of medical treatment or remedial education is going to improve the problem.

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- ¹ Hersov L, Berg I. *Out of school*. Chichester: Wiley, 1980.
- ² Thompson LJ. Learning disabilities: an overview. *Am J Psychiatry* 1973;130:393-9.
- ³ Rutter ML, Shaffer D, Sturge C. *A guide to a multi-axial classification scheme for psychiatric disorders in childhood and adolescence*. London: Froude, 1975.

Oral contraceptives, pregnancy, and endogenous oestrogen in gall stone disease

SIR,—The difficulties in collecting large amounts of data for cross sectional epidemiological studies of gall stone prevalence have led Dr R K R Scragg and others (16 June, p 1795) into the error of overinterpreting their study.

They considered only 200 patients with gall stones defined in three different ways, and it is unrealistic to analyse small subgroups. As the authors are aware, neither of their control groups was satisfactory.

The main conclusions are that the oral contraceptive pill does not cause (and could even prevent) gall stones, whereas multiple pregnancies do predispose to cholelithiasis. These results are compatible with the ultrasonographic study of Roman women (paper presented by D Alvaro and others at the seventh international bile acid meeting in Basel in 1982).

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* * Dr Scragg and others reply below.—Ed,
BMJ.

SIR,—Dr Bateson, by stating that we studied only 200 patients with gall stones implies that ours is a small study. This number is similar to the number with gall bladder disease studied in the Boston Collaborative Drug Surveillance Study ($n=212$),¹ and the Oxford/Family Planning Association Contraceptive Study ($n=227$),² although less than the number studied in the Royal College of General Practitioners' Oral Contraception Study (for current users and controls combined $n=554$).³ Dr Bateson also says that it is "unrealistic to analyse small subgroups." If we had not, however, calculated relative risks for the various age groups we would not have observed an interaction between age and the relative risk associated with exposure to oral contraceptives. To look for interaction between two variables by dividing subjects into subgroups is a standard procedure when analysing case-control data sets.⁴

Secondly, we agree with Dr Bateson that neither of our control groups was likely to have been completely free of bias when compared with the cases—an issue which we discussed in our paper. But, as we also commented in the paper, the observation that the relative risks for oral contraceptives and pregnancy were in the same direction in the two case control comparisons suggests that the possible effect of any bias was slight.

Thirdly, we agree that the 40-50% increase in risk associated with exposure to oral contraceptives among women aged <30 years is not statistically significant and not as strong as the

relative risk associated with pregnancy in the same age group. But this does not conflict with our conclusions that the relative risk associated with exposure to either oral contraceptives or pregnancy varies with age and that any increase in risk associated with either is more likely to be observed in studies of young women (for example, women aged <30 years) than in studies of older women or those which combine the age groups together.

We consider that Dr Bateson should not conclude that there is no association between oral contraceptives and gall stone disease on the basis of our study or the results of the Roman study. Any such conclusion must be made in the light of the evidence from all previous studies. If one is to hold the opinion that there is no association, there must be an explanation as to why a number of earlier reports from large epidemiological studies have observed a positive association between oral contraceptives and gall bladder disease,^{1 3 5 6} which has not been confirmed in more recent reports.²

One possibility is that there is a subpopulation susceptible to the effects of oral contraceptives, as suggested by the results from our study and from the Royal College of General Practitioners' Oral Contraception study³; another is that the earlier studies were of women who on average were taking a stronger dose oral contraceptive than women in more recent studies, who were more likely to be taking the "minipills"; and, thirdly, oral contraceptives may have a positive association with cholecystitis but not gall stones,⁷ a notion for which there is some support,³ although it is difficult to differentiate between these two disease states on aetiological and diagnostic grounds.

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¹ Boston Collaborative Drug Surveillance Programme. Oral contraceptives and venous thromboembolic disease, surgically confirmed gallbladder disease, and breast tumours. *Lancet* 1973;i:1399-404.

