

R3think your options



R3think bearings

Not every patient requires the same type of bearing. So why limit your options? The R3° Acetabular System supports **XLPE** and **ceramic** liners allowing you to decide what is right for your patient without changing your system.



R3think acetabular surgery

It is widely accepted that total hip replacement surgery is one of the most successful procedures done today. Typically more thought is given to the choice of stem, than the acetabular prosthesis. So why should you think about your acetabular prosthesis?

Does your acetabular system offer optimal bearing options?

With the R3° system, you have a wide range of possibilities from OXINIUM° heads on XLPE, to ceramic-on-ceramic. No longer are your bearing options limited by your choice of acetabular shell.

Is shell fixation important to you?

Bony ingrowth has been shown to initiate within two to three weeks of implantation with porous coatings,¹ but what is happening in those first few weeks? Can the implant move? With STIKTITE° porous coating, the implant is designed to have excellent initial fixation. STIKTITE coating has been shown to have a higher coefficient of friction against cortical and cancellous bone than trabecular metal.² STIKTITE coating has also been shown to be more stable over time than last generation porous coatings.³ The R3 system gives you the security of knowing that your cup will stay where you put it.

Are postoperative impingement, dislocation and range of motion important to you?

When using most acetabular systems, the liner does not sit flush with the shell. This limits the range of motion and may result in impingement and even joint instability. With the R3 system, we have maximized the range of motion by ensuring that all of our liners sit flush with the rim of the cup and that our head-to-shell diameter ratios are optimized. Combine the R3 system with a Smith & Nephew stem and gain even greater range of motion due to our circulo-trapezoidal neck geometry.^{4,5,6,7}

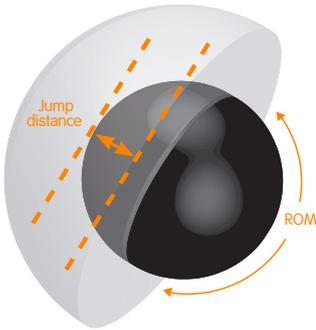


R3think stability

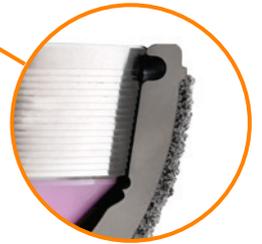
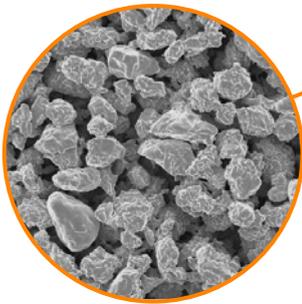
At Smith & Nephew we know that stability is crucial to the success of any hip surgery. The R3° Acetabular System is designed to address stability from all angles. Our revolutionary STIKTITE° porous coating provides proven **cup stability**,^{3,8} and our unique locking system was designed to provide outstanding **liner stability** with all bearing options.⁹

Joint stability and head-to-shell ratios

With the R3 system, we have optimized our head-to-shell ratio. Larger diameter heads **increase the jump distance** and **reduce the dislocation risk**. Additionally, R3 liners sit flush with the rim of the cup to **increase ROM** and **reduce impingement**.^{4,5,6,7}



R3 XLPE liner locking mechanism



R3 ceramic liner locking mechanism

Cup stability and STIKTITE

STIKTITE coating on an R3 Acetabular Shell allows for a **true scratch-fit feel** immediately upon impaction. This is because STIKTITE coating has been shown to have a **higher coefficient of friction** than trabecular metal against all types of bone.² Also, STIKTITE coating has pores that are ideally sized to allow for boney ingrowth. In fact, STIKTITE has been shown to be more stable in the acetabulum when compared to last generation porous coatings.³ These features help ensure your cup will stay where you put it.

Liner stability and the R3 locking system

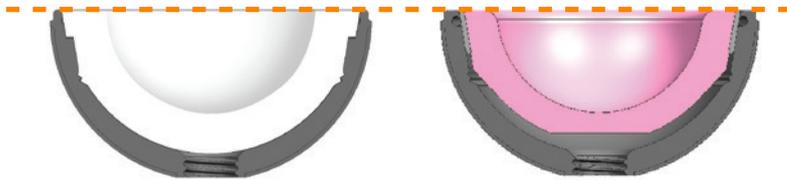
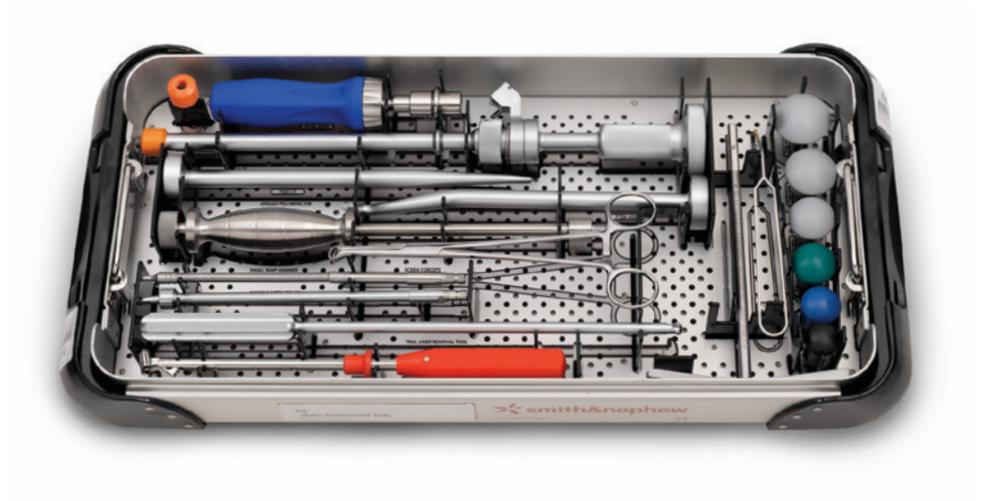
The unique R3 locking system not only accepts **multiple bearings**, it is designed to provide exceptional stability and protection to our XLPE liner to prevent soft tissue entrapment. The **double channel lock** is located deep within the shell to allow **axial stability** of our XLPE liner. The **12 large anti-rotational tabs** designed to provide **rotational stability**.

