



Zimmer® NexGen®  
Complete Knee  
Solutions CR-FLEX and  
LPS-FLEX System

White Paper Journal  
Reprint Abstracts

*Title*

**KNEE KINEMATICS WITH A HIGH-FLEXION POSTERIOR STABILIZED TOTAL KNEE PROSTHESIS: AN IN VITRO ROBOTIC EXPERIMENTAL INVESTIGATION**

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*Purpose/Premise*

This article evaluates the design of the *NexGen* LPS-Flex Knee.

*Material and Methods*

A robotic testing system was used to test 13 cadaver knees before and after TKA. Posterior translation of the femoral condyles and tibial rotation were recorded at flexion angles between 0° and 150°.

*Outcomes*

At 150°, the femoral translation of the replaced knees was approximately 90% of that of the intact knees. Internal tibial rotation occurred for all knees, and the cam-spine mechanism engaged at approximately 80° and disengaged at approximately 135°. After 135°, additional posterior translation continued to 150°.

*Conclusion/Recommendation*

The authors concluded that the tibiofemoral kinematics were similar for the intact knee and the replaced knee at high flexion angles. The cam-spine mechanism enhanced posterior femoral translation only at the mid-range of flexion. The femoral component geometry of the high-flexion prosthesis may improve posterior tibiofemoral articulation contact at high flexion angles.

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