

principles” or “social determinants of health” strike us as romantic but impracticable notions. To quote Kingsley Davis from 1956,<sup>8</sup>

[It] seems clear that the great reduction of mortality in underdeveloped areas since 1940 has been brought about mainly by the discovery of new methods of disease treatment applicable at reasonable cost [and] by the diffusion of these new methods ... The reduction could be rapid because it did not depend on general economic development or social modernization ... Though in the literature on public health there is still great lip service paid to the necessity of general economic improvement and community welfare in the control of disease, the truth is that many scourges can be stamped out with none of this...

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## The study of NOELs

As a member of the Biological Lecturers of Western Ontario (BLOW), I must respond to the study by Kenneth Rockwood and colleagues.<sup>1</sup>

I was frankly appalled at the aspersions cast upon the venerable tweed jacket. I can state categorically that while lecturing over many years, I have observed frequent NOELs (nod-off episodes per lecture) in my classes — whether or not I was wearing tweed! Nor should the authors seek to discredit our little friends, the insect-like creatures (ILC), who so nobly inhabit our tweed vestments.

The authors know (or ought to know) that there have been no well-defined, published studies (single-, 1½- or double-blinded) linking ILC dander to cerebral dysfunction. In fact, I am aware of a preliminary report (personal communication) using an innovative “triple-blinded” study design (both researchers and subjects were blinded, while the ILCs were fitted with bilateral, opaque compound-eye patches) that suggests for the first time that the dander is actually linked to vasodilatation in the basal ganglia, corpus callosum and elbows of those exposed. The implication for the study of upper-extremity, crossover movement disorders in tweed-wearing BLOWs is, of course, enormous.

Blame for NOELs should be placed squarely where it belongs: on the backs (or more precisely, on the back of the necks) of those in our audiences who persist in nodding off.

My own personal theory is that this tendency is actually due to hyperactive stretch reflexes (HSR) in the posterior paracervical musculature (PCM) of those in the medical community who are given to nodding off. Therefore, rather than sacrificing BLOWs or ILCs, it

might be far more beneficial to sacrifice a few of the more compulsive noddors among our medical students — perhaps circumventing the thorny issue of ethical approval. Information thus obtained might allow the scientific evaluation of the twitch capabilities (TC) of the affected posterior muscle spindles (PMS).

Establishing the appropriate control group for this study will of course be critical. I agree with Rockwood and colleagues that it would be most appropriate to use as control subjects physician-blaming noddors. Perhaps a prospective, longitudinal trial should be undertaken to determine whether administrators, politicians or lawyers would be best suited. Ideally this study would last for 20 years or more; if well publicized, it could have the added benefit of reducing the frequency of nodding off within those groups. Yet such an outcome may be pure fantasy if the protocol fails to distinguish between simple noddors and those administrators and politicians who can sleep with open eyes and still heads (OESH). Under these circumstances any available data would be classed as superficial, unnecessary clinical knowledge (SUCK).

Finally, funding for such a trial could be pursued through the Canadian Medical Protective Association — at arms' length of course, lest any of the associated tweed-wearing lawyers (TWL) also demonstrate upper-extremity, crossover movement disorders during their closing arguments.

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1. Rockwood K, Hogan DB, Patterson CJ. Incidence of and risk factors for nodding off at scientific sessions. *CMAJ* 2004;171(12):1443-5.

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Kenneth Rockwood and colleagues<sup>1</sup> are to be congratulated for highlighting the problem of nodding off during scientific sessions, an unfortunate condition common among doctors

and health care professionals that has until now been ignored in the medical literature. The authors have, however, overlooked 2 issues related to dress: the sex of the lecturer (and thus the location of high-risk fabrics such as tweed) and the presence of a bow tie.

In the interests of science, I attempted to test the theory of Rockwood and colleagues by creating a high risk of NOELs for undergraduate students at King's College London attending a lecture on the role of dietitians in the media. The wearing of a tweed skirt (gored panels, slimming design, midcalf length) failed to generate a NOEL response, despite postprandial timing and a warm environment. Anecdotally, therefore, the wearing of tweed below the waistband cannot be considered a high risk factor for NOELs.

