



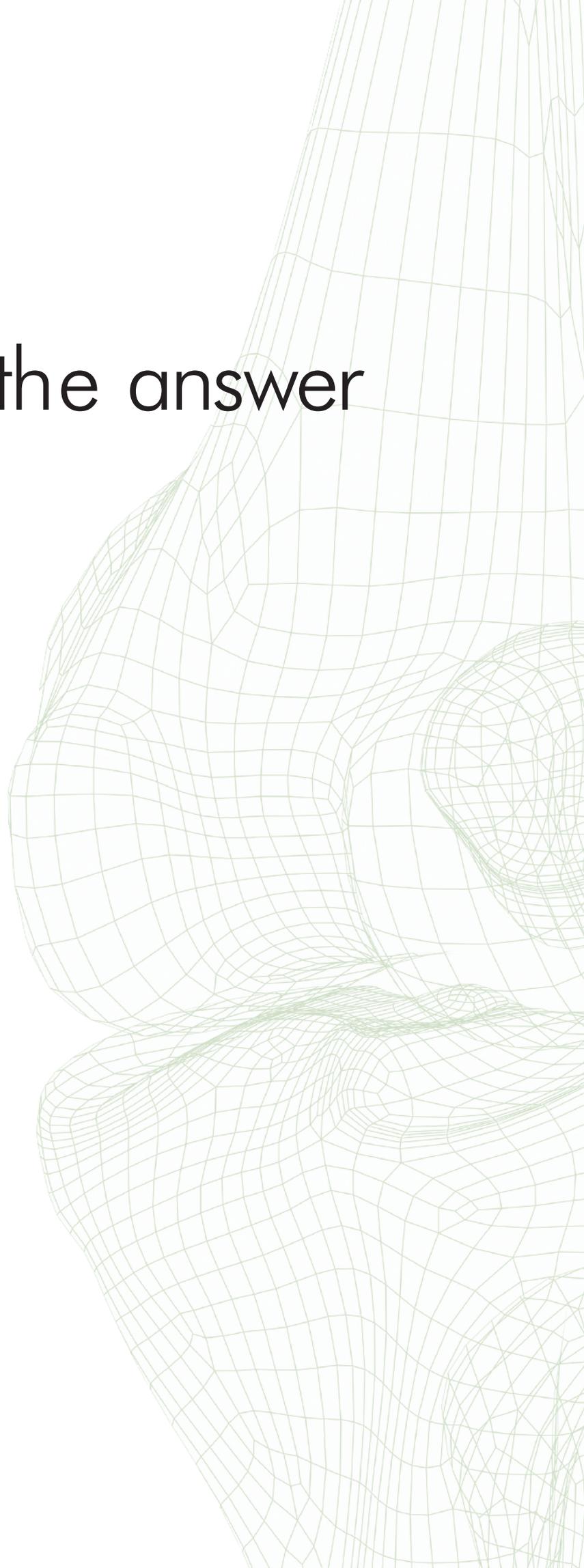
# why bicompartamental?

A REVOLUTIONARY ALTERNATIVE TO TOTAL KNEE REPLACEMENTS



# TKR **is not** **always** the answer

Today, many patients with medial or lateral disease and patellofemoral involvement receive a Total Knee Replacement (TKR) without consideration of other options.



## TKR is not always needed

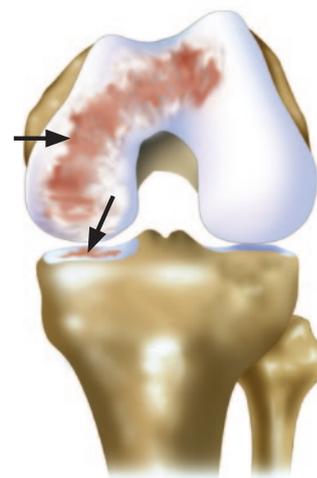
Osteoarthritis (OA) disease pattern studies have shown that bicompartamental disease is the most common disease pattern found amongst knee OA patients.

- *Ledingham J., et al.*, demonstrated through radiographic examination of 252 patients (470 knees) with OA of the knee that **58% of the knees were affected with bicompartamental OA**; 50% in the medial compartment/PF joint and 8% in the lateral compartment/PF joint<sup>1</sup>
- *Rolston L., et al.*, tracked 100 patients older than 40 years of age, and identified through radiographic interpretation that **73% had involvement of both medial and patellofemoral compartments, but no lateral involvement**<sup>2</sup>



Not all of the patients in these study populations are candidates for knee arthroplasty and some may never go on to have a knee replacement. But initial data studying the disease pattern seen amongst actual knee arthroplasty patients indicate a third of procedures are performed on patients with bicompartamental disease and intact cruciate ligaments.

