

Dear Specialist Orthopaedic Surgeon

Total Knee Replacement (TKR)

'CUSTOM MADE FOR YOU' - ACHIEVING THE 'OPTIMAL' KNEE REPLACEMENT

The rationale for referral for Patient Specific Instrumentation and 'Custom' TKR-Origin



Total Knee Replacement (TKR) has become the standard treatment in severe degenerative joint disease of the knee. It is a reliable procedure with some 77,000 TKR's undertaken each year in the UK using 'standard' implants. More recently, irrespective of the mechanical success and the longevity of the implant as reported by our UK's National Joint Registry, the emphasis has been on patient recorded satisfaction and functional outcomes.

The ORIGIN® Custom implant was developed by Symbios to address patient dissatisfaction following Total Knee Replacement using 'standard' implants, where dissatisfaction can be as high as 20%.

MANAGEMENT FACTORIALS IN TOTAL KNEE ARTHROPLASTY

Patient dissatisfaction following total knee replacement

A GROWING CONCERN?



33% Pain

The role of pain and function in determining patient satisfaction after total knee replacement

DATA FROM THE NATIONAL JOINT REGISTRY FOR ENGLAND & WALES



20% Pain

SYMPOSIUM: PAPERS PRESENTED AT THE ANNUAL MEETINGS OF THE KNEE SOCIETY

Patient Satisfaction after Total Knee Arthroplasty Who is Satisfied and Who is Not?

Clin Orthop Relat Res [2010] 468:57-63
DOI 10.1007/s 11999-009-1119-9

20% Unsatisfied

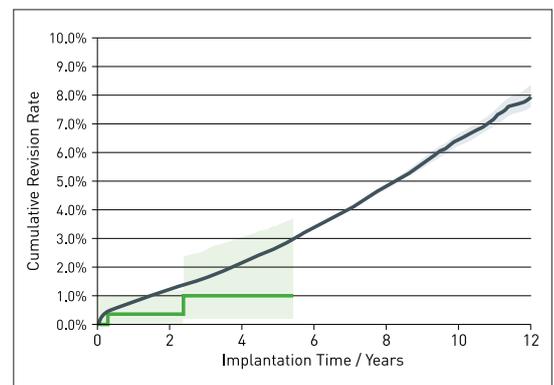
The rationale for referral for Patient Specific Instrumentation and 'Custom' TKR-ORIGIN® is to address this unacceptable statistic in the modern era of innovative orthopaedics delivering patient matched solutions.

Symbios are a leading opinion in the design and manufacture of Custom implants, with an experience spanning 40 years and some 30,000 implantations throughout Europe.

The 15-year published clinical results (COOR 2009) for the Symbios Custom hip, further supported by the results in the UK's National Joint Registry (NJR) in 331 patients⁽¹⁾, demonstrates a significantly lower revision rate at 4 years. The NJR reports a similarly lower revision rate⁽²⁾ in 576 patients who received a Custom knee at 4-years. The NJR results for both Custom Hip implant and Custom Knee implant are uncannily similar. Symbios believe that both HIP-PLAN® and KNEE-PLAN® proprietary software is a technology that is easily transposed to produce better outcomes for patients.

* (1) 0.99% at 4 years (p= 0.057) in 331 patients vs 2.72% for all THR's on the registry

* (2) 0.5% at 4 years (p=0.3) in 576 patients vs 1.9% for all TKR's on the registry



Continued overleaf →

Symbios UK Ltd

Unit 2, Silverdown Office Park, Fair Oak Close, Clyst Honiton, Exeter, Devon EX5 2UX UK
T +44 1 392 365 884 F +44 1 392 365 885

www.symbiosorthopaedics.co.uk



KNEE-PLAN® Pre-Operative Planning

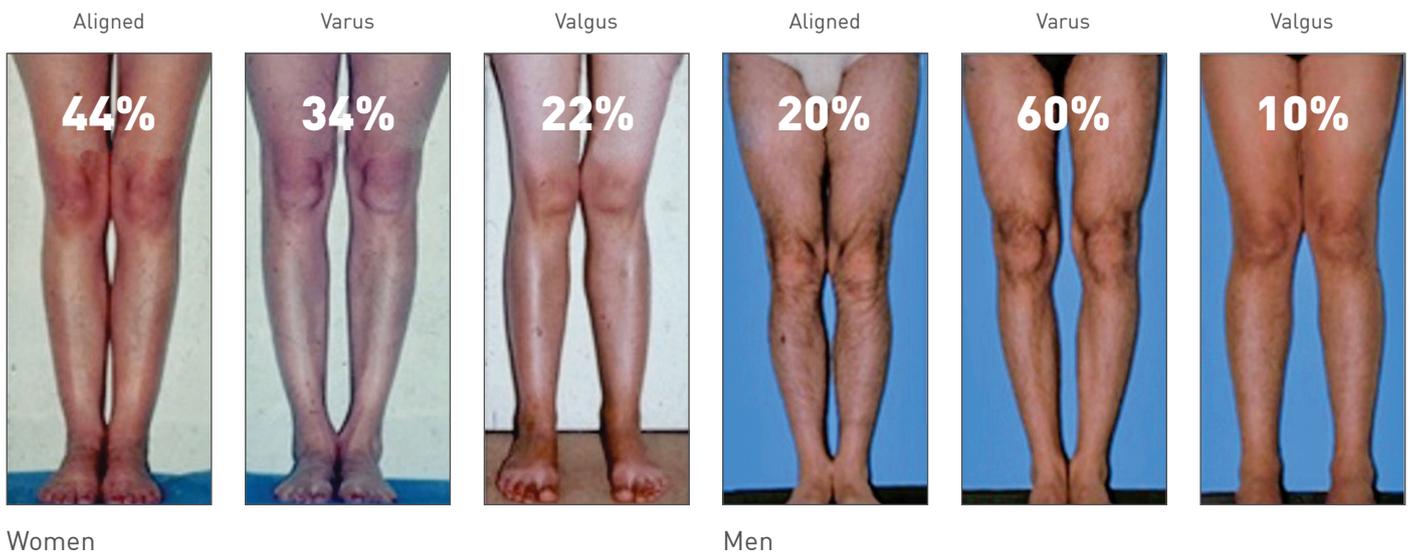
Symbios, having recognised that patient expectations have changed, have used their proprietary pre-operative planning software, KNEE-PLAN® to provide patient specific solutions to deliver the 'forgotten' Total Knee Replacement:

