tion improves) this will bring the percentage due to these two conditions up to 90%. And this, of course, explains the second plateau, which will continue until we get some answer to these two conditions—the only improvement so far is with congenital abnormalities.

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Dietary supplementation in pregnancy

SIR,—Mr A Malhotra and Mr R S Sawers (23 August, p 465) referred to the first paper from the Sorrento Maternity Hospital concerning dietary supplementation[1] but did not refer to the second,[2] which immediately followed it in the same edition of the *BMJ*. The papers have similar titles and were obviously intended to be read in tandem.

The Sorrento trials suggested three points. Firstly, unselective supplementation for all Asian mothers during pregnancy is of no clear value,[1] as they quote. Secondly, however, a protein energy supplement when given selectively to Asian mothers (mainly Pakistanis) who had evidence during the second trimester of nutritional stress (inadequate increase in triceps skinfold during the second trimester—that is, some evidence of a compromised energy balance) did enhance birth weight.[2] Thirdly, a protein energy supplement given to mothers who did not have evidence of nutritional stress did not enhance birth weight and may have had an adverse effect.[2,3] Selection is essential.

We accept that the numbers were small (but statistically significant; further analysis by another group confirmed this[3]) and that what applies to mainly Pakistani patients in central Birmingham does not necessarily apply elsewhere. However, a larger study at Sorrento has subsequently confirmed the relation between triceps fat deposition in the middle trimester and fetal growth.[4] Furthermore, these observations are paralleled by those published from The Gambia shortly afterwards.[5] A protein energy supplement given to mothers during the wet season, when food supplies are less, work is harder, and energy balance may therefore be compromised, enhanced birth weight. When given during the dry season the supplement did not enhance birth weight; indeed, there was a suggestion of an adverse effect.

The authors are surely correct to emphasise dietary education; the snag is what does one teach? "Eat to appetite," "An extra pint of milk a day," "More protein foods," "More fibre" all appear in various leaflets. Apart from urging a vitamin D supplement to prevent maternal osteomalacia, neonatal hypocalcaemia, enamel hypoplasia, etc (for which the evidence is very strong from two other trials[6,7] apart from the one they quote[8]), we are not sure what to say specifically about pregnancy. Until we do know what to say perhaps we should concentrate on the vitamin D. It is stated DHSS policy,[9,10] but few hospitals follow it.

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SIR,—We read with interest the leading article on dietary supplementation in pregnancy (23 August, p 465). We performed a dietary recall survey of 43 women, all between the 6th and 22nd weeks of pregnancy. Thirty two had their plasma concentrations of vitamin D and folate estimated in addition to giving a recall of dietary intake over 24 hours. The racial distribution of the women was representative of the mixed population in west London (81% white, 12% black, 7% Asian). The mean age of the patients was 26 years (range 17 to 41 years).

Average intakes of the major nutrients, with the exception of folate, vitamin B_6, and vitamin D, were all above DHSS (1979) recommended daily intakes for pregnancy. On the other hand, the proportions of patients not having the recommended intakes were: energy 46%; protein 14%; vitamin B_1 19%; riboflavin 23%; nicotinic acid 40%; vitamin C 28%; fibre 46%; iron 48%; calcium 48%. Of the 43 women, only two were taking the DHSS recommended doses of folate (500 μg/day), only two were taking the recommended vitamin B_6 (2·5 mg/day), and none were taking the recommended vitamin D (10 μg/day). None the less, 27 patients had serum folate values of above 6 μg/l, and 23 had 25-hydroxycholecalciferol levels above 7 ng/ml.

There was no correlation between any of the dietary variables and maturity at delivery, birth weight, or birthweight centile. The proportion of low birthweight babies (<10th centile) was 5%, which is below the national average. No fetal abnormalities were detected.

The DHSS recommendations may therefore be set at too high a level. We have attempted to ascertain their scientific basis without success—apparently they are based on the opinions of a "group of experts."

It is unwise to review the recommendations without more scientific fact. Reduction of dietary intakes to ascertain if any harm resulted would be unreasonable. The only sensible approach is a series of large scale controlled prospective studies in which patients are given modest supplements of an individual dietary constituent to ascertain any possible benefit. Let us get our facts correct on the dietary factors of known importance before looking into plasma molybdenum concentrations.

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Graduated elastic stockings

SIR,—The leading article by Messrs K G Burnand and G T Layer (26 July, p 224) has provoked an interesting correspondence. It is odd that there is great enthusiasm for accurate measurement of the pressures produced by an elastic stocking on devices such as the medical stocking tester but much less for relating what actual effects these pressures have on venous physiology in a limb fitted with a stocking.

Mr S D Blair and others (16 August, p 447) would have been in a position to do this, but their use of ulcer healing alone as an end point is unsatisfactory, especially as they had no control group. Many studies of bandaging with varying types of new dressing produce apparent improvements in ulcer healing. Unfortunately, once these studies are completed the enthusiasm for assiduous care wanes and the ulcers recur.

