

## LETTER TO THE EDITOR

**Re: Kelly M, Hargreave F. Re: Dorman SC, Bussoli MA, Ritz SA. Alcohol fixation of induced sputum samples for applications in rural communities. Can Respir J 2010;17: 115-21.**

*To the Editor:*

In response to the concerns raised by Drs Kelly and Hargreave, we want to re-emphasize that the intention of our study (1) was to investigate an alternative method for sputum preservation to make the method available to a larger cross-section of Canadians, particularly those who live in rural and remote locations. Several groups (2-4) recommend monitoring airway inflammation to help guide the treatment and management of asthma and chronic obstructive pulmonary disease. However, the reality for many Canadians is that they cannot have their sputum analyzed as recommended unless they are willing and able to travel substantial distances to a site that performs this service. Having spoken to the laboratories in our community, we determined that they can and do perform sputum inductions for their patients; however, to assess eosinophilia, they simply produce a smear and assess whether there are no, few or many eosinophils present. We were aware of the 2003 study by Kelly et al (5); however, we were also aware that, with the exception of the Swiston et al (6) study – which was a study investigating fire-fighter's sputum after smoke inhalation, not a clinical assessment of airway disease and patient management – there appears to be a dearth of primary care physicians using this method to improve patient management. As outlined in our objectives, the aim of our study was to provide an alternative method that would not alter the original processing method, but would allow samples to be shipped for processing in the context of a nontertiary care setting. Given that eosinophilic inflammation is the primary outcome used to guide steroid treatment, we concluded that this method met our objectives and could provide a solution to the problem. As Drs Kelly and Hargreave point out, there was a substantial loss in cell number using the alcohol fixation method, which we acknowledged in our article; however, we maintain that the robust correlation of eosinophil proportions in fresh and alcohol-fixed samples is,

however, sufficient for monitoring eosinophil percentages. We did not argue that the ethanol fixation method was suitable for all cases. For situations in which investigators are attempting to accurately gauge airway inflammation with respect to all cell types (as in Swiston et al [6]), our method would not be a good choice. We found debris to be a problem with the formaldehyde method in our study.

Although analysis of fresh sputum is most ideal, we believe that the ethanol fixation method that we described may be more feasible for use in remote communities than fresh or formaldehyde fixation and, thus, holds the potential to extend the use of sputum analysis to patients and physicians that would otherwise not have access to this information. Of course, as with any research, the results of our investigation need to be tested in a clinical scenario, and we are currently pursuing further research in this regard.

Sandra C Dorman BSc PhD,  
Melanie A Bussoli BSc  
School of Human Kinetics,  
Laurentian University, Sudbury, Ontario  
Stacey A Ritz BSc PhD,  
Northern Ontario School of Medicine,  
Laurentian University, Sudbury, Ontario

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*Correspondence: Dr Sandra D Dorman, School of Human Kinetics, Laurentian University, 935 Ramsey Lake Road, Sudbury, Ontario P3E 2C6. Telephone 705-675-1151 ext 1015, fax 705-675-4845, e-mail sdorman@laurentian.ca*