



Simplifying the Most Clinically Proven¹ Partial Knee in the World

Oxford[®] Partial Knee with
Microplasty[®] Instrumentation



ZIMMER BIOMET
Your progress. Our promise.™

Microplasty Instrumentation



Innovative, Accurate, Reproducible

Microplasty instrumentation simplifies the surgical technique, providing more accurate and reproducible femoral and tibial implant positioning.²

By referencing normal, intact cartilage and the MCL to set the amount of tibial resection, the technique is more bone-conserving compared to Phase 3 Instrumentation.² Microplasty instrumentation has resulted in a greater number of 3 mm and 4 mm bearings being implanted (92% vs. 84%; $p=0.001$)¹ compared to Phase 3 Instrumentation, which have demonstrated better survivorship than 5 mm bearings, or thicker.³

The simplified Microplasty instrumentation showed a reduction in OR time of almost 9 minutes compared to Phase 3 Instrumentation.⁴

Microplasty instrumentation has also been shown to reduce the risk of dislocation compared to Phase 3 Instrumentation.⁵

Key Oxford Microplasty Instruments

Anti-Impingement Guide and Anterior Mill

The design of the anterior mill, in combination with the anti-impingement guide, is intended to allow for precise removal of impinging osteophytes and anterior bone. This helps avoid impingement and is faster than the chisel method with Phase 3 Instrumentation.



Femoral Drill Guide, IM Rod and IM Link

The Femoral Drill Guide linked to the IM rod provides accurate and reproducible femoral alignment.²



Posterior Resection Guide

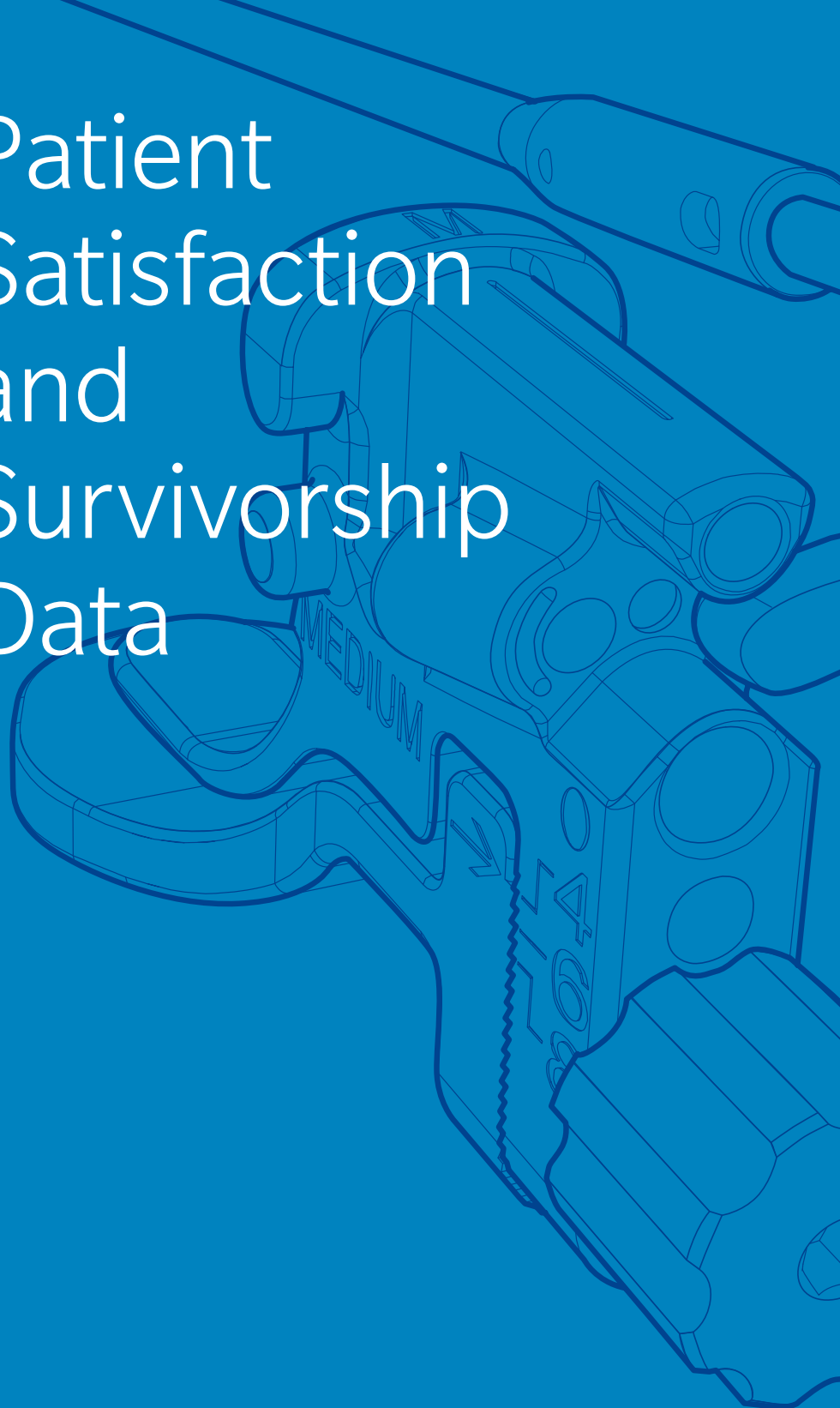
The updated Posterior Resection Guide features a captured cut slot, designed to reduce the risk of over or undercutting the posterior femur.



