full list of the indications for OR3O; use of OR3O may not be suitable for all patients and should be decided by the surgeon on a per-patient basis.

Smith+Nephew

OR3O◊

Dual Mobility with
OXINIUM◊ DH Technology

+ Stability redefined
In black and white

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