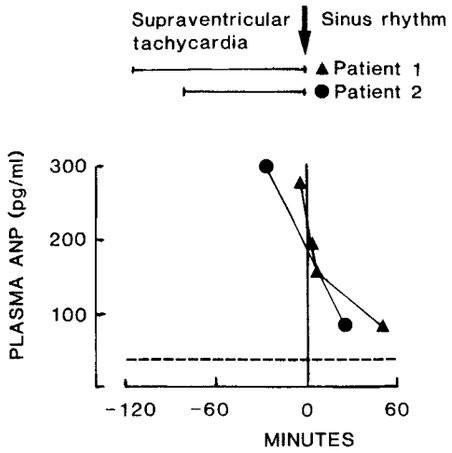

Plasma ANP concentration during supraventricular tachycardia and after restoration of sinus rhythm.

Sinus rhythm restored with verapamil 5 mg intravenously (patient 1, female, 66 years) or with pirmenolol 40 mg intravenously (patient 2, female, 51 years). ------indicates mean+2 SD plasma ANP in eight healthy volunteers. ANP measured by radioimmunoassay.[2]

levels over 100 pg/ml.[2] Serial plasma ANP levels in two patients with supraventricular tachycardia and polyuria (figure) showed that concentrations clearly exceeded the level sufficient to cause natriuresis and diuresis in healthy volunteers. Thus, polyuria in supraventricular tachycardia is most probably explained by secretion of ANP into circulation. These data also confirm that ANP is a circulating hormone, at least in certain conditions, in man.[2]

After restoration of normal sinus rhythm, plasma ANP fell rapidly towards normal levels (figure), suggesting a very short half-life (about 5 min) of endogenous ANP in the circulation. This accords with reports on the half-life of infused, synthetic ANP in man.[2,5]

High plasma ANP levels have also been found in patients with severe congestive heart failure,[2] which is not associated with polyuria. Such patients thus seem to be resistant to the renal effects of endogenous ANP. Other factors (eg, the renin-angiotensin-aldosterone system), known to be activated in patients with heart failure,[6] may counteract the polyuric action of ANP in cardiac failure.

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LIPIDS AND TESTOSTERONE IN CORONARY ARTERY DISEASE

SIR,—Dr Breier and colleagues (June 1, p 1242) have noted significant associations between the extent of coronary artery disease (CAD), as assessed by a coronary score (CS), and the concentrations of plasma triglyceride, HDL cholesterol, VLDL, and LDL in 89 men undergoing angiography. We have done a similar study on 100 white men and, using our CS system (the coronary vessels are divided into nine sections, each section being scored on the degree of vessel occlusion), we have been unable to confirm these findings, the non-significant correlation coefficient values being triglyceride ($r=0\cdot07$), HDL ($r=0\cdot03$), VLDL ($r=0\cdot19$), and LDL ($r=0\cdot14$). This may in part reflect the different scoring systems but our results indicate that a clear-cut relation between lipid concentrations and extent of CAD does not exist. Breier et al further postulate that testosterone levels may in part be related to the extent of CAD by its association with HDL cholesterol, although they found no significant association of testosterone with the CS and no correlation value of HDL with testosterone is given. We also measured testosterone concentrations and found no association with the CS ($r=0\cdot03$) or HDL ($r=0\cdot12$), and when patients were divided into those with one, two, or three vessel coronary disease, no difference in testosterone concentrations were found.[1] It therefore seems unlikely that testosterone plays any significant role in determining the extent of CAD.

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SALICYLATES, OLIGOANTIGENIC DIETS, AND BEHAVIOUR

SIR,—Our experience in the dietary investigation of children with behaviour disturbances supports the general conclusions reached by Dr Egger and colleagues (March 9, p 540). However, in view of Feingold's suggestion[1] that natural salicylates frequently provoke hyperactivity, it is surprising that Egger et al did not attempt to exclude them from their "oligoantigenic" diets or to challenge their patients with salicylates.