Tibia Resection Guide, G-Clamp and Femoral Sizing Spoon

The proprietary tibial resection guide uses patients' normal MCL tension to determine the level of tibial resection.

Patient Satisfaction and Survivorship Data



Satisfaction

After one year, a randomized, controlled study showed that significantly more partial knee patients would have the operation again compared to total knee patients.⁶



Survivorship

Now compare this satisfaction data with data from the England and Wales National Joint Register (NJR) which showed 87.5% survivorship of PKA at 10 years compared with 96.6% in cemented TKA.⁷



**There's more to consider
than just survivorship
when deciding between
PKA and TKA.**

It is generally believed that the higher revision rate of PKR is due to a higher percentage of patients with poor results (OKS < 20). However a review of the New Zealand Joint Register by Goodfellow, J. *et al.*, shows that TKR actually has a higher proportion (1.6x) of patients with poor results than PKR.⁸



Revision Threshold

An alternative explanation is that the threshold for revision is different for PKR and TKR. Data from the NZJR shows that if the outcome following TKR is very poor (OKS < 20) then 12% are revised whereas if the outcome following PKR is similarly poor then 63% are revised.⁸ This clearly shows that the threshold for revision of TKR is most likely higher than for PKR.

Furthermore, PKRs have been proven to be easier to revise.⁸ Fortunately, there are ways to reduce the revision rate of PKR through utilization⁹⁻¹¹ and training and education.¹²

