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**In Reply:**—First, we would like to thank Drs. Hill and Whitten for their constructive and relevant criticism, in which they note three important points: (1) lack of control group not receiving red cell concentrates; (2) influence of anesthetic techniques; and (3) lack of control of blood storage length for the autologous and allogeneic red cell concentrates. We will discuss these points respectively.

Regarding their first point, we agree that it would be most interesting with a true control group receiving no blood products. However, total hip joint replacement surgery is associated with large intra- and postoperative blood loss. A total blood loss of at least 1,500–2,000 ml is common.<sup>1</sup> Most patients require some kind of blood transfusion. In the discussed study, 2 of 56 patients did not receive any blood transfusion. In a randomized clinical study, it is more or less impossible to include a randomized control group not receiving any blood transfusions because there simply are not enough patients and because it is impossible to ethically randomize patients to not receive blood transfusions when they are expected to need blood.

Surgical trauma leads to release of cytokines, which was also noted in the discussion.<sup>2</sup> The majority of IL-6 and IL-8 release is probably a result of the surgical trauma (an indication of this is the mentioned *post hoc* study of six patients not receiving blood products, in whom we found concentrations similar to those found in the allogeneic and the autologous group), but the difference between the groups cannot possibly be explained by the surgery.

Regarding their second point, it is true that local anesthetics may influence cytokine release. However, this has been shown *in vitro* and in concentrations of 0.00125–0.125% of bupivacaine,<sup>3</sup> which is at least 25 times a higher concentration than what is found after

administration of 20 mg of bupivacaine in an adult (weight, 70 kg). Both groups were treated identically. No patients were converted to general anesthesia.

Regarding their third point, the blood storage time for both groups is given in table 1 in our article. No significant differences appeared between the groups.

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## References

1. Elawad ARA, Jonsson S, Laurell M, Fredin H: Predonation autologous blood in hip arthroplasty. *Acta Orthop Scand* 1991; 62(3):218–22
2. Ellström M, Bengtsson A, Tylman M, Haeger M, Olsson J-H, Hahlin M: Evaluation of tissue trauma after laparoscopic and abdominal hysterectomy: Measurements of neutrophil activation and release of interleukin-6, cortisol and C-reactive protein. *J Am Coll Surg* 1996; 182:423–30
3. Sinclair R, Eriksson AS, Gretzer C, Cassuto J, Thomsen P: Inhibitory effects of amide local anaesthetics on stimulus-induced human leukocyte metabolic activation, LTB<sub>4</sub> release and IL-1 secretion *in vitro*. *Acta Anaesthesiol Scand* 1993; 37:159–65

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## The Intensity of the Current at which Sciatic Nerve Stimulation Is Achieved Is More Important Factor in Determining the Quality of Nerve Block than the Type of Motor Response Obtained

**To the Editor:**—We read with interest the study by Benzon *et al.*,<sup>1</sup> which was published in the September 1997 issue of *ANESTHESIOLOGY*. Using the peripheral nerve stimulator technique, Benzon *et al.* attempted to determine whether there is a correlation between the type of observed motor response and the ability to block all divisions of the sciatic nerve. Benzon *et al.* defined a successful sciatic nerve localization as a motor response to nerve stimulation using a Braun Stimuplex DIG peripheral nerve stimulator (B. Braun Medical, Bethlehem, PA) when the stimulating current was <1.0 mA. The proximity of the needle to the nerve was confirmed when an injection of 1 or 2 ml of local anesthetic abolished the elicited motor response. The authors concluded that elicitation of foot inversion was associated with the most complete sciatic nerve blockade.

Because of several inherent methodologic flaws in this study, we are compelled to comment on their methods and offer an alternative explanation for the obtained results.

1. *What was the exact current at which the response was obtained for every one of the four elicited responses?*

The Braun Stimuplex DIG peripheral nerve stimulator is a constant current generator with a built-in LCD display allowing current adjustment in 0.01-mA increments for precise current delivery. The authors should report the exact current at which every one of the four different responses was obtained. In the absence of this information, the differences in the number of sciatic nerve branches that were blocked could simply be a function of different needle-to-nerve distances at which the local anesthetics were injected.