

Biochemical Response to a Chupatty-free Diet and to Resumption of Normal Diet in 10 Pakistani Immigrants with Late Rickets or Osteomalacia

	Serum Calcium (mg/100 ml) Mean \pm S.E.	Serum Inorganic Phosphorus (mg/100 ml) Mean \pm S.E.	Serum Alkaline Phosphatase (K.A.U./100 ml) Mean \pm S.E.
(1) Normal diet	8.41 \pm 0.14	3.36* \pm 0.26	35.9 \pm 3.49
(2) Chupatty-free diet for seven weeks	9.45 \pm 0.16	3.57 \pm 0.31	47.6 \pm 6.23
(3) Normal diet for three months	8.71 \pm 0.18	3.38 \pm 0.35	29.7 \pm 4.17

*P < 0.05 (compare with period (2)). †P < 0.01. ‡P < 0.001.

which may occur if the diet is grossly deficient in calcium and vitamin D. Short-term balance studies may not reflect the real situation in communities affected by these conditions. The study of Nicolaysen and Njaa,¹⁰ which the authors quote, is at variance with other balance studies which indicate that dietary phytate may produce a marked deterioration in calcium balance,^{11, 12} though it is clear that some adaptation may occur to a high phytate intake in time. Our own study, carried out on subjects who had been exposed to a high phytate intake for many years, would indicate that even maximal adaptation may be insufficient to prevent rickets and osteomalacia under certain circumstances.

The interrelationships of vitamin D deficiency and dietary phytate in the causation of Asiatic rickets and osteomalacia require further elucidation. It seems likely that a high phytate intake may produce rickets and osteomalacia only when both dietary and non-dietary sources of vitamin D are sub-optimal. As demonstrated by Lumb and others,¹³ this situation applies to most people in the U.K. The response of Asiatic rickets to vitamin D and the protective effect of vitamin D supplements may be due to the ability of cholecalciferol to stimulate intestinal phytase.¹⁴ In the interim it is of interest that our original group show significant falls in serum calcium and alkaline phosphatase levels three months after resuming their normal consumption of chupattys in June 1972. Serum inorganic phosphorus levels show a fall which does not reach statistical significance (see Table). These results, obtained after a summer in which Glasgow has enjoyed above-average hours of sunshine, strengthen the hypothesis that dietary phytate is important in the genesis of Asiatic rickets and osteomalacia.—We are, etc.,

W. B. McINTOSH
M. G. DUNNIGAN
J. A. FORD

Stobhill General Hospital,
Glasgow

- Dunnigan, M. G., et al., *Scottish Medical Journal*, 1962, 7, 159.
- Dunnigan, M. G., and Smith, C. M., *Scottish Medical Journal*, 1965, 10, 1.
- Ford, J. A., Colhoun, E. M., McIntosh, W. B., and Dunnigan, M. G., *British Medical Journal*, 1972, 2, 677.
- Dunnigan, M. G., and Gardner, M. D., *Scottish Medical Journal*, 1965, 10, 325.
- Swan, C. H. J., and Cooke, W. T., *Lancet*, 1971, 2, 456.
- Wills, M. R., Day, R. C., Phillips, J. B., and Bateman, E. C., *Lancet*, 1972, 1, 771.
- Mawer, E. B., and Holmes, A. M., *British Medical Journal*, 1972, 3, 177.
- Reinhold, J. G., *American Journal of Clinical Nutrition*, 1971, 24, 1204.
- Reinhold, J. G., *Lancet*, 1972, 1, 386.
- Nicolaysen, R., and Njaa, L. R., *Acta Physiologica Scandinavica*, 1951, 22, 246.
- McCance, R. A., and Widdowson, E. M., *Journal of Physiology*, 1942-43, 101, 44.
- Krebs, G. A., and Mellanby, K., *Biochemical Journal*, 1943, 37, 466.
- Lumb, G. A., Mawer, E. B., and Stanbury, S. W., *American Journal of Medicine*, 1971, 50, 421.
- Cantarow, A., and Schepartz, B., *Biochemistry*, 4th edn., p. 633. London, Saunders, 1967.

anaesthetic for burns dressings and now employ inhalation analgesia with sedative premedication.—We are, etc.,

M. SAGE
S. M. LAIRD

Plastic and Reconstructive Surgery Centre,
St. Lawrence Hospital,
Chepstow, Mon

- Sage, M., and Laird, S. M., *Postgraduate Medical Journal*, 1972, 48, 156.
- Laird, S. M., and Gray, B. M., *British Journal of Anaesthesia*, 1971, 43, 149.
- Sutherland, Anne B., *British Journal of Plastic Surgery*, 1955, 8, 68.
- Taylor, P. A., and Towey, R. M., *British Medical Journal*, 1971, 2, 688.