We have investigated 140 children, using a modified elimination diet and challenge protocol devised for the management of recurrent urticaria.[2] Of 86 children who experienced significant improvement, nearly three-quarters reacted to double-blind challenge with salicylates but not placebo. We also found a high frequency of reactions to preservatives (including benzoates, nitrate, metabisulphite, and propionic acid), azo-dyes, antioxidants, brewer's yeast, amines (tyramine and phenylethylamine) and monosodium glutamate (MSG), most children reacting to between two and five challenge compounds. These substances are associated with cumulative dose dependence, tachyphylaxis, withdrawal reactions, and supersensitivity, suggesting that their effects are likely to be pharmacological rather than immunological. Although our findings support Feingold's claims we have found his diet unsuitable for the management of food-related behaviour disturbances. Apart from its failure adequately to exclude natural amines and MSG, laboratory analyses[3] have shown that many foods allowed on the Feingold diet are rich in salicylates. This may account for the largely negative results of controlled studies.

The oligoantigenic diets administered in the first phase of Egger's study constitute a major reduction in intake of all the substances listed above, so it is not suprising that significant improvement in symptoms was seen in sensitive children. Of the 39 foods universally tested in the second phase (leaving aside colourings and preservatives), 24 contain significant amounts of natural salicylates, amines, and/or MSG (see table). The dose threshold for precipitating symptoms is lowered on a restricted diet, and we find that sensitive individuals frequently react to several of these foods, particularly when consumed in combination, or on several successive days; in our hands, the foods incriminated correlate well with the results of double-blind challenge with the relevant chemical constituents. Adverse reactions occur when the dose threshold is exceeded, and depend on the amount consumed and frequency, as well as on recent intake of other foods containing the same compounds. Since many different foods may contain the same substances, it is easy to be misled into diagnosing "multiple food allergy" when the common denominators have not been identified. Thus, we would interpret reactions to different food combinations as being suggestive of pharmacological idiosyncrasy rather than food allergy.

As Egger et al point out, allergy and idiosyncrasy may coexist. In our experience the incidence of reactions to food chemicals is similar

SALICYLATE, AMINES, AND MSG REPORTED IN FOODS STUDIED BY EGGER ET AL

Food*	Chemical†	Food	Chemical†	Food	Chemical†
Soya	..	Maize	S	Tea	S
Cow's milk	..	**Fish**	A	Coffee	S
Chocolate	A	Melons	S	Other nuts	S, A
Grapes	S, A, MSG	Tomatoes	S, A, MSG	Cucumber	S
Wheat	..	Ham, bacon	A, N	Banana	A
Oranges	S, A	Pineapple	S, A	Carrot	S
Cheese	A	Apples	S	Yeast	S, A
Eggs	..	Pork	A	Apricots	S
Peanuts	S, A	Pear's	S‡	Onions	S

*Recognised allergens in atopic eczema[4] shown in bold face.
†Source: refs 3, 5, and 6. Quantities vary with each food, and also depend on ripeness, source, variety. In fruits and vegetables concentrations are often highest in skin. Salicylates (S), amines (A), and MSG not reported to be present in oats, sugar, beef, beans, peas, malt. Chicken, potato, peaches, lamb, turkey, or rice.
‡Skin.

in patients presenting with both urticaria and eczema, but the latter atopic group are frequently also sensitive to the common food allergens (milk, eggs, grains, peanuts, and fish).[4] We have generally not found that these foods provoke symptoms in children with behaviour disturbances, but only two of our responding patients had eczema, compared with nearly 40% in the study of Egger et al.

The oligoantigenic diets described by Egger et al seem to us to be arbitrary and difficult to apply in routine practice. With a standardised elimination diet and challenge protocol[2] we can almost always devise a suitable diet for a child within three months, thus lessening the disruption of family life.

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PYRIDOXINE IN CARPAL TUNNEL SYNDROME

SIR,—Dr D'Souza (May 11, p 1104) reports that 16 of 19 patients with clinically diagnosed carpal tunnel syndrome responded to pyridoxine with complete remission. The diagnoses were not confirmed by nerve-conduction studies, and Ellis and co-workers' papers on pyridoxine deficiency and idiopathic carpal tunnel syndrome[1–3] have the same weakness; nor were nerve-conduction measurements done to judge the effect of pyridoxine. Wolaniuk et al[4] have reported improved nerve conduction in 3 pyridoxine-treated patients, but the results are unimpressive; and Smith et al[5] found neither pyridoxine deficiencies nor clear therapeutic improvement in median-nerve conduction in 5 patients.

We have studied the effect of pyridoxine therapy in 13 patients with idiopathic carpal tunnel syndromes and found no improvement in symptoms or in median-nerve conduction across the carpal tunnel. All patients had the typical numbness, generally with upper-limb discomfort. Five had signs of median-nerve damage. Symptoms had been present for 1 month to 10 years (mean 1·8 years). