Poisons Information Service is that the dose of methylene blue should not exceed 4mg/kg of body weight.^{6,7}

The algorithm presented by Wong *et al* needs further clarification. It seems to suggest that a decision to use IOPTH is made during surgery when a 'suspicious lesion' has been found. To use IOPTH in an appropriate and effective manner, a basal sample for PTH should be drawn before incision. Use of this modality during the operation (without a basal sample) may give erroneous and misleading results. Perhaps the authors can further explain their technique and whether this has been validated?

Finally, Wong *et al*'s argument that 'MIP has been shown to be the superior approach' is based on differences in outcomes shown in an observational study where MIP has only been used in 'selected' cases.⁸

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Hip resurfacing revision rates: radiological audit of risk factors

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COMMENT ON

Ramisetty N, Krishnan KM, Partington PF. Hip resurfacing revision rates: radiological audit of risk factors. *Ann R Coll Surg Engl* 2011; **93**: 314–316
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We read the article by Ramisetty *et al* with interest. Nevertheless, we have some concerns with the methodology. The study was retrospective and so there was no standardisation of the radiographs.

The authors' method of measuring the neck angle has been demonstrated to be inaccurate¹ in that as little as 7° of external rotation of the hip can result in more than 10° change in the apparent neck shaft angle (NSA) and up to 10° can be elicited by internal rotation. Wilson *et al* reported that when using a picture archiving and communication system

to measure the NSA of the proximal femur, the reliability of the measurement is only ±6° for different observers even under the best conditions.² In the study by Ramisetty *et al* the valgus angle of the hip resurfacings that were revised only varied from 4° to -6°. With an error of 6° in measurement alone, it is impossible to predict failure from this.

Murray described that the cup inclination angle (CIA) was better measured with computed tomography as opposed to a plain anteroposterior (AP) radiograph.³ This is in part due to the variation of angles from which AP radiographs are taken. The correct calculation is the angle between the major axis of the ellipse and the transverse body axis. If the cup is anteverted, then the apparent inclination is an overestimate of the radiographic inclination: $\text{Tan(RI)} = \text{Tan(CI)} / \text{Cos}^2(\text{OA})$. The greater the anteversion, the greater the overestimation.⁴

The topic of this paper is of interest but, unfortunately, due to the inherent errors highlighted above, the results do not translate into the ability to clinically predict failure.

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Authors' response

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We appreciate the interest of Grewal *et al* in our article. We would like to point out that in our study the revision rate was higher in a valgus than in a varus stem shaft angle, contrary to what one would expect, although this was not statistically significant. This part of our study is therefore not clinically relevant.

The revision rate was higher for patients with a cup inclination angle (CIA) of >60°. We agree that our method of measuring the CIA may not be highly accurate but this is the standard method in the day-to-day clinic setting. This was also the standard method of assessing the CIA in some other recently published studies.^{1–3} Tannast *et al* performed computed tomography of 37 total hip arthroplasties and compared them with standard pelvic radiographs.⁴ They concluded that the hip CIA could be measured reliably with standard pelvic radiographs. The aim of our study was not to predict risk factors for failure; this is already evident in the