Reply to the Letter to the Editor

Reply to the Letter to the Editor: The John Insall Award: No Functional Benefit After Unicompartmental Knee Arthroplasty Performed With Patient-specific Instrumentation: A Randomized Trial

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To the Editor,

We would like to thank Logishetty and colleagues for their enthusiastic evaluation and alternative interpretation of our work.

(RE: Ollivier M, Parratte S, Lunebourg A, Viehweger E, Argenson JN. The John Insall Award: No functional benefit after unicompartmental knee arthroplasty performed with patient-specific instrumentation: A randomized trial. [Published online ahead of print March 20, 2015]. *Clin Orthop Relat Res*. DOI: [10.1007/s11999-015-4259-0](https://doi.org/10.1007/s11999-015-4259-0)).

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Indeed, our department has been a fervent supporter of unicompartmental knee arthroplasty (UKA) for many years [2, 3]. We also have been involved in several trials of patient-specific instrumentation (PSI) on both UKA and TKA in the last several years [1, 5, 6], highlighting the frequency of outliers, the proportion of PSI procedures that needed to be aborted or modified during surgery, as well as the additional costs incurred by the new technology both directly and in terms of the surgeon's time. We initially hypothesized [4] that PSI could be a useful tool for UKA, particularly to improve the tibial cut. Therefore, we

decided to evaluate PSI-UKA in the setting of a randomized controlled trial highlighting the frequency of outliers, the proportion of PSI procedures that needed to be aborted or modified during surgery, as well as the additional costs incurred by the new technology both directly and in terms of the surgeon's time, but did not succeed in demonstrating any clinical or radiological differences 1 year after surgery between PSI and conventional UKA [4].

As pointed out by Logishetty and colleagues, this might be related to the experience in UKA of the two surgeons. However, our analysis is different because in three cases (10%) the same two UKA-trained surgeons had to perform a recut of the tibial plateau due to insufficient bone resection with the PSI system [4]. It is important to recognize that less-experienced surgeons might have ignored or missed this slight bone-cut difference conducing to potential mechanical axis modifications, and so the contention of Logishetty and

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colleagues that PSI would be especially helpful to less-experienced surgeons indeed may not be correct. Additionally, planning a PSI UKA requires good knowledge of UKA positioning and technique based on surgeon experience to properly define the ideal placement of the implant according to the patient's anatomical specificities (particularly on the tibial side). This crucial step of planning supposes an active involvement of a surgeon experienced enough to correct the cuts as proposed by the PSI software, based on a patient's clinical examination, and standing full-length and stress radiographs. For those two reasons, we believe that PSI-UKA is not yet ready to be entrusted to low-volume UKA surgeons. Training on UKA indications, planning, and technique remains crucial. Improvements, particularly concerning the reliability of the tibial resection, remain mandatory before recommending PSI-UKA as a routine basis for low-volume UKA surgeons.

We will continue working to improve the reliability and the accuracy of PSI-UKA in order to make this nice innovation a useful tool for every surgeon. The true goal is improving the quality of life of each patient by making every surgery reproducible with mature and reliable surgical tools.

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