

with the eating attitude test.³ This is clearly incorrect. Furthermore, their criticism of our use of the paired *t* test in our analysis is without foundation. The skewness of the distributions for the scores, which concerned them, is irrelevant because what matters is the distribution of the differences between diabetic patients and controls, which was symmetric. They themselves acknowledge that their study may well exhibit a type 2 statistical error, whereas this is much less likely for our considerably larger study.

Finally, the statement that "insulin misuse in young women is not thought to be common" is surprising. This type of behaviour is extremely common in young women, even in the absence of an eating disorder.⁴

Whether or not eating disorders fulfilling the criteria in the *Diagnostic and Statistical Manual of Mental Disorders Third Edition* are shown to be commoner in diabetic women, the Oxford group agrees that abnormal attitudes to food and body image are commoner in that group. In our opinion this is of great clinical importance. These problems cause much distress and poor control, contributing to the development of serious diabetic complications.

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- 1 Fairburn CG, Peveler RC, Davies B, Mann JI, Mayou RA. Eating disorders in young adults with insulin dependent diabetes mellitus: a controlled study. *BMJ* 1991;303:17-20. (6 July.)
- 2 Steel JM, Young RJ, Lloyd GG, MacIntyre CCA. Abnormal eating attitudes in young insulin-dependent diabetics. *Br J Psychiatry* 1989;155:515-21.
- 3 Peveler R, Fairburn CG. Commentary. *Diabetes Spectrum* 1990;3: 371-2.
- 4 Steel JM. Eating disorders. In: Pickup J, Williams G, eds. *Textbook of diabetes*. Oxford: Blackwell Scientific, 1991: 827-34.

AUTHORS' REPLY.—The studies of the prevalence of eating disorders in young women with diabetes are producing discrepant findings. The studies that have relied largely or wholly on self report questionnaires have concluded that the prevalence of eating disorders is raised in female diabetic patients. In contrast, four recent studies using a standardised interview to assess eating disorder features have found no evidence of an increased prevalence. Each of these studies—our study of young women, a similar Oxford study of adolescents with diabetes (R C Peveler *et al*, unpublished data), and equivalent studies from the United States (Striegel-Moore from Yale and Marcus from Pittsburgh, personal communications)—has included a carefully matched, community based control group. It therefore seems that if subjects are assessed by clinical interview, the preferred method for assessing the features of eating disorders,¹ and there are matched community controls, then the data indicate that the features (and diagnoses) of eating disorders are just as common in non-diabetic adolescents and young adults as in those with diabetes.

Both Dr Iancu and colleagues and Dr Amiel raise an important issue—namely, whether the decision of some subjects not to take part in surveys on eating disorders is a significant source of bias. It is an interesting question because it is not obvious in which direction the bias would operate. People with eating disorders tend to be very interested in the topic, and this might be expected to result in an increased willingness to participate in surveys. Conversely, many are ashamed of their

behaviour and are secretive about it and might therefore be reluctant to take part in studies of this type.

We have some information on the diabetic subjects who declined to take part in our study. All four were overweight, but none was thought by the clinic to have an eating disorder. The finding that they were overweight is not surprising given the results of three recent studies which suggest that eating and weight problems are overrepresented among subjects who choose not to take part in surveys on eating disorders.²⁻⁴ As in our study the non-participation rate was lower among the diabetic women than the control subjects (7% (4/48) v 14% (39/285)), the potential bias resulting from non-participation is unlikely to account for our findings.

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- 2 Johnson-Sabine E, Wood K, Patton G, Mann A, Wakeling A. Abnormal eating attitudes in London schoolgirls—a prospective epidemiological study: factors associated with abnormal response on screening questionnaires. *Psychol Med* 1988;18: 615-22.
- 3 King MB. Eating disorders in a general practice population. Prevalence, characteristics and follow-up at 12 to 18 months. *Psychol Med Monogr Suppl* 1989;14:1-34.
- 4 Beglin SJ, Fairburn CG. Women who choose not to participate in surveys on eating disorders. *Int J Eating Disorders* (in press).

Prenatal screening for Down's syndrome

SIR.—Dr James N Macri and his colleagues say that they have previously reported data showing that unconjugated oestriol does not contribute to detection efficiency in screening for Down's syndrome.¹ Their study was based on 41 cases of Down's syndrome and yielded a median MoM (multiple of median) of 0.99.² In a recent review of the literature 10 other studies of unconjugated oestriol and Down's syndrome were identified; each yielded a median value ranging from 0.52 to 0.79. The overall median value of all 11 studies (363 cases of Down's syndrome) was 0.73 MoM, the same as our own estimate.³ There is therefore no doubt that concentrations of unconjugated oestriol are significantly lower in Down's syndrome pregnancies than in unaffected pregnancies. This point has been made before in response to earlier discussion on this issue.⁴