R3think confidence

Confidence in hip surgery comes from knowing that you are going to have a successful result before you start. We designed the R3° system to help ensure that you get consistently great results every time.

Streamlined instrumentation

The R3 system uses one **streamlined set** to implant all of your bearing options both now and in the future.

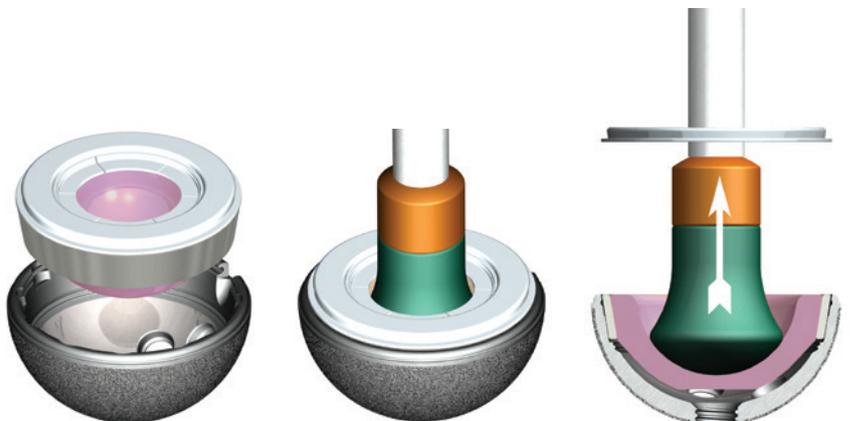


Liner seating

All R3 bearings sit flush with the rim of the shell, which increases the range of motion and reduces the opportunity for impingement postoperatively.^{4,5,6,7} This also provides **intraoperative tactile feedback** that the liner is fully seated inside the shell.

Alignment ring

R3 ceramic liners come preloaded with an alignment ring. The **alignment ring** helps ensure that the **liner seats** in the shell each and every time.^{10,11}



R3° liner offering chart

Cup	XLPE						Ceramic	
	22	28	32	36	40	44	32	36
40	●							
42	●							
44	●							
46		●						
48		●	●				●	
50		●	●				●	
52		●	●	●				●
54		●	●	●				●
56		●	●	●	●			●
58		●	●	●	●			●
60		●	●	●	●	●		●
62			●	●	●	●		●
64				●	●	●		●
66				●	●	●		●
68				●	●	●		●
70				●	●	●		
72				●	●	●		
74				●	●	●		
76				●	●	●		
78				●	●	●		
80				●	●	●		

References

- Lopez-Heredia MA, et al, Bone growth in rapid prototyped porous titanium implants, *Journal of Biomedical Materials*, Part A, pp. 664-673, 2007.
- Heiner AD, Brown TD. Frictional coefficients of a new bone ingrowth structure. Poster no. 1623 presented at: Orthopaedic Research Society Annual Meeting; Feb 11-14, 2007; San Diego, CA.
- Bourne, RB, McCalden, RW, Naude, D, Cherron, KDJ, Yuan, X, Holdsworth, DW. The next generation of acetabular shell design and bearing surfaces. Supplement to *Orthopaedics Innovation in Total Hip Arthroplasty*, pp. 92-96, December 2008.
- Berry DJ, von Knoch M, Schleck CD, Harmsen WS. Effect of femoral head diameter and operative approach on risk of dislocation after primary total hip arthroplasty. *J Bone Joint Surg Am*. 2005 Nov; 87(11):2456-2463.
- Barrack RL, Butler RA, Laster DR, Andrews P. Stem design and dislocation after revision total hip arthroplasty: clinical results and computer modeling. *J Arthroplasty*. 2001 Dec; 16(8 Suppl 1):8-12.
- Barrack RL. Dislocation after total hip arthroplasty: implant design and orientation. *J Am Acad Orthop Surg*. 2003 Mar-Apr; 11(2):89-99.
- Barrack RL, Lavernia C, Ries M, Thornberry R, Tozakoglou E. Virtual reality computer animation of the effect of component position and design on stability after total hip arthroplasty. *Orthop Clin North Am*. 2001 Oct; 32(4):569-577, vii.
- Bourne R. Randomized controlled trial to compare acetabular component fixation of two porous ingrowth surfaces using RSA analysis. London, Ontario, Canada: London Health Science Center. 2007. Internal report on file at Smith & Nephew, Memphis, TN.
- Internal Smith & Nephew testing on file.
- Padgett DE, Miller AN, Su EP, Bostrom MPG, Nestor BJ. Ceramic liner malseating in total hip arthroplasty. Poster PO97 at American Academy of Orthopaedic Surgeons; Feb 14-18, 2007; San Diego, CA.
- Langdown AJ, Pickard RJ, Hobbs CM, Clarke HJ, Dalton DJ, Grover ML. Incomplete seating of the liner with the Trident acetabular system: a cause for concern? *J Bone Joint Surg Br*. 2007 Mar; 89(3):291-295.

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