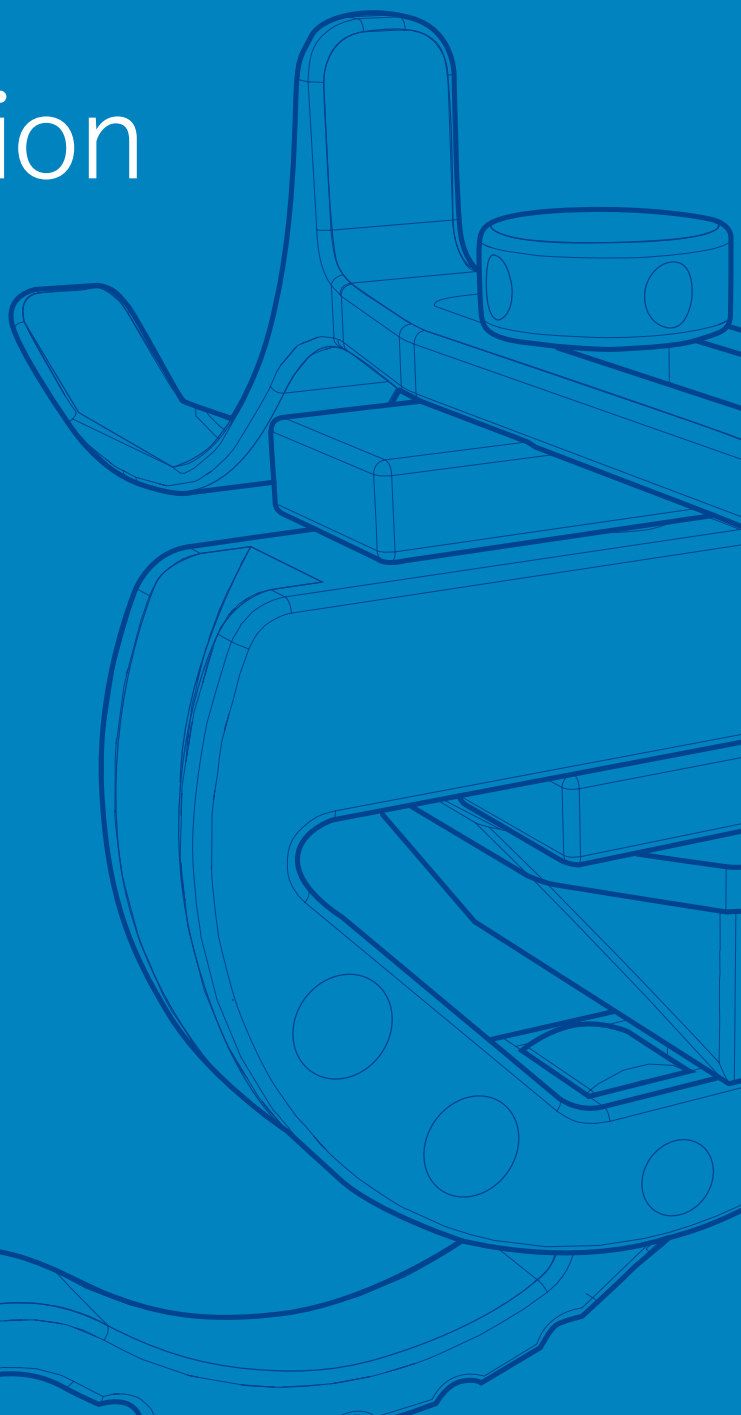
**If TKR had
a very poor
outcome,
then only**

12%
**are
revised⁸**

**If PKR had
a very poor
outcome,
then**

63%
**are
revised⁸**

Closing the Revision Gap



Utilization

The revision gap between PKR and TKR reported in NJRs can be reduced with increased utilization of PKRs.⁷



Liddle, AD. *et al.* found that surgeons utilizing PKR for **under 20%** of their annual knee replacements experienced an **increase in their revision rate**⁹

A review of the NZJR by Treggonig, R. *et al.* found surgeons implanting **at least 12 PKRs** per year are found to have a **decreased revision rate**¹⁰



Similarly a study by Badawy, M. *et al.* found a **lower risk of revision** in hospitals performing **more than 40 PKAs per year** compared to those performing under 10 PKAs per year¹¹



PKA Candidacy

When using criteria published by Kozinn & Scott in 1989 only 5% of patients are candidates for PKA.¹⁶ This may partly explain why there is low utilization of PKA today, with it only being used for 8% of knee replacements worldwide.^{14,15}

In 2015, Scott revisited the 1989 criteria.¹⁶ Using published data, he and 5 co-authors concluded that some of the original contraindications are no longer considered as such, thereby increasing patient candidacy.

