REPLY:

We agree that the classical 3-in-1 femoral block performed with a standard nerve stimulation technique cannot guarantee that the obturator nerve is blocked. However, the primary purpose of our study was to test the effects of a 3-in-1 femoral nerve block, using high volumes of anaesthetic solution (40 ml) on intra and post-operative analgesia during total hip replacement surgery. The obturator nerve is mainly a motor nerve and second, the hip is also innervated by some branches arising from the sacral plexus and from the sciatic nerve. Therefore, even with all three branches blocked, 3-in-1 femoral nerve block cannot provide complete analgesia for hip surgery, and we feel that the incidence of any block of sensory fibres of the obturator nerve cannot markedly influence our results.

We agree that the majority of peripheral nerve blocks are made with an awake patient. However, using a nerve stimulation technique with a non traumatic needle and under strict stimulation criteria (motor response with stimulation between 0.3 and 0.4 mA, complete disappearance of muscular movement after injection of 1 ml of anaesthetic solution) as in our study, the peripheral nerve blockade can be performed safely in anaesthetized patients. This has been demonstrated in large series of children² and adults,³ where 4,090 blocks and 2,000 blocks respectively were performed without complication. In our study, the blocks were accomplished after induction of anaesthesia to allow double blind investigation.

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Medical equipment reuse: some principles

To the Editor:

The recent case report¹ of airway obstruction due to a portion of a reused intubating stylette lodging in an endotracheal tube provides an important cautionary tale for proponents of reusing disposable medical devices. In many institutions such reuse is forbidden, even though an established means of reprocessing these items may exist elsewhere. Where reuse is permitted, however, it is necessary for the institution to adopt a set of principles to ensure that any reuse is carried out safely. In this spirit, may I offer some principles for discussion among individuals reusing medical supplies intended for single-use? (A more detailed and complete version of these principles has been posted at <http://canmed.net/cjareuse/>)

- The need for patient consent for the reuse of such devices must be determined by institutional review.
- When an institution chooses to reuse such devices, written procedures based on clinical trials should be enforced.
- An individual responsible for the day-to-day operation of the reuse programme ("reuse manager") must be designated.
- Criteria for determining the number of times each device may be used must be developed.
- A formal inspection process must be in place to detect used items that are not suitable for re-issuing.
- A quality assurance programme must be in place to monitor the reuse programme.

I invite individuals wishing to contribute to this discussion to post their comments at my newly established Medical Device Reuse Discussion Forum on the Internet at <http://canmed.net/reuse/>.

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REFERENCE

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Correlation and agreement are not always the same thing

To the Editor:

We read with interest the comparative description of cardiac output measurements during liver transplantation using the oesophageal Doppler monitor (ODM)

and standard thermodilution (td) by Colbert *et al.*¹ However, the methods of analysis serve to confuse the findings of this paper.

The authors state in the abstract; "A strong correlation was observed ($r = 0.714$; $P < 0.00001$) between the ODM and td measurements of cardiac output. The use of the correlation coefficient in this setting is misleading. The correlation coefficient assesses the relationship between two variables, not the degree of agreement between them. When investigating a relationship between intervention and outcome, a correlation of 0.7 may be considered "strong" but, when comparing two technologies measuring the same physiological variable, it is expected that the correlation coefficient be much higher (i.e. $r > 0.95$).

The authors correctly use the Bland and Altman method for assessing agreement between two methods of clinical measurement.² They report a mean difference (i.e. "bias") of 0.07 min^{-1} but a very large 95% confidence interval (i.e. "precision") of -4.1 to $+4.2 \text{ L min}^{-1}$. A small bias does not necessarily imply good agreement between measurement methods. The difference between the technologies may be consistently large but in favour of neither method. In the abstract the authors state; "There were no differences observed between the two measurements at any of the times studied...". This statement is inconsistent with the observed precision.

On the basis of their results, the authors correctly conclude that the ODM is unreliable as a monitor of cardiac output during liver transplantation. However, as discussed by Bland and Altman, analysis of correlation is inappropriate and should not figure prominently when assessing agreement between two technologies measuring the same variable.

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- 2 Bland JM, Altman DG. Statistical methods for assessing agreement between two methods of clinical measurement. *Lancet* 1986; i: 307-10.

REPLY:

In response to the letter by Walsh et al., we agree that correlation and agreement are not always the same thing. In our discussion we alluded to most of Dr. Walsh's comments. We would like to stress that, when comparing new

technologies, standard statistical analysis is inadequate and this was emphasized in our discussion. There was no difference in the mean values at each of the time intervals studied - this was included to highlight the fact that standard statistical analysis is inadequate for the topic of the paper. This is why we used the Bland and Altman method of statistical analysis and included both the measured bias and precision in the abstract.

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Generic atracurium

To the Editor:

Our hospital recently began stocking a generic brand of atracurium besylate from Sabex replacing the brand name Tracrium from Glaxo Wellcome, a move which was unilaterally decided by the pharmacy and likely as a cost saving measure. Unfortunately, the Sabex atracurium bottle looks remarkably similar to the Sabex neostigmine bottle, each being a dark brown multidose 10 ml vial similar in size and shape with the same size labels, the former white with a horizontal purple strip and the latter light brown with a dark brown stripe. The caps of the uncapped bottles are a different colour, atracurium is purple and neostigmine dark brown. However, once uncapped, the bottles viewed from above or from the side with the labels blocked are indistinguishable. Medication errors could result and our department has contacted our pharmacy and the manufacturer with our concerns. I have enclosed pictures of these bottles.

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