

## LETTERS TO THE EDITOR

### Repeatability of ventilatory function measurements in a population survey of 7 year old children

I agree with Drs N Chan and M Silverman (December 1989;44:1059) that the FEV<sub>0.5</sub> and FEV<sub>0.75</sub> are more useful indices of lung function than the FEV<sub>1</sub> in children.

The FEV<sub>0.75</sub> is a valid measure in both children and adults, whereas the FEV<sub>1</sub> is not a valid measure in many normal children, who expel the whole of the FVC in less than one second. Drs Chan and Silverman found this to occur in 29% of their 120 healthy 7 year olds, and Dr D P Strachan (December 1989; 44:1059) found only 1.9% of his sample to contain wheezy children. In an earlier study of normal schoolchildren this occurred in about 20%.<sup>1</sup> The FEV<sub>1</sub> in such children is only another measure of the FVC.

For the above reasons the FEV<sub>0.75</sub> rather than FEV<sub>1</sub> was chosen as the index of choice as an indirect measure of the maximum ventilatory capacity.<sup>2</sup> Over the years my colleagues and I have found the FEV<sub>0.75</sub> to be a useful index of lung function in respiratory medicine and the assessment of new remedies.<sup>3-5</sup> Since the advent of the Wright peak flow meter<sup>6</sup> and later pocket size meters<sup>7</sup> patients have been able to monitor their own behaviour and map out the many interesting patterns of asthma and assess the efficacy of treatments.

It is interesting but not surprising that the coefficient of variation (CV) for the pneumotachograph measurement of peak expiratory flow was lower in the wheezy children than the healthy children. Maybe the wheezy children had more instruction and practice in the manoeuvre? The low CV for both FEV<sub>1</sub> and PEF (Wright) is reassuring to those who have used these indices for many years.

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- 1 Kennedy MCS, Thursby Pelham DC, Oldham PD. Pulmonary function studies in normal boys. *Arch Dis Child* 1957;32:347-54.
- 2 Kennedy MCS. Practical measure of maximum ventilatory capacity in health and disease. *Thorax* 1953;8:73-83.
- 3 Kennedy MCS, Stock JPP. Bronchodilator action of khellin. *Thorax* 1952;7:43-65.
- 4 Kennedy MCS, Thursby Pelham DC. Cortisone in treatment of children with chronic asthma. *Br Med J* 1956;ii:1-11.
- 5 Kennedy MCS. Preliminary results of a double blind crossover trial on the value of FPL 670 in the treatment of asthma. *Acta Allergol* 1967;22:487-9.
- 6 Wright BM, McKerrow CB. Maximum forced expiratory flow rate as a measure of ventilatory capacity. *Br Med J* 1959;ii:1041.
- 7 Wright BM. A miniature Wright peak flow meter. *Br Med J* 1978;ii:1627-8.

**AUTHORS' REPLY** Dr Kennedy appears to have misinterpreted the nature of the sample described in my paper (June 1989;44:474-9). Although wheezy children were included, most of the sample were normal, "healthy" children, with no prior experience of lung function testing. FEV<sub>0.75</sub> may be a useful index, but it was not available from the pneumotachograph used. My previous letter

(December 1989;44:1059) points to the similarity of FEV<sub>1</sub> and FEV<sub>0.5</sub> as indices for use in epidemiological studies of this age group. Presumably this conclusion extends to FEV<sub>0.75</sub>.

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### Botulism: a potentially common problem

Dr J M Shneerson's editorial (November 1989;44:901-2) on the potential for botulism to rear its ugly head in the last decade of the 20th century was timely and appropriate for *Thorax*.

In a recent eight case US-Israeli outbreak<sup>1</sup> the index patient, an elderly woman with a history of cardiac insufficiency, had died and been buried before the diagnosis of botulism was suspected. Two other patients needed prolonged respiratory support. The culprit, salted whitefish purchased in New York City, was transported to Israel in the hand luggage of several Jews of Russian origin, for whom it was a delicacy.

With regard to Dr Shneerson's warning that vacuum packaging of foods provides ideal conditions for *Clostridium botulinum* to grow and produce its toxin, we suggested in our report that repackaging of the fish in plastic bags to prevent it from smelling might also have encouraged toxin production. Botulism was also reported recently in a passenger who had consumed a tainted prepackaged airline meal.<sup>2</sup> In pondering the causes of our international outbreak, we wondered whether the reduced jet cabin oxygen tension during a transatlantic flight<sup>3</sup> might have been a contributory factor in allowing reproduction of this anaerobe. In any event, the causative organism is ubiquitous and botulism remains a danger in the jet age, demanding public education and vigilance by clinicians and public health officials.

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- 1 Slater PE, Addiss DG, Cohen A, et al. Food-borne botulism: an international outbreak. *Int J Epidemiol* 1989;18:693-6.
- 2 Public Health Laboratory Service Communicable Disease Surveillance Centre. Botulism associated with an in-flight meal. *Commun Dis Rep* 1987;ii:1.
- 3 American Medical Association Commission on Emergency Medical Services. Medical aspects of transportation aboard commercial aircraft. *JAMA* 1982;247:1007-11.

### The current state of lung transplantation

Drs J Dark and P A Corris (September 1989; 44:689-92) stated that obliterative bronchiolitis is the most common cause of late morbidity and mortality in the recipients.

We have recently reported the suitability of a new contrast medium, Iotrolan (a water soluble non-ionic dimer), in selective bronchography via the fiberoptic bronchoscope.<sup>1</sup> Iotrolan is well tolerated, can be injected directly into the suction channel of the bronchoscope, and does not obscure bronchoscopic vision or interfere with further bronchoscopic procedures, such as transbronchial biopsy. In contrast, the standard bronchographic agent, Dionosil suspension, is difficult to instil into the bronchial tree via the fiberoptic bronchoscope, it obscures bronchoscopic vision, and it is poorly tolerated,

especially in patients with obliterative bronchiolitis. Selective bronchography via the fiberoptic bronchoscope using Iotrolan should prove useful in the detection of obliterative bronchiolitis by showing its characteristic bronchographic features. In addition, the technique should also be helpful in detecting dehiscence or narrowing of the airway anastomosis.

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- 1 Morcos SK, Baudouin SV, Anderson PB, Beedie R, Bury RW. Iotrolan in selective bronchography via the fiberoptic bronchoscope. *Br J Radiol* 1989;62:383-5.

**AUTHORS' REPLY** Dr Morcos suggests that the extremely effective method of performing bronchography with water soluble contrast media might be useful in detecting obliterative bronchiolitis or anastomotic problems in the airway. We are in no doubt that the techniques he suggests would indeed show the severe abnormalities in end stage obliterative bronchiolitis. Unfortunately, the disease would be irreversible at this point and what is needed is an investigation which would identify the very early stages. We are already in a position to detect small airways obstruction physiologically and correlate this with submucosal lymphocyte infiltration in transbronchial biopsy specimens. The most important step will be to detect these changes non-invasively at a stage when they can be reversed by immunosuppression. We suspect that contrast radiography would not give enough early information.

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