whether these compounds accumulate during low or high ozone episodes and, if they do, whether they are of clinical relevance.

Jon G Ayres is concerned that there was insufficient adjustment for other confounding meteorological factors and critically black smoke or particulate matter. In fact, relative humidity, wind speed, barometric pressure, and sunshine hours were examined in the statistical models, but for reasons of editorial brevity these data were not included in the paper. The effect of ozone was not appreciably altered.

Fig 1—Unadjusted Lowess smoothing averages for incidence of wheeze and 24 hour average ozone for two sites in London

Graham Benthall and Peter Brimblecombe comment on the unexpectedly high ozone levels recorded in October and November. We have now repeated the analysis using pollutant data derived from the fixed point monitor in London Bloomsbury for the same time period as the study (courtesy of AEA Technology, National Environmental Technology Centre, Abingdon). The monitor is located some 20 km east of the Heathrow OPSIS monitor. For ozone, sulphur dioxide, and nitrogen dioxide the mean differences between the Bloomsbury and OPSIS monitors were +17, -11, and -10 µg/m³ respectively with 95% confidence intervals not exceeding 5 µg/m³ for any of these pollutants, although for the period 13 October to 15 November the OPSIS site gave significantly higher levels of ozone. Despite these differences, Poisson regression analysis using the pollutant data from Bloomsbury adjusted for season, temperature, and wind speed revealed a similar U shaped relation between wheezy incidence and ozone (fig 1). Additional adjustment using data on particles less than 10 microns in size (PM10), which was available from the Bloomsbury site, had no significant effect on this relation.

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Metabolic effects of hormone replacement preparations

EDITOR.—The recent article by the Medical Research Council's General Practice Research

Framework examined the metabolic effects of an oestrogen only and a combined hormone replacement preparation (containing norgestrel) in women with hysterectomy and concluded that the possibly beneficial and adverse effects of the two regimens were fairly evenly balanced on lipids and coagulability.¹ We believe that a greater emphasis should have been placed on the results for high density lipoprotein cholesterol, which is a potent independent risk factor for coronary heart disease in women of that age. In the lipid research clinics prevalence study, high density lipoprotein cholesterol was second only to age as a predictor of coronary heart disease in women, more so than low density lipoprotein cholesterol.² From the Framingham data³ we calculated that for a similar group of women the difference in high density lipoprotein cholesterol concentration observed at 12 months between oestrogen only and the combined preparation would translate into a 33% lower risk of a non-fatal myocardial event with the oestrogen only preparation. In contrast, the significance of a moderate increase in factor VIIc (probably related to the increase in triglyceride) in terms of risk of coronary heart disease is not known as there have been no studies to date examining factor VIIc as a marker of cardiovascular risk in women. The observed rise in high density lipoprotein cholesterol may be more important as a marker and outweigh the concomitant increment in factor VIIc in terms of coronary heart disease risk.

The difference in high density lipoprotein cholesterol concentrations between regimens is likely to be due to increased hepatic lipase mediated catabolism with the combined preparation. Oestrogens lower and progestogens increase hepatic lipase activity in proportion to their degree of androgenicity. The point here is that preparations containing androgenic progestogens may be associated with a more atherogenic lipoprotein profile, since it has recently been shown that in women hepatic lipase is also involved in perturbing the low density lipoprotein subfraction profile towards a smaller, denser, more atherogenic pattern.⁴

Finally, this study did not incorporate measures of insulin sensitivity, nor was any comment made on the potential disparity in the effects of the two regimens on carbohydrate metabolism. Oestrogen only preparations have been shown to improve insulin sensitivity, whereas added progestogens seem to oppose this beneficial effect in proportion to their androgenicity.⁵ As a result, the choice of hormone replacement preparations may be an especially important consideration for women with abnormal glucose tolerance, and in these women the addition of a relatively non-androgenic progestogen may be advantageous.

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Chickenpox and steroid cards

Patients need information

EDITOR.—We agree with M D Feher and colleagues that there is a need to reinforce verbal advice regarding the potential risk of the development of severe chickenpox in patients taking oral corticosteroids who do not have a previous positive history of chickenpox.¹

We recruited 121 consecutive patients (65 men, 56 women, age range 26-93 years) either through outpatient medical clinics or before discharge from the medical wards at our centre. All the patients had been prescribed oral corticosteroids for purposes other than replacement. We assessed, through a simple questionnaire completed by either the patient alone or with help from a doctor or member of the pharmacy staff, the information patients received regarding their treatment, the risks perceived regarding the development of severe chickenpox, and how each individual patient would respond if exposed to chickenpox or herpes zoster.

A total of 68 patients (56%) had had chickenpox or shingles in the past, 31 (26%) said they had not, and 22 (18%) were unsure. Only four patients (3%) had previously received information about what to do on contact with a person with chickenpox or shingles, three verbally from their general practitioner and one verbally from a hospital pharmacist. Of those who had not received such information, 66 (55%) had had at least one course of oral corticosteroids in the preceding 12 months and 35 (30%) had had three or more courses or continuous treatment. Of the 53 patients without a positive history of chickenpox or shingles, 49 (92%) had also not received any information on what to do on contact with a person with either disease.

There was confusion among patients as a consequence of this lack of information. On contact with chickenpox, 19 (28%) of the 68 patients with a positive history of chickenpox or shingles said they would contact their general practitioner; 29 (55%) of the 53 patients with no history or an uncertain history of chickenpox or shingles would not contact their general practitioner.

As a consequence of the above work, we, like Feher and colleagues, have developed our own corticosteroid warning card. We suggest that prescribers and pharmacists consider the information requirements of their own patients.

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1 Feher MD, Simms JP, Lant AF. History of chickenpox and steroid cards: a new warning. *BMJ* 1996;312:542-3. (2 March.)

Amended card is used in Oxford

EDITOR.—We applaud the initiative of the Chelsea and Westminster Hospital, presented by Feher and colleagues, in producing a leaflet that warns patients of the dangers of chickenpox if they are taking corticosteroids and which it issues with the standard national steroid card.

In Oxfordshire there has been an enhanced awareness of this hazard of corticosteroid taking since the death in 1992 from chickenpox of a 9 year old child who had received high dose corticosteroids for an eye condition. When it became clear that there was likely to be a considerable delay before the national steroid card was amended to incorporate a warning about chickenpox, the Oxford