A number of factors contribute to poor PROMS outcomes following Total Knee replacement:

- ▶ Implant sizing
- ▶ Implant orientation
- ▶ Alignment accuracy
- ▶ Joint line native geometry



Very simply, we are not all the same and 'one size' does not fit all:



Our Patients

Young, motivated and active patients would benefit significantly from TKR with Patient Specific instrumentation and an ORIGIN® Custom Implant. The cost is comparable with standard TKR as determined by the philosophy of the Symbios organisation, which is to bring the benefits of Patient Specific Instrumentation to all, as a targeted approach to improving PROMS outcomes in this high demand group of patients.

We believe this to be a cost-effective model with value to both patient, the NHS and the insurer.



Our 'Mission'

CT 3D planning using KNEE-PLAN® pre-operative planning software allows the native anatomy to be faithfully restored, whether we are male or female, varus, valgus or perfectly aligned, our knee replacement will feel natural and comfortable.

1 A fully contoured Custom femoral component that dynamically drives natural kinematics:

2 Sizing of the components will be an exact science; no compromise is necessary as is the case with 'traditional' TKR using 'off the shelf' components:

3 An alignment strategy driven by the clinician, faithful to their 'reconstruction philosophy':

FREEMAN INSALL 1970	HUNGERFORD KRACKOW 1980	HOWELL 2006	VENDITTOLI 2010
<input type="checkbox"/> Mechanical Alignment	<input type="checkbox"/> Anatomical Alignment	<input type="checkbox"/> Kinematic Alignment	<input type="checkbox"/> Adjusted or ORIGIN® Alignment
HKA 180°	HKA 180°	HKA 175°	HKA 178°

4 Alignment accuracy that leads to a perfectly balanced knee and optimal patella tracking:

5 Only with the powerful imagery of a CT scan can we determine and reproduce within the ORIGIN® implant, a joint geometry that respects the patients native joint line orientation:



Health-Care Economics - Efficiencies

In studies conducted at the BMI Meriden Hospital, Coventry, the average procedure time for an ORIGIN® TKR is 71 minutes, this INCLUDES the set-up time & clean-down time. No instruments assembly, disassembly, pre-wash or sterilisation process are required for ORIGIN® surgery representing 169 minutes of 'theatre costs' savings.



Cost

Revision surgery following poor outcomes has significant cost implications: Recently published in the Bone Joint J. 2015 Feb; 97-B (2): 197-20, it was estimated that the cost of aseptic revision surgery following failed TKR was £9,655, a 40% uplift on current standard tariff. There is therefore, urgent need to improve outcomes (PROMS) following TKR.

Clinical Governance



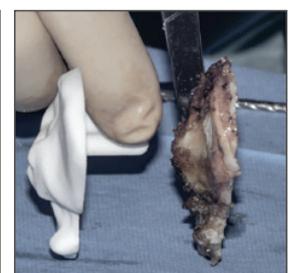
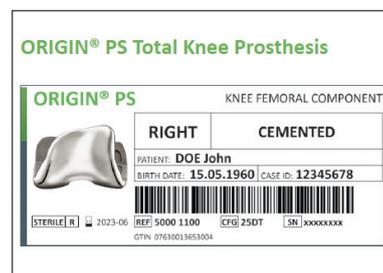
The ORIGIN® PS Cemented prosthesis is a custom-made posterior-stabilized Total Knee prosthesis (fixed bearing). The concept is based on the systematic analysis of patient's constitutional morphotype. Implants are designed to provide a joint reconstruction that is the closest as possible of the anatomy and kinematics of each patient (customized fit to the native joint shape), and are delivered with patient-specific 3D printed cutting-guides and instruments.

Summary

The 'journey' starts with a Symbios protocol CT scan.

The clinician will be provided with a CONNECT® account and log in details to access the planning and design process. The clinicians preferred alignment strategy is engineered into the implant design, meaning that the process is surgeon driven. Delivery of the 'Knee in a Box' is direct to the operating theatre within 5 weeks.

Including the single-use instruments, cut guides and bone models.



Yours faithfully

The Symbios Team

Symbios UK Ltd

Unit 2, Silverdown Office Park, Fair Oak Close
Clyst Honiton, Exeter, Devon EX5 2UX UK
T +44 1 392 365 884 F +44 1 392 365 885

www.symbiosorthopaedics.co.uk