We still need to know what bandages really do. They certainly promote healing, but is graduated compression really superior to ordinary compression? We often seem to be optimistic about the degree of graduation obtained. We think that it will reduce reflux but have little evidence that this is so; in the papers quoted in support of this by Messrs Burnand and Layer, and in others, the actual changes in ambulatory venous pressures and reflux produced by stockings were minor and disappointing[1,2]; in my own study I was greatly disappointed by the lack of reduction of reflux.[3] Only in the study by Partsch were some values returned to normal, and then significant changes were obtained only by the use of the tightest grades of Sigvaris stockings, 504 and 505.[4] However, the results are confused because most of these patients had long saphenous vein incompetence, rather than deep venous incompetence. This is shown by the fact that the better results were obtained by digital pressure over the saphenous opening than by the use of stockings. These grades of stocking are rarely if ever prescribed in Britain and are extraordinarily difficult to get on unaided, even by the young and able bodied.

So until a large study relates three factors—changes in venous pressures and reflux, accurate measurements of compression provided by the stocking, and ulcer healing rate—in legs with proved deep venous incompetence, and not just long saphenous vein incompetence, one must be circumspect in believing that graduated compression is the answer. This matters economically, as getting effective graduated support is expensive and venous ulceration is a common disease.

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Obstetrics at the London Hospital Medical College

SIR,—Both before and after the report of the Beaumont inquiry and the welcome restoration of Mrs Savage's honorary consultant contract by Tower Hamlets District Health Authority there has been much criticism in the press of Professor Grudzinskas, professor of obstetrics and gynaecology of this college.

Among other allegations, it is said that Professor

Grudzinskas told a colleague after taking up his post that he intended to get rid of his senior lecturer—Mrs Wendy Savage. He gave no indication here of any such intention. I had prolonged discussions with him just before and after he took up his appointment about the academic unit and the Tower Hamlets National Health Service department of obstetrics and gynaecology, with which it is incorporated so far as its clinical work is concerned. We talked about the many problems confronting it at a time of great difficulty for all such university units, particularly one serving two medical schools. Professor Grudzinskas expressed no desire to be rid of Mrs Savage and was confident they would work well together. He later had long discussions about the unit with Sir John Ellis, a previous dean who had been closely involved in establishing it jointly with St Bartholomew's Hospital Medical College. Again, he made no mention of Mrs Savage and, on being asked about his staff, said that they were working well together and that he hoped to provide her with the greater opportunities for research she was seeking.

It has also been alleged that Professor Grudzinskas spoke disparagingly about Mrs Savage's professional competence in public. The only occasion that I can recall when he commented publicly on her competence was during his evidence to the Beaumont Inquiry; he asked on several occasions to be allowed to give evidence in private, but the chairman insisted that the inquiry remain public. I am not aware of any specific allegation as to when or to whom Professor Grudzinskas made such remarks publicly.

The college has good reason to be satisfied with the work of the academic unit of obstetrics and gynaecology. Our students obtained excellent results in the obstetrics and gynaecology part of the final MB BS examinations in June this year—better than for some time. Four obtained distinctions (out of a total of 13 in the whole University of London) and the external examiners congratulated us on the high general standard, especially in the clinical examination. This showed a significant improvement on previous years. Credit for this must go also to other consultants and junior staff, but it is evident that under Professor Grudzinskas's leadership teaching has become increasingly effective. In addition, his department has managed to obtain grants of £150 000 for research in the last year.

The college also notes that, last year, the perinatal mortality in this district, one of the most socially deprived in Britain, fell to below the national average. Credit for this must go to midwives, nurses, general practitioners, and junior staff, as well as to consultants, but these figures do not support allegations that, in the past year, the maternity services in Tower Hamlets have been deteriorating.

This college expresses its confidence in Professor Grudzinskas's integrity and in his clinical and academic excellence. The college also expects that, despite the recent problems, Mrs Savage will, after her return, continue to make an important contribution to the field both clinically and academically.

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New estimates of radioactive discharges from Sellafield

SIR,—I would like to add a few points to the note on this subject (2 August, p 340). My estimates of discharges in the 1950s and the possible effects of these are contained in a report[1] which has recently been published for me by the United Kingdom Atomic Energy Authority.

The release of radioactivity in the early 1950s was substantial, consisting of thousands of millions of highly radioactive particles, which were deposited within a few kilometres of the Windscale nuclear reactor chimneys from which they were discharged. In contrast with the Windscale fire, the release was predominantly of long lived fission products. The total release was about 259 TBq (7000 Ci). Large numbers of radioactive particles were found in gardens and homes, including the larders, in Seascale. In 1955, when the particles were first found, only recently deposited activity was measured. No attempt was made to trace the full extent of the radioactivity within the local environment or the transfer to the food chain; consequently, there are large uncertainties in estimates of the effects of the release. A decision to monitor milk was not taken until July 1957, some three years after the particles were believed to have been released.[2]

Since I drew attention to these releases two years ago, it has been recognised that levels of the radioactivity in milk and other foods in the mid-1950s would have been extremely high at Seascale. They may have averaged more than 10 times the maximum permissible levels in milk for one or two years. Farms nearer to Sellafield would have had even higher levels.