The presence of a bow tie — a not-uncommon occurrence among British general surgeons, psychiatrists and the occasional rheumatologist (thankfully confined to consultant grades) — is a variable risk factor, representing either a character of whimsy (low NOEL risk) or an über-bore (high NOEL risk). As such, this easily visualized appendage requires consideration as a confounding factor (although it may be a uniquely European sartorial aberration).

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#### Reference

1. Rockwood K, Hogan DB, Patterson CJ. Incidence of and risk factors for nodding off at scientific sessions. *CMAJ* 2004;171(12):1443-5.

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While I applaud the eagerness and scientific curiosity of Kenneth Rockwood and colleagues,<sup>1</sup> their study of NOELs kept me awake for several nights as I pondered methods to accurately measure this phenomenon.

As an anesthesiologist, I am always trying to ensure that my subjects are asleep during surgery, while hoping that my residents are awake during my lectures. Recent mass mailings, television

“news” shows and even some scientific journal articles have touted the use of the BIS (bispectral index) monitor (Aspect Medical Systems, Newton, Mass.) as a method of determining the depth of anesthesia. The final verdict is not yet in on the ability of this instrument to measure patient awareness, but the BIS monitor could certainly be used to prove the validity of the NOEL concept.

Granted, having BIS electrodes taped to their foreheads might initially tend to make members of an audience actually listen to the lecture (possibly a benefit). However, after the initial studies, audiences would become used to the monitoring equipment, and the data would be ripe for the picking.

Computerized analysis of audience response to a lecture could be immediately made available to the lecturer. Graphic displays of impending NOELs would alert the speaker to change his or her tactics. No longer would a lecture be inefficient as a learning method. At the same time, the data could be examined on an individual basis. One such outcome could allow audience members to save money: Why pay for a lecture that you slept through? At the very least, an audience member should not have to pay for the percentage of the lecture that he or she missed because of NOELs. Regulatory agencies might also use the data as a means of certifying continuing medical education (e.g., a physician must complete 40 hours of proven-awake medical education per year to retain his or her licence).

Should a lecturer be unable to change his tactics to awaken the audience, a feedback loop could be included to “stimulate” audience members to remain attentive.

Other possibilities surely exist. I wish to offer my services to the authors should they continue their work in this area. After all, celebrated careers in medicine have been built on less. And the lecture circuit awaits the findings of such truly relevant research.

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#### [One of the authors responds:]

I contacted my coauthors<sup>1</sup> about replying to these letters, but Christopher Patterson nodded off shortly after I began speaking to him, and David Hogan, who lives in Calgary, appears to have been kept awake only by his sense of grievance at other Canadians. To be fair, he shares these fulminations with his compatriot Albertans; apparently it is the chief consequence of their daily increasing wealth. I thus write on my own.

I could not understand why John Clifford should be so appalled at our conclusions about the deleterious effect of tweed wearing; surely he appreciates the difficulty in generalizing from clinical studies, so there is no need to take it personally. On the other hand, as a bow tie wearer myself, I find Catherine Collins's suggestion that such sartorial splendor somehow signals that I am an über-bore appalling and outrageous. I'd say more, but as a lowly Canadian geriatrician I know that I could never scale the height achieved by a British consultant to look down on others, so I will leave it at that.

Thomas Fuhrman's suggestion of an electrical device, especially one that is bothersome to subjects and might be vaguely dangerous, is excellent. Such instrumentation would be an important advance in making this area of inquiry respectable. Indeed, it might even lead to a billable procedure, which is of course the fantasy of all geriatricians, especially if we could begin by studying interventionists or hostile reviewers.

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1. Rockwood K, Hogan DB, Patterson CJ. Incidence of and risk factors for nodding off at scientific sessions. *CMAJ* 2004;171(12):1443-5.

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