patibility. The temporal relation in the fall in PEF and arterial oxygen tension during haemodialysis, confirmed by Dr Wu and his colleagues, supports our initial contention that changes in PEF may be due to the activation of inflammatory mediators consequent on the activation of complement, neutrophils, monocytes, and platelets after the blood-dialyser interaction, resulting in an increase in pulmonary arteriolar tone and ventilation-perfusion mismatch and a reduction in tissue oxygen delivery. This is supported by data obtained during the reuse of cuprophan dialysers, when the expected fall in PEF and arterial oxygen tension and increase in platelet activation were much less than when the dialyser was used the first time.

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We were interested to read the article by Dr AR Webb and others (August 1989;44:674–5) showing patients' preference for lignocaine gel over lignocaine aerosol for topical nasal anaesthesia preceding fibroptic bronchoscopy. Seven years ago we reported the same preference for lignocaine gel by patients and normal subjects. Nasal anaesthesia was equally effective with these two different methods, but the use of the aerosol was often associated with considerable nasal discomfort, an unpleasant taste, and epiphora, which did not occur with the gel. The additional advantage of the lubricating effect of the gel in passing the bronchoscope noted by Dr Webb and colleagues was also reported in our study. Furthermore, in our study plasma lignocaine concentrations were lowered after the same dose of lignocaine gel by comparison with the aerosol, suggesting that the gel might also be safer in terms of lignocaine toxicity.

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We have used lignocaine gel to apply to the nasal nostrils of several infants with surprisingly low TGV values. They do not really come to grips with the thorny problem of whether or not TGV measurements are reliable in bronchiolitis. How, for example, do they know that all their values (both the high and the low) are reliable? Are we to believe that acute and chronic phases are not underestimated? I was delighted to see their results, which seem to confirm our own anxieties and suggest that these results were not simply an artefact. I should most interested in their further thoughts on this issue.

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ADVERSE EFFECT OF ADDITIONAL WEIGHT ON EXERCISE GRAVITY IN PATIENTS WITH CHRONIC OBSTRUCTIVE AIRWAYS DISEASE

The conclusions of Dr R C Swinburn and others (September 1989;44:716–20) can be derived from common sense and an elementary knowledge of physics. Acceleration or deceleration of a mass requires a force. If the mass is increased, a greater force is needed for the same acceleration. Alternatively, if the force is unchanged, less acceleration is produced (force = mass x acceleration). In man the force is produced by muscle contraction, which uses energy proportional to the force produced. When one walks at a steady pace, the legs alternately accelerate and decelerate but the body does not. Therefore the wearing of lead aprons will not substantially increase energy requirements, unless they are worn on the legs, not the thorax. Clearly, in step testing the whole body accelerates and decelerates in a vertical plane against gravity. So the wearing of lead aprons will make a difference to energy expenditure and hence oxygen consumption during this form of exercise.

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Authors' reply We agree with Drs O'Driscoll and Webb that users of lignocaine gel for topical nasal anaesthesia may develop their own techniques for applying the gel. Indeed, some bronchochologists in our own unit use a spray based method similar to the one they describe. The technique documented in both the "Methods" and the "Discussion" sections; it is the detail which is different in the two sections. We can assure readers that it is no more laborious to inject the gel from tube to nostril and massage it posteriorly than it is to open a syringe and Everett Kwill, draw the gel from the tube to the syringe, and then inject. It is also a little cheaper and, as our data show, provides effective topical anaesthesia.

We are delighted to be able to thank Drs Eftimiou and Higenbottam for bringing their paper to our attention. The peak plasma lignocaine concentration in the nine patients given gel was reported to be not significantly less than the concentration in the 32 patients given lignocaine spray, though a lower peak plasma concentration was noted in volunteers given lower dosages of spray and gel. Thus lignocaine gel is at least as safe as lignocaine spray. These authors suggested a preference by patients for the gel in the discussion of their paper, and we have now measured the preference with a randomised study focusing on acceptability to patients.
Disturbance in respiratory mechanics in infants with bronchiolitis.

S Godfrey

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