

In Reply:—It was an honor to read the response of Dr. Moore to my editorial about defining professionalism within anesthesiology. Dr. Moore's comments are presented from the perspective of the President of the American Society of Anesthesiologists (ASA), highlighting several important issues not emphasized in my manuscript because of space constraints of the editorial format. The Lifeline Campaign is an important initiative to improve the public image of the anesthesiologists, and many of the elements professionalism defined in the editorial will be essential to the success of the Lifeline Campaign. Defining professionalism as a competency with standards to measure achievement has implications beyond residency. Initial board certification is now time-limited, and those with non-time-limited certificates are voluntarily recertifying. Professionalism undoubtedly will be a core competency. Just as assessment drives behavior and learning during training (medical school, residency), there is every reason to hope that the same effect will continue into practice. The leadership role of the ASA has been sustained. The efforts to counteract the plague of substance abuse and the efforts to define ethical issues within anesthesiology are evidence of decades of focused, funded efforts to advance these elements of professionalism, among others. The action of the 2008 House of Delegates to advance wellness among anesthesiologists was the most recent contribution to this important effort. The absence of direct praise for these efforts in my editorial is another casualty of word count.

For years, I have arbitrarily presented anesthesiology professionalism in four parts. The obligation to participate in the larger world of state and national issues, and the interface between anesthesiology and society as a whole was embedded in one of these elements ("within anesthesiology"). Again to be concise in my editorial, involvement did not get the emphasis or urgency it deserves. Without space constraints, our residency presentations expand this element of professionalism. As program director of a large anesthesiology residency, I have been fortunate to be supported by chairs that have supported active roles in our state society, and the ASA. Our resident participation in the ASA Political Action Committee has been substantial and a direct result of exposure to the issues as a result of participation (or "involvement").

Given the urgency of the issues, "involvement" will become the fifth element of professionalism when I discuss this subject in the future.

Dr. Moore's concerns for the future of the specialty are undoubtedly a daily issue for the President of the ASA. The *Men's Health* article¹; the movie "Awareness;" the sustained efforts by nurses to encroach on the practices of anesthesia, pain medicine and procedural sedation; and the media attention to deaths related to substance abuse set the stage. Pending healthcare reform will provide the script, which has not been written as of now. Whether the play is a drama (patient safety), comedy (with the physician anesthesiologist for humor) or tragedy (with the trivialization of anesthesia as the practice of medicine) will be determined in the near future.

Dr. Moore's call to "involvement" should be taken seriously by all physicians who are making a living providing, teaching, or studying anesthesiology, including perioperative medicine, critical care, and pain medicine. Medical students should observe involvement as an essential element of anesthesiology during their first experiences. Residencies should provide faculty and peer mentorship for participation in state and national societies and governmental affairs. Faculty should demonstrate the value of ASA Political Action Committee participation for residents by their own participation. Academic departments that sponsor residency programs should encourage involvement with time, financial support, and senior faculty mentorship. Departments should sponsor medical students from their sites to attend our national meeting. Residents should be encouraged to join the ASA, state societies, and participate in resident components of state and the national society, and to seek appointment on state and national committees. All of this good work by those in training should be based on imitation and mentorship of faculty, who must be the best possible role models. If the "rank and file" anesthesiologist does not meet this challenge, the future of anesthesiology professionalism may be less important, if the role of the profession in our healthcare system diminishes.

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Reference

1. McDougall C: The junkie in the OR. *Mens' Health* 2006; pp 187-93

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Role of p75 Neurotrophin Receptor in Isoflurane-mediated Neuronal Changes

To the Editor:—We read with interest the article by Head *et al.*, investigating the role of p75 neurotrophin receptor (p75^{NTR}) in isoflurane-mediated neuronal changes.¹ The central premise presented is that isoflurane neurotoxicity results mainly from the prevention of activity-dependent release of tissue plasminogen activator (tPA). tPA converts plasminogen to plasmin, which then cleaves probrain-derived neurotrophic factor to mature brain-derived neurotrophic factor.² In the absence of tPA, excess probrain-derived neurotrophic factor levels are thought to activate a p75^{NTR}-mediated synaptic reduction and increase cleaved caspase 3 levels. The increased cleaved caspase 3 is assumed to indicate increased apoptosis; however, no other evidence is presented of this, such as terminal deoxynucleotidyl transferase biotin-dUTP nick end labeling staining at a 24-/48-h time point.³

There is no investigation as to why this isoflurane-mediated toxicity is only seen in early neuronal cultures and early postnatal ages. We would like to suggest that this may be because of altered p75^{NTR}

expression levels. There is an inverse relationship to p75^{NTR} levels in the hippocampus with age.^{4,5} The absence of isoflurane effects at postnatal Day 21 may in part be a result of lower or redistributed p75^{NTR} levels. The apoptotic pathway *via* p75^{NTR} could also require additional coreceptors/cofactors that are themselves developmentally regulated.

The cell culture experiments are confounded by the fact that mixed neonatal cortex and hippocampal cultures are used. This would mean that there is inherent variation in neurite morphologies. No plating density is given, but we assume that 5 days *in vitro* (DIV) cultures have low numbers of cell-cell contacts, whereas by DIV-14 or 21, a neurite network has been established.

In addition to changing p75^{NTR} levels with neuronal development and culture times, we suggest that isoflurane treatment may also alter the level of p75^{NTR}. In figure 2D, isoflurane treatment of DIV-5 cultures in the presence of tPA seems to increase levels of phosphorylated Akt, as compared with control tPA treated DIV-5 cul-