Additionally, one study showed that 47.6% of all knee replacement patients are candidates for PKA.¹³

Training & Education

Training and education can have an improved impact in reducing revision rates. The Swedish Knee Arthroplasty Register (SKAR) found that “increased training of surgeons [on the Oxford PKR] showed improved results.”¹²

Zimmer Biomet makes it easy for you to become an Oxford PKR Trained Surgeon, through our ongoing lifetime education program.



Oxford Partial Knee Advanced Instructional Courses

This FDA-required course provides the opportunity to learn more about the indications for the Oxford PKR and to practice the surgical technique, featuring Microplasty instrumentation.



Oxford Partial Knee Master Courses

For more experienced users of the Oxford PKR, classes are available locally throughout the year. For upcoming courses visit biometosa.com



Oxford Partial Knee Visitation Program

View live surgeries in a hospital setting and discuss implant design rationale.



Touch Surgery Application

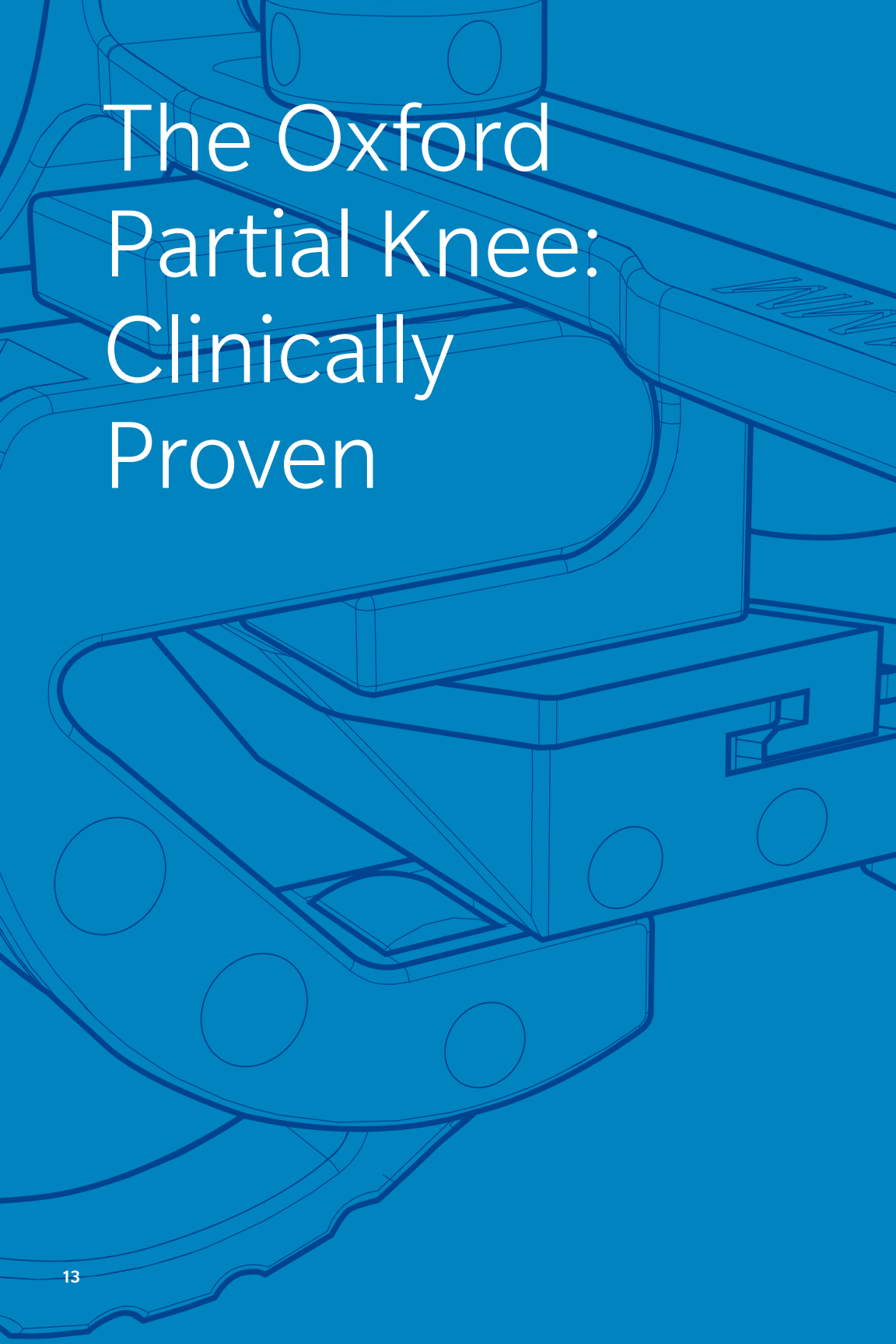
To help surgeons stay current with the Oxford Partial Knee surgical technique, Zimmer Biomet has partnered with Touch Surgery to create an interactive surgical technique simulator featuring the Oxford Microplasty Instrumentation. The app is available on iOS and Android.



