cachexia-inducing tumours are encountered in mice; a chemically induced cachexia-producing murine gastric carcinoma has been described previously.² It is suggested that the use of such tumours would avoid the complications underlying the system developed by Dr Strain and his colleagues—that is, xenografts of a human hypernephroma in immunodepressed mice. In the case of our tumours the effect of diet modification would seem to provide a valuable opening for experimental investigations relevant to clinical cancer cachexia.

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¹ Bullough, W S, and Deol, J U, *European Journal of Cancer*, 1971, 7, 425.

² Liebelt, R A, et al, *Proceedings of the Society for Experimental Biology and Medicine*, 1971, 138, 482.

Squares, cubes, and power

SIR,—Your semantic juggling with O-level arithmetic (25 November, p 1501) really will not do for a supposedly science-based journal. Of course Mr Redman is right—surface increases as the square and volume as the cube of length, as every schoolchild knows. Volume therefore increases as the 3/2 power of surface, which is why small particles are more soluble than large and large vessels cool more slowly than small ones.

Power of a muscle depends on its cross-sectional area and its length—that is, on its volume so your argument is fallacious. Bridges have nothing to do with it as they do not have any power; the reasons why they sometimes fall down are most lucidly explained in Gordon's *Structures*.¹

Why older spina bifida patients fall more than young ones I do not know but I expect there are a number of reasons. Reliance on dubious arithmetic will not discover them.

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¹ Gordon, J E, *Structures or Why Things Don't Fall Down*. Harmondsworth, Penguin Books, 1978.

Physiotherapy in obstetrics and gynaecology

SIR,—As a specific interest group of the Chartered Society of Physiotherapy specialising in obstetrics and gynaecology we are seriously concerned that many opportunities are missed for assessing and treating women with symptoms which arise from laxity of the pelvic floor primarily related to childbearing.

We would like to make some suggestions. The postnatal examination six to eight weeks after delivery is usually the first occasion on which the pelvic floor can be assessed, and digital examination per vaginam affords an opportunity to feel the contracting levator ani. This examination often reveals weakness of these muscles which would respond to treatment—re-education by means of exercises—as a valuable preventive measure against future gynaecological problems.

In the hands of a specialist physiotherapist this treatment is simple and economical in terms of patient and professional time. The patient is given a very simple description of the pelvic floor and the aims of treatment, followed by digital examination to assess the

tone of the levator ani as well as to instruct the patient in the use of the muscles. Once the method is learnt the patient is encouraged to contract the muscles throughout the day at regular intervals without the need to interrupt normal activities. A monthly check is all that is required, and three months is the average length of treatment.

This simple preventive regimen can be useful for the treatment of genuine stress incontinence, moderate degrees of genital prolapse, and diminished sexual sensation (affecting both partners) where this is due to laxity of the pelvic musculature, and if its application were more generally appreciated by the family doctor, the midwife and the health visitor there would be far fewer women requiring surgery.

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Lithium carbonate and dental caries

SIR,—I wish to draw attention to what appears to be an additional hazard of treatment with lithium carbonate.

A number of patients on prolonged prophylactic treatment with this drug have reported an unusual deterioration of their dental condition, with an aggravation of dental caries. In one patient treated by Dr A Markitziu at the Department of Oral Medicine, Hebrew University-Hadassah School of Dental Medicine, sialography of the left parotid gland showed early atrophy and sialometry recorded 1 ml in 15 min. In all these patients thyroid function tests gave results within normal limits.

It is suggested that patients on prolonged lithium medication should pay special attention to dental care.

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High-density lipoprotein cholesterol in diabetes

SIR,—Dr A L Kennedy and his colleagues (28 October, p 1191) confirm the work of others^{1 2} in showing normal or even elevated plasma concentrations of high-density lipoprotein HDL cholesterol in insulin-dependent diabetics.

Nikkila³ has suggested that a major determinant of plasma HDL cholesterol concentration, in both normals and diabetics, may be the rate of catabolism of the triglyceride-rich lipoproteins (chylomicrons and very-low-density lipoproteins), which is in turn partly dependent on adipose tissue lipoprotein lipase activity. The levels of HDL cholesterol found in various diabetic groups may therefore depend strongly on their degree of hypertriglyceridaemia as well as the type of diabetes. We have studied a group of normotriglyceridaemic, non-insulin-dependent diabetics⁴ and found their mean plasma HDL cholesterol concentration did not differ significantly from that of controls.

Probably because non-fasting blood samples were taken, the authors give no information on

plasma triglyceride concentrations, thus making it difficult to interpret the lowered HDL cholesterol levels in their non-insulin-dependent diabetics. The lowered HDL cholesterol levels found in diabetic groups of various types in the Framingham study⁵ and by Lopes-Virella et al⁶ were almost always associated with hypertriglyceridaemia.

We therefore feel that in population studies of plasma HDL cholesterol concentrations fasting samples are preferable to non-fasting, since the triglyceride status of the groups can then be adequately defined. The use of an unstated number of blood donors as part of the control group for HDL comparisons, as in this study, would also make it difficult to define some other important determinants of HDL cholesterol concentrations, such as alcohol intake⁷ and oral contraceptive use.⁸

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¹ Nikkila, E A, and Hormila, P, *Diabetologia*, 1976, 12, 412.

² Mattock, M B, Fuller, J H, and Stringer, K, *Diabetologia*, 1977, 13, 417.

³ Nikkila, E A, *European Journal of Clinical Investigation*, 1978, 8, 111.

⁴ Mattock, M B, et al. To be published.

⁵ Gordon, T, et al, *Annals of Internal Medicine*, 1977, 87, 393.

⁶ Lopes-Virella, M F L, Stone, P G, and Colwell, J A, *Diabetologia*, 1977, 13, 285.

⁷ Castelli, W P, et al, *Lancet*, 1977, 2, 153.

⁸ Bradley, D D, et al, *New England Journal of Medicine*, 1978, 299, 17.

Antibiotics for cough and purulent sputum

SIR,—The failure of the Netherlands College of General Practitioners to recruit sufficient patients to their controlled trial of antibiotic therapy in patients with cough and purulent sputum in the absence of chest signs has been attributed by Dr S Thomas (11 November, p 1374) to a difference in consulting rates for the symptom complex between the United Kingdom and the Netherlands.

Our original study¹ was extended by a year to permit recruitment of sufficient patients and so we agree that this is not a common condition, even in the United Kingdom. The importance of the research was to establish whether acute infections below the larynx associated with purulent sputum need antibiotic therapy and our finding of a null conclusion in otherwise healthy adults has been confirmed by two other studies^{2 3} in children. Whether these results will modify established prescribing habits remains to be seen, but we hope that they will modify what is written in textbooks and lecture notes about respiratory infections.

The doctors in our study did differ in the number of cases they recruited into the study and we suspect that part of the reason for this was that a symptom complex was identified which hitherto had been regarded as part of either upper or lower respiratory tract infection. We coined the term middle respiratory tract infection (MRTI) to describe it and we have preliminary evidence that doctors who took part in our trial are more likely to use that diagnostic label now than those who did not participate. This suggests that