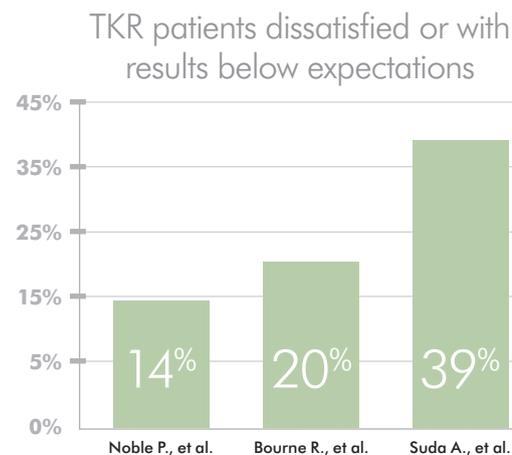
- A study investigating incidence of OA intra-operatively in a series of 237 consecutive knee replacement patients showed **28% of patients had bicompartamental disease and intact ligaments**<sup>3</sup>



## Surgeon satisfaction vs. patient satisfaction

Advances in Total Knee Arthroplasty (TKA) and durability of results have made it the gold standard for many surgeons treating knee OA. However, in studies of patient satisfaction, a significant minority of patients was less satisfied with their outcome than surgeons typically think.

- *Noble P., et al.*, surveyed 253 TKR patients with minimum 1 year follow-up and identified that **14% of TKR patients were either dissatisfied or very dissatisfied**<sup>4</sup>
- *Bourne R., et al.*, reviewed results of over 1,700 procedures and reported **1 in 5 patients were either dissatisfied or very dissatisfied with their TKR**<sup>5</sup>
- *Suda A., et al.*, in a 46 patient survey completed 3 years before and after TKA surgery, that **39% reported the result of their TKR to be below their expectations**<sup>6</sup>



# the **PKR** advantage

As patients become more demanding and more active, the interest in bone and tissue sparing Partial Knee Replacement (PKR) approaches has increased dramatically.

## More surgeons recommending PKR

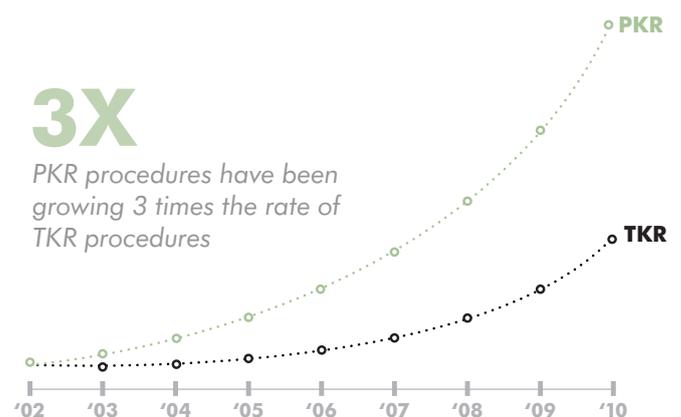
Recent data indicates surgeons are recommending PKR to their patients more and more frequently.

- *Riddle, et al.*, in a 2008 study measuring the incidence of PKR in the United States over an 8 year period, reported that **PKR procedures grew at 3 times the rate of TKR procedures**<sup>7</sup>

## A less invasive option

In studies measuring the role the ACL plays in proprioception, or joint sense, preserving the ACL appears to provide patients with a much better sense of the function of their knee.

- *Pap G, et al.*, in a comparative study of 20 patients with a torn ACL and 15 patients with an intact ACL, assessed proprioception using threshold levels for the perception of knee movement and found that **failure to appreciate movement was significantly greater in knees with ACL loss** compared with the undamaged knees<sup>8</sup>
- *Carter, N., et al.*, studied the impact of losing the ACL on Joint Position Sense (JPS) in 50 patients and found that **JPS was impaired in ACL deficient knees and did not improve with exercise therapy**<sup>9</sup>



“...failure to appreciate movement was significantly greater in knees with ACL loss...”

## Higher patient satisfaction and better outcomes

In comparative studies of patients with both PKR and TKR implants, patients have reported better early flexion, higher range of motion and a more natural feel of the PKR implant.