Download on the
App Store

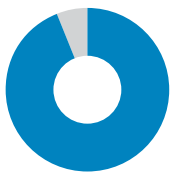


GET IT ON
Google Play

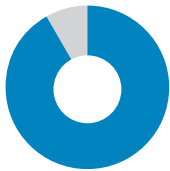
A blue line-art illustration of a partial knee prosthesis, showing the femoral and tibial components. The femoral component is at the top, and the tibial component is below it. The tibial component has a rectangular cutout for the patellar. The background is a solid blue color.

The Oxford Partial Knee: Clinically Proven

The Oxford
PKR has over
40 years
of clinical
experience
and is the only
partial knee
that's been
clinically proven
in survivorship
at minimum 15¹⁷
and 20 years.¹⁸



94%
at 15 years¹⁷



91%
at 20 years¹⁸

Benefits of PKA vs. TKA*

Better range of motion

compared to TKA^{19,20}

Better functionality

than TKA²¹

Substantial cost savings of approximately \$3,261 per knee¹³



Shorter hospital stays¹⁹

average length of stay in days

Lower risk of postoperative complications^{22*}

At least 0.8 days

average reduction in length of stay in favor of PKA¹⁹

Additional cost savings

when associated with an accelerated recovery protocol¹⁹



Lifetime Warranty

Zimmer Biomet strongly believes in the importance of patient satisfaction and the clinical survivorship of the Oxford PKR.

That's why every Oxford Partial Knee implanted on or after April 29, 2013, now comes with the only Lifetime Knee Implant Replacement Warranty[†] in the U.S. It's your assurance that Zimmer Biomet not only makes a proven partial knee, we stand behind it 100%.

If a patient receives an Oxford Partial Knee and it has to be revised for any reason, Zimmer Biomet will cover the cost of the Zimmer Biomet replacement knee implant.

References

* Some studies included Oxford Partial Knees as well as other 'non-Biomet' partial knees