Ketamine and the Laryngeal Reflex

SIR,—Following our experience with ketamine as an anaesthetic agent for burns surgery¹ we started using this drug as an anaesthetic agent for burns dressing in young children. Inhalation analgesia with methoxyflurane had not been found satisfactory at Chepstow in this group of patients.²

It has always been our practice to starve patients before anaesthesia for burns surgery, even when ketamine was going to be employed, as it is never certain that these patients might not require conventional anaesthesia. We did not starve the children before giving them intramuscular ketamine for burns dressings, however, as these procedures may be frequent and adequate nutrition is essential for healing in burned patients.³ In 1971 Taylor and Towey⁴ published their report of an investigation in which contrast medium was placed on patients' tongues while they were anaesthetized with ketamine. Postoperative radiography showed that the contrast medium had been aspirated. We therefore considered it necessary to repeat this investigation on burned children in order to ascertain whether it was safe for them to be given intramuscular ketamine for subsequent burns dressings without preoperative starvation. Our dosage of ketamine was less than that used by Drs. Taylor and Towey.

Ten children between the ages of 5 months and 6 years were investigated while undergoing skin-grafting operations in the supine position. The patients were premedicated with oral atropine 0.6 mg and trimeprazine 2 mg/kg body weight. Children under the age of 2 years received atropine alone. Anaesthesia was induced and maintained with intramuscular ketamine; no other agent was used. An initial dose of 4 mg/kg was given to prepare the patient and a supplementary dose of 2 mg/kg was given before surgery was started. Further doses of 2 mg/kg were given intramuscularly as required. When anaesthesia was stabilized 2.0 ml of Dionosil (an oily suspension of propylidone) was placed at the back of the tongue. In order to reduce the exposure to radiation only one chest radiograph was taken at the end of the operation. In one 6-year-old child a bronchogram resulted, providing evidence that contrast medium had entered the lungs. The lung fields in all the other patients were clear, although contrast medium could be seen in either the oesophagus or stomach.

We realize the imperfection of this method of investigating the competence of the laryngeal reflex. The results may predict the behaviour of the larynx after simple regurgitation, but it is by no means certain that it establishes the pattern of events in the much more complex vomiting reflex. Nevertheless, we have ceased using ketamine as an

Poisoning Treatment Centres

SIR,—My colleague Dr. I. Oswald (18 November, p. 430) has drawn attention to that very important problem in evaluating a complex treatment—the need to determine precisely what the active components of the treatment experience are. Clinicians, myself no exception, are tempted to infer that the job they think they are doing is what helps the patient. Incidental factors may prove more important.

However, in suggesting other possible explanations for my finding that the repetition rate was much lower among parasuicides admitted to the Edinburgh Regional Poisoning Treatment Centre than among those not so admitted (4 November, p. 255), Dr. Oswald, like all good "Freudians" seems to want his cake and eat it! He avoids committing himself as to whether he expects those patients subjected to the consummatory climax of gastric lavage to be more or less likely to flirt with Thanatos again. Nine (53%) of the 17 patients who later repeated parasuicide had gastric lavage on their first admission to the centre compared with 71 (57%) of the 125 admitted patients who did not repeat. The difference is not significant and it must be concluded that this memorable experience did not deter or encourage further suicidal behaviour.

Dr. Oswald also asks whether continued psychiatric treatment after discharge from the hospital was related to prognosis. It appears not, because of the 17 repeaters, three (18%) had been referred for inpatient psychiatric care, eight (47%) were offered outpatient follow-up, and six (35%) received no further psychiatric help; the corresponding figures for non-repeaters were 21 (18%), 49 (43%), and 45 (39%).

