Correspondence

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

Sir,—The impression was given by Dr David Strachan (June 1989;44:474-9) that the coefficient of variation for FEV₁ in seven year old children was low, possibly even lower than that for the vital capacity. We wonder whether this could be a spurious finding. In a recent survey of 120 healthy seven year old school children, we found that 29·2% exhaled their full vital capacity within one second and that forced vital capacity (FVC) and FEV₁ were identical. Dr Strachan does not report a similar figure for his own group. We would suggest that the FEV₁, or FEV₁0.75, are more useful indices of lung function than FEV₁ in seven year old children.

Dr Strachan's conclusion that the peak expiratory flow (PEF) was less suitable than FEV₁ for repeated measurements during airway challenge in young children is again based on data which are potentially spurious. The criteria by which Dr Strachan himself chose to accept or reject the forced expiratory manoeuvre in his study subjects was the reproducibility of the FVC and FEV₁. Not surprisingly, these were the two most reproducible indices. It is well known that PEF obtained by pneumotachograph may be different from that obtained by Wright peak flow meter. The two have very different within subject variability.

Unfortunately, Dr Strachan's conclusion was not based on an examination of the reproducibility of the PEF by Wright peak flow meter, routinely used for PEF measurements in airway challenge. Our findings, based on 120 healthy seven year old school children, do not support Dr Strachan's conclusion (table). We suggest that, because of the differences in forced expiratory technique needed, PEF and FEV₁ (or FEV₁0.75) should be separately determined in young children.

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<table>
<thead>
<tr>
<th>Lung function index</th>
<th>Coefficient of variation</th>
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<tbody>
<tr>
<td>FEV₁</td>
<td>3·1</td>
</tr>
<tr>
<td>Forced vital capacity</td>
<td>3·6</td>
</tr>
<tr>
<td>Peak expiratory flow:</td>
<td>14·6</td>
</tr>
<tr>
<td>Pneumotachograph†</td>
<td>5·0</td>
</tr>
<tr>
<td>Wright peak flow meter†</td>
<td></td>
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</tbody>
</table>

*Based on three pneumotachograph recordings selected in accordance with the recommendations of Chinn and Cotes, and provided that the FVC values were within 5% of the maximum value.
†Based on four Wright peak flow recordings.


Relapse of pneumocystis pneumonia in the upper lobes during aerosol pentamidine prophylaxis

Sir,—Dr R M Bradburne and others (July 1989;44:591-3) report the relapse of Pneumocystis carinii pneumonia in the upper lobes during prophylaxis with pentamidine 60 mg administered every two weeks with a Respirgard II nebuliser. The authors suggest that this may be due to increased clearance of pentamidine. There is no evidence to support this hypothesis, for although DTPA transfer is increased in patients with pneumocystis pneumonia, pentamidine is retained in lung tissue for prolonged periods, and concentrations in plasma are very low after aerosol treatment. The combination of dose of pentamidine and nebuliser system used may explain the upper lobe recurrence of pneumocystis pneumonia in their patient. Using technetium-99m labelled human serum albumin as a marker for pentamidine deposition, we have shown that when the Respirgard II...
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