Very young children who were living at Seascale at the time of the release were at highest risk. In my report I explain why I believe the cumulative dose received by these children could have been in the region of 50 mSv. Although there is some uncertainty in this figure, it probably represents the worst known example of exposure to radiation for members of the public in the UK from operations of nuclear power plant. Most of this dose would have been received within the first four years of life. You quote the National Radiological Protection Board's conclusion that two thirds of the total risk from all sources came from background and only 16% from Sellafield discharges. These figures refer to the cumulative effect between 1950 and 1980 and include children born in Seascale during the whole of this period. For children born after 1956 the risk arising from the particles released in the early 1950s was quite small. Furthermore, comparing cumulative doses over long periods of time may have little relevance in relation to childhood leukaemia, which on average is contracted before the age of 4. The dose received in the first four years of life may be more important in relation to the development of leukaemia in children. For the group of children born in the 1950s, this dose could have exceeded that from natural background by a factor of 10. The mechanisms which give rise to leukaemia in young children are not well understood and possibly this large increase relative to the background could be more important than is assumed at present.

If, however, the NRPB's methods of risk analysis are correct, then 1 death is to be expected per 5000 children who have received a dose of 50 mSv. This can be compared with the highest risk of 1 in 100 000 from Sellafield discharges reported to the Black inquiry. Since the population of children under 5 living in Seascale in 1955 was about 250 the probability of a death resulting from these releases is estimated to be small although the uncertainties in the analysis are large. No deaths from leukaemia have been reported in children who were born before 1956 in Seascale and who continued to live there until death. Some cases were reported to the Black inquiry of leukaemia and other cancers in children who were living in Seascale in the early 1950s although, as they either were not born there or did not die there, they were not included as part of the epidemiological data considered by the Committee on Medical Aspects of Radiation in the Environment. Although no clear and indisputable link between leukaemia and the Sellafield discharges has been established, uncertainty remains.

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1 Jakeman D. *Notes on the level of radioactive contamination in the Sellafield area arising from discharges in the early 1950s*. London: HMSO, 1986. (AEEW R 2104.)
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Oral contraceptives and breast cancer

SIR,—By courtesy of yourself and the editor of the *Lancet*, and with the agreement of the authors concerned, I have been able to study the reports by Paul and colleagues, of New Zealand, and Meirik and colleagues, of Sweden and Norway, which are published in the *British Medical Journal* and *Lancet* today. It is clear that both of these studies have been well conducted and that concern might be felt regarding their conflicting results. Both studies come from countries with a high rate of use of oral contraceptives; both add to the already considerable body of knowledge regarding the possible effect of use of oral contraceptives on the risk of breast cancer. Neither study can yet draw that body of knowledge to an acceptable conclusion because there are important aspects of the problem, such as the effects of long latent periods, that must remain under continued study.

Of the new studies, that by Meirik and his group in Sweden and Norway included 422 patients with cancer of the breast and 722 age matched controls. No significant association was found between the use of oral contraceptives for seven completed years or less and premenopausal breast cancer. However, the study did suggest a possible risk from very long term use of oral contraceptives, and the relative risk of breast cancer after 12 or more years of use was found to be 2·2 (confidence interval 1·2 to 4·0).

The study of Paul and colleagues in New Zealand included 433 patients with breast cancer and 897 controls. It produced somewhat different findings, and the authors conclude that their study provides strong evidence against the hypothesis that the use of oral contraceptives at young ages increases the risk of breast cancer. Even so, there was some suggestion of increased risk in young women with prolonged use of oral contraceptives, exceeding 10 years.

Both of these studies need to be viewed against the background of the very much larger, recently reported, cancer and steroid hormone study of the Centers for Disease Control in North America. This massive study, of 4711 women with newly diagnosed breast cancer and 4676 controls, showed that the duration of use of oral contraceptives did not influence the risk of breast cancer. In fact, the relative risk of breast cancer in women who had used oral contraceptives for 15 or more years was 0·6, significantly less than 1·0. Thus this study, the largest available to date and roughly 10 times larger than either of the newly reported studies, suggests that oral contraceptives, even when used for very long periods, do not increase the risk of breast cancer.

These several studies will shortly be carefully reviewed by the Committee on Safety of Medicines, whose views will be made known. In the interim it seems appropriate to suggest that the presently available information should not lead to any alteration of current practice regarding the use of oral contraceptives.

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