postoperative endotoxaemia is 32%.⁶ Further work should be directed at identifying those who are at risk and assessing their innate immunity in different clinical situations. If antiendotoxin is then given early, rather than after sepsis is established, the results are likely to be superior to those obtained in the trials published so far.

Comparisons can be made with the published trials of steroids in sepsis. For them to be beneficial it was thought necessary to administer steroids in the very early stages. They were deemed ineffective, though confirmatory studies were not performed. Although these two drugs are not comparable, by performing similar studies with antiendotoxins without fully understanding the events leading up to sepsis we run the risk of condemning this potentially useful treatment for the wrong reasons, spending millions in the process.

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Low protein diets in chronic renal insufficiency

SIR,—D Fouque and colleagues report a meta-analysis of the effect of low protein diets on rates of renal death in patients with renal failure of various severities.¹ They conclude that the beneficial effect, if genuine and free of bias, might be due to a reduction in the rate of progression of renal failure induced by diet or to delayed institution of renal replacement therapy consequent on an improvement in symptoms of uraemia. Although low protein diets have long been recognised to alleviate uraemic symptoms, their effects on quality of life and general physical fitness in less severe renal failure have not been adequately addressed in the papers analysed by Fouque and colleagues or elsewhere. These are crucial to the prescription and tolerance of such diets.

We assessed quality of life with the Nottingham health profile and aerobic fitness by low work cycle ergometry in 25 adults with stable renal failure (serum creatinine concentration >350 µmol/l) prescribed 0.6 g protein/kg desirable body weight/day with an energy intake of 125-145 kJ/kg/day for three months. Assessed dietary compliance was good but energy intake remained about two thirds of that prescribed. The mean (SD) baseline respiratory exchange ratio, used as an indicator of fitness, was consistent with weakness, ranging from 0.86 (0.05) at zero watts to 1.02 (0.04) at 60 W. After three months of the low protein diet a consistent improvement in respiratory exchange ratio was evident at all workloads and was significant at 20 W (0.87 (0.03) at three months *v* 0.96 (0.05) at baseline, *p*<0.05), suggesting a beneficial effect on aerobic fitness. The subjects' perceived energy, emotional reaction, and sense of social isolation as determined by the Nottingham health profile also improved significantly.

The results imply that low protein diets improve quality of life and fitness in subjects with renal failure who do not have overt uraemic symptoms. These results will be reported in detail later.

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Establishment of pregnancy after removal of sperm antibodies in vitro

SIR,—Carolyn E Grundy and colleagues report that two pregnancies occurred in three cases after sperm antibodies had been removed in vitro with immunobeads.¹

Antibodies bind irreversibly to sperm at ejaculation, so any laboratory procedure must either cleave the F_c fragment of the antibody—for example, by use of papain, which requires a pH of 2.2, making sperm non-viable—or prevent the attachment of antibodies at ejaculation. The immunobead procedure that Grundy and colleagues used allows sperm bound to antibodies to be sequestered from those that are free and is not a technique for removing antibodies from the surface of sperm. The technique is therefore unsuitable for cases in which almost all sperm in the ejaculate are bound to antibodies.

We have been using a procedure developed by Chantler *et al.*² and successfully tested by M Tucker *et al.* (meeting of the American Fertility Society, Atlanta, October 1990), which uses carbohydrate and enzyme moieties to competitively inhibit the attachment of sperm to antibodies at ejaculation. Briefly, semen is collected in 10 ml of culture medium buffered with hydroxyethylpiperazine-ethanesulphonic acid (HEPES) containing 0.2M D-galactose and 5000 IU α chymotrypsin and allowed to stand for 30 minutes. Motile sperm are collected by centrifuging the sample on a Percoll gradient, washed once in 0.2M D-galactose, and then washed twice in culture medium buffered with HEPES. The resulting pellet of motile sperm is free of antibodies. In this way we have prevented the attachment of antibodies to sperm in 70% of cases.

We have achieved pregnancies with in vitro fertilisation in two patients, in both of whom two previous attempts at in vitro fertilisation without treatment of semen for antibodies had failed.

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Childhood mortality after a high dose of vitamin A

SIR,—In their paper on childhood mortality after a high dose of vitamin A in a high risk population Nils M P Daulaire and colleagues describe one of their objectives as determining whether periodic

community wide supplementation of vitamin A could be readily incorporated into an ongoing primary health care programme.¹

We agree with the conclusion that vitamin A supplementation improves survival in children from a harsh nutritional environment such as in Jumla, Nepal. We question the claim that the supplementation programme was readily integrated into the community health programme as the authors describe only their experience of integration with a large, single intervention research study.

The paper contains some indicators highlighting how different the community health programme is from the basic health service found elsewhere in Nepal.

Firstly, within a defined area (16 subdistricts) all households were visited every two weeks by a local lay health worker from a pneumonia case management programme. In contrast, a random cluster sample household survey in Baglung district found that only 41% of 680 households had been visited by the village health worker. A study of attendance at health posts in the same district showed that a quarter of children aged under 5 from the immediate catchment area were seen in a year and only 11% for the area as a whole.

Secondly, no nutritional services other than vitamin A supplementation were available from any source. The village health worker in the government health service, however, has the responsibility to provide health education and advise on nutrition as well as monitoring the growth of all children aged under 5.

Thirdly, 99% of all life events had been recorded. This is exceptional for any programme in rural Nepal other than an intense research programme.

We suggest that this kind of intervention is unlikely to have the same degree of protective effect elsewhere in Nepal other than in the remote mountain areas with exceptionally high levels of malnutrition. This programme could not be replicated in the present basic health service, especially in the same remote areas. An intervention of this kind should not be considered in the absence of a more comprehensive nutrition education programme in the community.

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Risk of Down's syndrome and amniocentesis rate

SIR,—Charlotte Fleming and David J Goldie highlight the problem of choosing appropriate cut off limits for the risk of Down's syndrome and raise the question of patients' acceptance of such risk and their uptake of offers of amniocentesis.¹ They quote their own experience of using maternal serum α fetoprotein concentration and maternal age in screening women aged over 30: at a cut off risk of 1 in 200 only 39% of women offered amniocentesis took up the offer, while at a cut off of 1 in 300 31% took up the offer.

One of the difficulties in translating these data beyond the confines of their screening programme is that confidence in screening that uses only maternal serum α fetoprotein concentration as the biochemical marker with maternal age is low. Several studies have shown that maternal serum α fetoprotein concentration and maternal age at best can identify only 35% of cases of Down's syndrome for a 5% false positive rate. If a combination of markers that give superior detection rates at the