



Bergiers S, Hothi HS, Henckel J, Eskelinen A, Skinner J, Hart A. Wear performance of retrieved metal-on-metal Pinnacle hip arthroplasties implanted before and after 2007. *Bone Joint Res* 2018;7:595-600.

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Authors' reply:

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Sir,

As authors of the original article, we appreciate the interest shown by Mr Langton in our study¹ and will take this opportunity to answer his queries.

The outcome measure in this study was *wear performance*.

As correctly stated by Mr Langton, following the referenced protocol,² an accurate measure of both *wear volume* and the *unworn diameter* of these implants can be obtained. The optimal diametrical clearance between the bearing components of hip arthroplasties is not fully understood.

In response to comments made by Mr Langton regarding the use of implantation dates, we emphasize that this was consistent with previous studies on the same topic and the following statement made by Langton et al: "Five out of the 43 (12%) hips *implanted prior to 2006* were found to be below the lower tolerance band compared with 43 out of the 118 (36%) *implanted from 2006 onwards*".^{3,4,5}

Mr Langton also queries the following sentence found in this publication: "As with all retrieval studies, we do not know the as-manufactured dimensional state of the components prior to implantation and how this would have impacted the individual clearances of each implant". This statement should not be misinterpreted as a reference to the diametrical size of the *perfect sphere* estimated to be the implant's pristine geometry, but rather the as-manufactured state, inclusive of all non-uniform variations due to all manufacturing tolerances (e.g. in sphericity) and surface defects.

Concerns were also raised regarding the following sentence: "evidence raises doubts regarding the use of 'revision rate' and 'time to revision' as reliable indicators of implant performance, especially in the analysis of hips with large ranges of implantation dates". We agree that 'revision rates' or 'time to revision' are reliable indicators of implant performance and indeed form the basis of the national joint registries. The point being made in the context of this study was that external factors

such as increased vigilance and medical alerts may have reduced the threshold for revision, even if the amount of implant wear was not significantly different.

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1. **Bergiers S, Hothi HS, Henckel J, Eskelinen A, Skinner J, Hart A.** Wear performance of retrieved metal-on-metal Pinnacle hip arthroplasties implanted before and after 2007. *Bone Joint Res* 2018;7:595-600.
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5. **Matharu GS, Nandra RS, Berryman F, et al.** Risk factors for failure of the 36 mm metal-on-metal Pinnacle total hip arthroplasty system: a retrospective single-centre cohort study. *Bone Joint J* 2017;99-B:592–600.