- *Dalury DF, et al.*, in a 2009 study of 23 bilateral patients receiving PKR implants in one knee and a TKR implant in the other knee, identified that more than **50% of patients preferred their PKR implant to their TKR implant** while none preferred their TKR to their PKR implant<sup>10</sup>
- *Laurencin, CT*, in a comparative study of 23 patients with PKR implants in one knee and TKR implants in the other knee, noted those patients reported **better early flexion, higher range of motion and a more natural feel** in the knee with the PKR implant<sup>11</sup>

Other studies comparing PKR and TKR indicate that PKR solutions have demonstrated a benefit in function and natural kinematics.

- *Rougraff, B., et al.*, reported in a comparison of patients with UKR and TKR, **reported that UKR patients had better range of motion and function**<sup>12</sup>
- *Patil S, et al*, in a biomechanical study, identified that **tibial axial rotation in a native knee appears comparable to tibial axial rotation in a PKR knee**, while TKR knees show a significant difference<sup>13</sup>
- *Lastad-Lygre S., et al.*, collected postoperative, patient-reported data from over 1,344 patients, TKR (972 patients) and PKR (372 patients), and found that patients with **PKR implants had fewer problems with activities that involved bending the knee**<sup>14</sup>

## Positive initial long-term data

While aggregate data suggests that TKR remains the gold standard on durability, partial knee procedures, when performed well in appropriately selected patients, have been shown to do as well as traditional TKR.

- *Newman JH, et al.*, showed that **PKR patients had better early function and maintained those advantages at 15 years vs. TKR**, with no disadvantage on durability<sup>15</sup>
- *Berger RA, et al.*, identified in a prospective study of 62 consecutive fixed bearing UKR procedures, that **unicompartmental survivorship was at 98% after 10 years**<sup>16</sup>

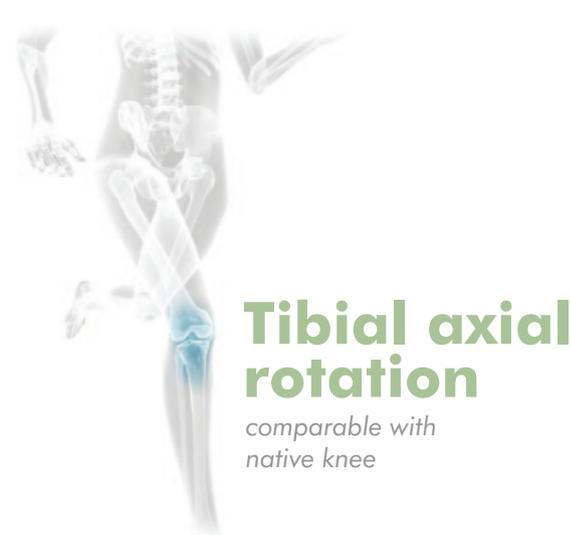
## TKR vs. PKR



TKR results in significant bone loss



PKR preserves more of your bone



“Survivorship was at **98%** after 10 years.”

# offering the **PKR** **advantage** to bicompartamental patients

## **A revolutionary alternative**

The iDuo® G2 bicompartamental knee resurfacing system offers a revolutionary alternative to traditional TKR by combining proven TKA principles for patellofemoral treatment with the advantages of the ConforMIS partial knee system.

With the iDuo G2, a surgeon can treat just the affected compartments with a precise, patient specific implant that delivers unparalleled fit, preserves all ligaments and conserves far more bone than traditional TKA. Not only does this provide patients with a more natural knee motion, it also preserves future treatment options—a benefit to both patients and surgeons alike.

## **True patient-specific design makes a difference**

Patient satisfaction is a result of multiple factors: setting realistic expectations, proper implant design, intuitive/reproducible surgical technique, and post-op patient compliance. A true patient specific implant and instrument system ensures the implants will provide optimal fit for the patient while delivering a simplified surgical technique that makes the OR experience smooth and reproducible.

- The iDuo G2 delivers a solution with a patella femoral treatment that is based on proven principles from TKR, with the ACL and PCL preserving advantages of a partial knee solution
- The design allows for a patient-specific fit that avoids overhang and under-coverage
- Its integrated single piece, monoblock design also avoids the complexity of matching two implants and managing the transition zone in a dual implant procedure
- This iDuo G2 bicompartamental solution is delivered with the unique advantages of the ConforMIS G2 system, including a wear-optimized design approach on the femur and tibia, and the disposable instrumentation available with all ConforMIS products



iDuo G2

**See the ConforMIS advantage for yourself.  
Contact us for an in office demo.**

Call 781.345.9001 or visit [www.conformis.com](http://www.conformis.com)



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ConforMIS, Inc.

11 North Avenue • Burlington, MA 01803 • Phone: 781.345.9001 • Fax: 781.345.0147