1. Data on file at Zimmer Biomet
2. Hurst JM *et al.* Radiographic Comparison of Mobile- Bearing Partial Knee Single-Peg versus Twin-Peg Design. *The Journal of Arthroplasty*. 30(3): 475-478. 2015.
3. Pandit, H., *et al.* The Clinical Outcome of Minimally Invasive Phase 3 Oxford Unicompartmental Knee Arthroplasty: A 15 Year Follow Up of 1000 UKAs. *Bone Joint J*. 2015 Nov;97-B(11):1493-500
4. Berend, K, *et al.* New Instrumentation Reduces Operative Time in Medial Unicompartmental Knee Arthroplasty Using the Oxford Mobile Bearing Design. *JISRF. Reconstructive Review*. Vol. 5, No. 4, December 2015.
5. Koh IJ, *et al.* Are the Oxford medial unicompartmental knee arthroplasty new instruments reducing the bearing dislocation risk while improving components relationships? A case control study. *Orthop Traumatol Surg Res* (2016), <http://dx.doi.org/10.1016/j.otsr.2015.11.015>
6. Beard D, Price A, Davies L, *et al.* A Multicentre Randomised Study Comparing Total or Partial Knee Replacement – One Year Results of The Topkat Trial. BASK. Liverpool, UK 2016.
7. NJR (National Joint Registry of England and Wales) 12th annual report. 2014.
8. Goodfellow, J.W. *et al.* A critique of revision rate as an outcome measure. Re-Interpretation Of Knee Joint Registry Data. *J Bone Joint Surg [Br]* 2010;92-B:1628-31.
9. Liddle, AD, *et al.* Optimal usage of unicompartmental knee arthroplasty. *Bone Joint J* 2015;97-B:1506–11
10. Tregonning, R. *et al.* Early Failure Of The Oxford Phase 3 Cemented Medial Uni-Compartmental Knee Joint Arthroplasty: An Audit Of The Nz Joint Registry Over Six Years. 2015, 97-B (SUPP 2).
11. Badawy, M *et al.* Higher revision risk for unicompartmental knee arthroplasty in low-volume hospitals Data from 5,791 cases in the Norwegian Arthroplasty Register. *Acta Orthopaedica* 2014; 85 (4): 342–347.
12. Swedish Knee Arthroplasty Register. Annual Report. 2011.
13. Willis-Owen CA, *et al.* Unicondylar knee arthroplasty in the UK National Health Service: An analysis of candidacy, outcome and cost efficacy. *Knee*. 2009 Dec;16(6):473–8. Publication was performed from a UK perspective, for illustration purposes results have been converted to US\$ using an average US\$ to UK pound conversion rate as at 2008 (<http://www.x-rates.com/average>).
14. European Millennium Report Study 2013.
15. US Millennium Study 2014.
16. Kozinn, S and Scott, R. Current Concepts Review Unicondylar Knee Arthroplasty. *The Journal of Bone and Joint Surgery*. VOL. 71-A, NO. 1. January 1989.
17. Price, A. *et al.* Long-term Clinical Results of the Medial Oxford Unicompartmental Knee Arthroplasty. *Clinical Orthopedics and Related Research*. 435:171–180. 2005
18. Price AJ, Svard U. A second decade lifetable survival analysis of the Oxford unicompartmental knee arthroplasty. *Clin Orthop Relat Res*. 2011 Jan;469(1): 174-9.
19. Lombardi, A. *et al.* Is Recovery Faster for Mobile-bearing Unicompartmental than Total Knee Arthroplasty? *Clinical Orthopedics and Related Research*. 467:1450-57. 2009.

20. Amin A, *et al.* Unicompartmental or Total Knee Replacement? A Direct Comparative Study of Survivorship and Clinical Outcome at Five Years. *JBJS Br.* 2006; 88-B; Suppl 1, 100.
21. Lygre, SHL *et al.* Pain and Function in Patients After Primary Unicompartmental and Total Knee Arthroplasty. *JBJS Am.* 2010; 92:2890-2897.
22. Brown, NM, *et al.* Total Knee Arthroplasty Has Higher Postoperative Morbidity Than Unicompartmental Knee Arthroplasty: A Multicenter Analysis. *The Journal of Arthroplasty.* (2012)

† Subject to terms and conditions within the written warranty.

- Applies to Oxford Partial Knees implanted on or after 4-29-2013
- Covers the replacement of Oxford Partial Knee components for any reason
- Covers the cost of the replacement implant only; does not cover hospital costs, co-pays, or other related expenses
- Limited to no more than one complete replacement of the product
- Any additional costs associated with surgery or follow-up are not covered – only the implant components

To find out more, visit www.oxfordpartialknee.com

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The Oxford Partial Knee is intended for osteoarthritis or avascular necrosis limited to the medial knee compartment and is to be implanted with bone cement. The Oxford Knee is not indicated for use in the lateral compartment or for patients with ligament deficiency. Potential risks include, but are not limited to, loosening, dislocation, fracture, wear, and infection, any of which can require additional surgery. For complete prescribing information, see the package insert and www.zimmerbiomet.com.

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