² Layde PM, Vessey MP, Yeates D. Risk factors for gall-bladder disease: a cohort study of young women attending family planning clinics. *J Epidemiol Community Health* 1982;36:274-8.

³ Royal College of General Practitioners' Oral Contraception Study. Oral contraceptives and gallbladder disease. *Lancet* 1982;ii:957-9.

⁴ Schlesselman JJ. *Case-control studies: design, conduct, analysis*. New York: Oxford University Press, 1982: 196-8.

⁵ Stolley PD, Tonascia JA, Tockman MS, Sartwell PE, Rutledge AH, Jacobs MP. Thrombosis with low-estrogen oral contraceptives. *Am J Epidemiol* 1975; 102:197-208.

⁶ Vessey M, Doll R, Peto R, Johnson B, Wiggins P. A long-term follow-up study of women using different methods of contraception—an interim report. *J Biosoc Sci* 1976;8:373-427.

⁷ Everson RB, Byar DP, Bischoff AJ. Estrogen predisposes to cholecystectomy but not to stones. *Gastroenterol* 1982;82:4-8.

Prescribing the pill to girls under 16

SIR,—I take great exception to the intimidatory nature of the warning by Dr A W Macara to doctors who are already refusing to prescribe the pill to young girls.¹

Once it is accepted that the contraceptive pill is given only on a doctor's prescription it is subject to an individual doctor's clinical judgment regarding its use in any patient, be she young or old, in the same way as in other forms of medical treatment. If a doctor

decides in good faith and exercises that clinical judgment that it is not in his patient's best interests to prescribe the pill for her, he should not be subject to the threat of being "reported to the GMC for professional indiscipline" or receive "warning letters" and "in extreme circumstances be struck off." It is outrageous for an elected member of the GMC, who ought to know better, to suggest or imply that any doctor be subjected to such intimidation. It applies in no other area of clinical practice and, if accepted, sets a dangerous precedent.

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¹ Fletcher D. GPs liable to discipline for refusing pill. *Daily Telegraph* 1984 July 5:2.

* * We have received several similar letters about the annual representative meeting's debate on the question of contraception for girls under 16 (14 July, p 135). The day after the debate the BMA issued the following press statement: "Doctors at the BMA's ARM today were concerned that some press reports from yesterday's debates implied that general practitioners might face action from the General Medical Council over refusal of the pill on request to girls under 16. At no time was this suggested in the debate. The decision whether or not to prescribe depends first of all on the doctor's clinical judgment and assessment of the case, and every case is different. The meeting overwhelmingly confirmed the policy of the BMA that medical confidentiality in consultations with under 16 year olds should be respected. After the debate at the press conference it was emphasised that if a doctor has a conscientious objection to providing advice and treatment in circumstances where it is in the interests of the health of the patient that advice and treatment should be given then he should tell the patient and ensure that the patient is advised about alternative medical care. If he is not prepared to do so he could risk an accusation of disregarding his responsibility to the patient which could incur disciplinary action by the General Medical Council."—Ed, *BMJ*.

Paunches and the prediction of coronary heart disease

SIR,—We want to suggest a possible underlying pathophysiological mechanism for the association between central or upper body fat predominance and an increased prevalence of ischaemic heart disease (2 June, p 1629).^{1 2} In a study of 80 premenopausal women increasing waist to hips girth ratio was accompanied by increasing fasting plasma insulin and triglyceride concentrations and by increased areas under the curve on figures showing insulin and glucose concentrations after challenging with glucose; these effects were independent of the degree of obesity.³ In a subgroup of these women, waist to hips girth ratio also correlated, independently of obesity, with the degree of insulin resistance *in vivo*. The increased susceptibility of subjects with high waist to hips girth ratio to metabolic aberrations was largely mediated by insulin resistance. In addition, women with high waist to hips girth ratio are characterised by enlargement of subcutaneous abdominal (but not femoral) fat cells and by an increase in androgenic activity, the latter being correlated with both abdominal adipocyte