

lung capacity, and reduced gas transfer. Thirteen MM<sup>Malton</sup> heterozygotes were discovered (mean  $\alpha_1$  antitrypsin concentration 66.5% predicted), five of whom smoked. Pulmonary function in these five and in two smokers with Pi MZ and intermediate  $\alpha_1$  antitrypsin concentrations was reported as having "a significant decrement in a number of measures of expiratory flow." Sproule and colleagues concluded that there was evidence of a detrimental effect of cigarette smoke in those individuals with a reduced circulating concentration of  $\alpha_1$  antitrypsin.

If their data are re-examined, however, this conclusion is surprising. FEV<sub>1</sub> in 14 Pi MM smokers was 98.5% (SD 18.9%) and in five MM<sup>Malton</sup> smokers 95.8% (10.3%) of predicted normal. The difference in mean FEV<sub>1</sub> values between the two groups is not significant and in addition the MM<sup>Malton</sup> heterozygotes had a mean age nine years greater and were heavier smokers.

In conclusion, we have confirmed the association between Pi M<sup>Malton</sup>Z and the high risk of developing emphysema. The results of our small family study of six MM<sup>Malton</sup> heterozygotes, which included three smokers, two non-smokers, and one ex-smoker, in contrast to those of the study by Sproule *et al* produced no evidence to suggest that smokers with intermediate concentrations of  $\alpha_1$  antitrypsin due to the MM<sup>Malton</sup> phenotype have a greater risk of developing emphysema than smokers with normal concentrations. This is in agreement with comparable studies in MZ heterozygotes.<sup>7</sup>

## Book notices

*Ventilation/Blood Flow and Gas Exchange*. 4th ed. JB West. (Pp 119; £6.50.) Oxford: Blackwell Scientific Publications, 1985.

Since it first appeared in 1965 this small book has been essential reading for all who need to understand gas exchange in the lung. It has performed its function so well that it is entirely appropriate that most of the recently issued fourth edition is identical word for word to the original version. There is a new chapter on distribution of ventilation-perfusion ratios, in which a previously theoretical concept is brought to life in a presentation of the results of the multiple inert gas elimination technique. This brings added interest and excitement to the subject, which will certainly benefit new owners of the book; but existing owners (this is not a book to borrow) need feel no urge to exchange their cherished earlier editions.—RALB

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## References

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- 3 Cook PJJ. Genetic aspects of the Pi system. *Postgrad Med J* 1974;50:362.
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- 5 Cox DW. A new deficiency allele of alpha<sub>1</sub>-antitrypsin: Pi Mmalton. In: Peeters H, ed. *Protides of the biological fluids*. Oxford: Pergamon Press, 1976:375-8.
- 6 Sproule BJ, Cox DW, Hsu K, Salkie ML, Herbert FA. Pulmonary function associated with the Mmalton deficient variant of alpha<sub>1</sub>-antitrypsin. *Am Rev Respir Dis* 1983;127:237-40.
- 7 Bruce RM, Cohen BH, Diamond EL, *et al*. Collaborative study to assess risk of lung disease in Pi MZ phenotype subjects. *Am Rev Respir Dis* 1984;130:386-90.

*The Essentials of Respiratory Therapy*. 2nd ed. RM Kacmarek, CW Mack, S Dimas. (Pp 632; £33.50.) Chicago: Year Book Medical Publishers Inc, 1985. ISBN 0-8151-4955-7.

This densely packed book is intended to be a summary of all the knowledge required by respiratory therapists, presented in numbered note form. It contains chapters on basic chemistry and physics (29 pages) and cardiological medicine, including fluid balance (114 pages); this is followed by chapters on gas therapy, oxygen therapy, airway care, aerosol therapy, chest physiotherapy, mechanical ventilation, analysers, more theory about fluid flow, microbiology, and the techniques of sterilisation. The book is designed for revision and for the preparation of lectures rather than for a first attack on these subjects. For example, the section on oxygen delivery systems does not describe the various masks but merely explains the ways of giving high and low flow systems and their relative advantages. There is a lot of technical information that would be hard to find elsewhere and some homespun advice: for example, how to wean a patient off a ventilator (in some detail). This is a specialised book for a particular audience and cannot be recommended for other professionals. A large intensive care ward with a major teaching commitment might find a use for some of the technical details contained in it, but I doubt if many would find the presentation congenial.—GL