Perhaps the calculated interventions of the psychiatrist are not the only important features of the treatment experience in the Edinburgh Poisoning Treatment Centre. Parasuicide is usually an appeal to key persons in the patient's social group to recognize and respond to his emotional needs. Maybe the whole turmoil of admission to hospital amplifies the cry for help and makes it more difficult for those key persons to ignore it.—I am, etc.,

PETER KENNEDY

University Department of Psychiatry,
Edinburgh

Colleagues in Africa

SIR,—As you have already commented on current difficulties in the health services in Uganda (4 November, p. 249), I should like to draw your attention to a similar situation

developing in a nearby still larger country, the Zaire, formerly Congo, where I have been working since 1923 and which I left voluntarily only a few weeks ago. My letter is not prompted by any personal grudge—I am 76 and was given to understand by the local authorities that they had orders not to touch me so long as I chose to stay—but by a wish to continue to help the people of the Zaire.

For a rapidly increasing population there were about 1,000 doctors in 1959 and about 600 last year, two-thirds of them being foreigners. This year a good many have left, and the trend continues. They are being replaced by Zairian doctors graduated since 1960, nearly all of them much later. According to the Minister of Health there will be 2,200 physicians by 1980, but this is wishful thinking, as new graduates number only a few score every year. Scholarships abroad have been curtailed and the three medical schools reduced to one.

Two and a quarter years ago the right of foreigners to practise became subject to the approval of committees named by the Minister of Health on which foreign doctors—the majority—are not represented. All practising doctors had to ask for registration, providing copies of their diplomas, police and tax office certificates, and finger prints, and to pay repeated registration fees and contributions. To this day no doctor in Oriental Province, where I have been working, has received his membership card. Thus all foreign doctors work on sufferance and may have their surgeries closed at any time, as has happened twice to all national and West African doctors in the capital.

There exists a National Medical Association open to all black physicians, but the multi-racial Association of Private Physicians, which I represented for years in Oriental Province, has been disbanded. At medical meetings white doctors are invited only as observers and may not take part in discussions. The official medical bulletin publishes only papers by black contributors and by the W.H.O. (though I am glad to acknowledge that an exception was made for me). In public hospitals the director must be black, and Zairian graduates and male nurses take precedence over the foreign doctors, even when these are paid by foreign governments, the W.H.O., or religious organizations.

The sense of insecurity was enhanced by last year's campaign against passport-holders of 18 other African independent countries, who were declared guilty of smuggling and economic sabotage and interned for several months in a military camp near my town. The same thing could happen to other foreign communities.—I am, etc.,

A. BARLOVATZ

Brussels, Belgium

Vasectomy in the Surgery

SIR,—I note the comments of Dr. E. R. Seiler (28 October, p. 232) regarding vasectomy in the surgery. I have performed this operation regularly in my surgery for six years and do not agree with any of his objections to performing the operation under local anaesthesia.

The only discomfort the patient experiences is on introduction of the local anaesthetic; this is only minimal and little

more than the discomfort associated with the induction of general anaesthesia. I would point out that it is important that the cord itself be infiltrated adequately, as otherwise the patient may feel abdominal discomfort when the vas is being isolated. If the cord is first isolated by blunt dissection with curved scissors and an aneurysm needle passed behind it, the vas is easily felt by palpation against the aneurysm needle, and can usually be readily separated by blunt dissection. Occasionally one has to be fairly painstaking over this as the tunica vaginalis may be adherent, but the procedure is no more difficult under local anaesthesia than under general anaesthesia. If two ligatures are tied on the vas more than one inch (2.5 cm) apart before removing the length between for histological examination, there should be no question of the cut ends disappearing from view untied.

Except in one or two isolated cases the patients express surprise that the operation has been so painless, and immediately afterwards are able to walk or drive home unaccompanied. In addition, they have been spared the discomfort and the small but real dangers which accompany any general anaesthetic. I would go further and state that in my opinion it should rarely be necessary for the operation of vasectomy to be performed under general anaesthesia.—I am, etc.,

Matchborough,
Worcestershire

J. G. DELLER

SIR,—The recent letters from Dr. E. R. Seiler (28 October, p. 232) and Dr. J. J. Hobbs (18 November, p. 426) call for further comment on the points they have raised.

