

Letter to the Editor

The Functional Outcome of Hip Resurfacing and Large-head THA is the Same

A Randomized, Double-blind Study

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Dr. Lavigne and his coauthors [2] performed a PRCT to address a question that needs to be answered urgently: can resurfacing provide superior function over conventional hip replacement for active patients that might make the reported higher risk of reoperation worthwhile?

However, their power calculation was based on the premise that anything less than a 12% increase in normal walking speed would not be significant on the grounds that an earlier study had found such a difference between patients who had hip resurfacing and those with an arthritic hip [3]. This position is obtuse. The difference between the comfortable walking speeds of fit men in their 30s and 70s is only 0.13 m/second or less than 10% [1]. In fast walking, as measured by Lavigne et al. [2], which might be considered a surrogate for top speed, the patients who had hip resurfacing walked 0.9 m/second, or 5% faster than the

patients who had total hip replacements, however the study was not powered to detect this difference.

Others have noted that patients who had hip resurfacing have higher UCLA scores than patients who had hip replacements [4], suggesting that at higher levels of activity, the presence of a normal femoral neck and head might confer some advantage.

This costly and well-conducted trial has contributed a detailed methodology to the literature. However, by setting a bar of 12% superiority, the authors appear determined to avoid finding a 10% significance, a level that medical interventions use across many specialities. Even a 5% performance improvement in any sport would constitute overwhelming superiority. Such a type II error should be acknowledged in a trial which genuinely is seeking to establish superiority of an intervention.

(Re: Lavigne M, Therrien M, Nantel J, Roy A, Prince F, Vendittoli PA. The John Charnley Award: The functional outcome of hip resurfacing and large-head THA is the same: arandomized, double-blind study. *Clin Orthop Relat Res.* 2010;468:326–336.)

No response was received from Dr. Lavigne for this letter.

Each author certifies that he or she has no commercial associations (eg, consultancies, stock ownership, equity interest, patent/licensing arrangements, etc) that might pose a conflict of interest in connection with the submitted article.

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References

1. Bohannon RW, Andrews AW, Thomas MW. Walking speed: reference values and correlates for older adults. *J Orthop Sports Phys Ther.* 1996;24:86–90.
2. Lavigne M, Therrien M, Nantel J, Roy A, Prince F, Vendittoli PA. The John Charnley Award: The functional outcome of hip resurfacing and large-head THA is the same: a randomized, double-blind study. *Clin Orthop Relat Res.* 2010;468:326–336.
3. Mont MA, Seyler TM, Ragland PS, Starr R, Erhart J, Bhave A. Gait analysis of patients with resurfacing hip arthroplasty compared with hip osteoarthritis and standard total hip arthroplasty. *J Arthroplasty.* 2007;22:100–108.
4. Pollard TC, Baker RP, Eastaugh-Waring SJ, Bannister GC. Treatment of the young active patient with osteoarthritis of the hip: a five- to seven-year comparison of hybrid total hip arthroplasty and metal-on-metal resurfacing. *J Bone Joint Surg Br.* 2006; 88:592–600.