In their letter Dr Macri and his colleagues say that they have more information showing that unconjugated oestriol is of no value in screening. Their table shows a higher false positive rate when unconjugated oestriol is added to α fetoprotein and human chorionic gonadotrophin, yielding an extra 86 000 false positives in the United States and 17 000 in the United Kingdom. These figures are in themselves meaningless; any change in the false positive rate can be interpreted only with information on the corresponding change in the detection rate. When the proper analysis is done the conclusion is the reverse of that given by Dr Macri and his colleagues. If the false positive rate at screening is held constant at, say, 5% the detection rate increases from 55% to 61% if unconjugated oestriol is considered along with maternal age, α fetoprotein, and human chorionic gonadotrophin. Alternatively, if the detection rate is held constant at, say, 60%, the addition of unconjugated oestriol reduces the false positive rate from 6.7% to 4.7%, a 30% reduction.⁵ A summary of the reductions observed in different studies has been published and overall yields similar results.⁶

Dr Macri and his colleagues also say that in screening for Down's syndrome it is better to

measure free β human chorionic gonadotrophin than intact or total human chorionic gonadotrophin. There is insufficient evidence to support this view. Two studies have examined free β human chorionic gonadotrophin and Down's syndrome and found median values of 2.18 and 2.06 MoM respectively in affected pregnancies.⁷ These values were similar to the median value of 2.04 based on 17 other studies in which intact or total human chorionic gonadotrophin was measured and well within the range of estimates.⁸ This point was made in an editorial accompanying one of the two studies on free β human chorionic gonadotrophin,⁹ which included a summary of the results of 13 of these 17 studies.

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- 1 Macri JN, Kasturi RV, Cook EJ, Krantz DA. Prenatal screening for Down's syndrome. *BMJ* 1991;303:468. (24 August.)
- 2 Macri JN, Kasturi RV, Krantz DA, Cook EJ, Sunderji SG, Larsen JW. Maternal serum Down syndrome screening: unconjugated oestriol is not useful. *Am J Obstet Gynecol* 1990;162:672-3.
- 3 Wald NJ, Cuckle HS. Biochemical screening. In: Brock D, Rodeck C, Ferguson-Smith MA, eds. *Prenatal diagnosis and screening*. London: Churchill Livingstone (in press).
- 4 Haddow JE, Palomaki GE, Knight GJ, Canick JA, Wald NJ, Cuckle HS. Maternal serum unconjugated oestriol levels are lower in the presence of fetal Down syndrome. *Am J Obstet Gynecol* 1990;163:1372-3.
- 5 Wald NJ, Cuckle HS, Densem JW, Nanchahal K, Rowston P, Chard T, *et al*. Maternal serum screening for Down syndrome in early pregnancy. *BMJ* 1988;297:883-7.
- 6 MacDonald ML, Wagner RM, Slotnick RN. Sensitivity and specificity of screening for Down syndrome with alpha-fetoprotein, hCG, unconjugated oestriol, and maternal age. *Obstet Gynecol* 1991;77:964.
- 7 Macri JN, Kasturi RV, Krantz DA, Cook EJ, Moore ND, Young JA, *et al*. Maternal serum Down syndrome screening: free beta protein is a more effective marker than human chorionic gonadotrophin. *Am J Obstet Gynecol* 1990;163:1248-53.
- 8 Spencer K. Evaluation of an assay of the free β -subunit of chorionic gonadotrophin and its potential value in screening for Down's syndrome. *Clin Chem* 1991;37:809-14.
- 9 Knight GJ, Cole LA. Measurement of chorionic gonadotrophin free β -subunit: an alternative to chorionic gonadotrophin in screening for fetal Down's syndrome? *Clin Chem* 1991;37:779-82.

SIR.—In highlighting the importance of investigating psychological responses to screening Dr Jennifer G Wishart states that it will always be important for the individual woman to decide whether or not screening is desirable and that the role of the doctor is to ensure that the decision is fully informed.¹ This is the position that many see as desirable: a neutral doctor conveying value free information to a person who is then free to decide. Though the sentiment behind this vision is understandable, it is unduly optimistic as it ignores the social influences acting on the patient and the doctor.

A health professional's personal offer of a free screening test is rarely refused, particularly if the test is presented as routine and carried out as part of continuing health care.² This is particularly so in pregnancy, when most women undergo a range of tests when offered them routinely, including ultrasound screening for fetal anomalies, α fetoprotein screening,³ and HIV antibody screening.⁴ This is due partly to the power that health professionals exercise, albeit unintentionally, in relation to patients; partly to the way in which tests are presented (for example, as routine, with many benefits and few costs enumerated⁵); and partly because the availability of a test suggests that it has the medical profession's blessing.

Technological developments, including those arising out of the human genome project, provide the ability to test for an ever increasing range of