When I first considered doing vasectomy under local anaesthesia in my surgery I decided that I must first get expert tuition from doctors used to doing this operation in this way. Obtaining this tuition proved virtually impossible, as no set courses were in existence at that time for general practitioners.

The demand from general practitioners for tuition in the theories and techniques of vasectomy in general practice prompted the formation earlier this year, of the Vasectomy Advancement Society of Great Britain, which now undertakes to train them.

It is, of course, essential to use suitable instruments (Soonawalla forceps) to hold the vas once it is revealed through the incision, and when gripped by small curved mosquito artery forceps, which crush it before section, the ends cannot slip back and disappear. It is not necessary to ligate the cut ends, which can be sealed adequately by unipolar diathermy with a Birtcher Hyfreator. Routine premedication of the patient with an oral dose of 5 mg of diazepam 20 minutes before the operation allows the volume of local anaesthetic to be limited to a maximum of 2 ml.

With regard to the potential demand for the operation in Britain, there is demographic evidence (personal communication from the London Office of Health Economics) to show that couples wish to complete their family within the first eight years of marriage. The present average age at which men get married is 25, so a great number of the six million married men over the age of

33 could benefit by vasectomy. With hospitals already overburdened with emergencies and routine work and with over half a million patients waiting for surgery at any one time, who on earth is to do these operations except trained general practitioners?—I am, etc.,

MICHAEL ALTMAN

London N.20

Sucrose in Duodenal Ulcer and Cardiovascular Disease

SIR,—Dr. C. S. Humphrey and others (18 November, p. 393) report on the impaired glucose tolerance and high concentration of plasma insulin in patients with duodenal ulceration, and point to the relationship between this condition and cardiovascular disease. They suggest that abnormal carbohydrate metabolism may be common to both.

This conclusion is supported by the evidence that dietary sucrose might be a common aetiological factor in these two conditions.¹ First, we have shown that patients with chronic dyspepsia, including those with manifest duodenal ulceration, responded very well when given a diet in which sucrose was considerably reduced.² Secondly, the substitution of sucrose for part of the starch in the diets of young men led to a rise in gastric acidity and especially in pepsin secretion.¹ Thirdly, this dietary change produced a diminished glucose tolerance³ and, in about 30% of young men, an increase in the plasma concentration of insulin⁴ and of corticosteroids.⁵ There is in addition an appreciable body of other evidence that links dietary sucrose with cardiovascular disease.⁶

It does appear then that there is a common pattern of disturbed carbohydrate metabolism in individuals with duodenal ulcer and those with cardiovascular disease, and that this is likely to be due to a common aetiological factor, dietary sucrose. Nevertheless, as I have explained elsewhere,¹ I do not believe that sucrose necessarily acts in the same way to produce these two diseases. Sucrose has several unique properties and these can have different adverse effects in man.—I am, etc.,

JOHN YUDKIN

Queen Elizabeth College,
London W.8

¹ Yudkin, J., *Nature*, 1972, 239, 197.

² Yudkin, J., Evans, E., and Smith, M. G. M., *Proceedings of the Nutrition Society*, 1972, 31, 12A.

³ Cohen, A. M., Teitelbaum, A., Balogh, M., and Groen, J. J., *American Journal of Clinical Nutrition*, 1966, 19, 59.

⁴ Szanto, S. S., and Yudkin, J., *Postgraduate Medical Journal*, 1969, 45, 602.

⁵ Yudkin, J., and Szanto, S. S., *British Medical Journal*, 1971, 1, 349.

⁶ Yudkin, J., *British Journal of Hospital Medicine*, 1971, 5, 665.

Bone Disease in Chronic Renal Failure

SIR,—In reply to the comments from Mr. R. P. N. Carroll (11 November, p. 366) we, and our colleagues, emphasize that the aim of our study (16 September, p. 664) was to demonstrate the effect of haemodialysis on bone and not, except in the broadest sense, to diagnose bone disease in individuals. We did not include a group control since our method for obtaining and preparing cancellous bone is well established and normal data are available for the relevant age groups.¹ To avoid the "transitional zone" we used the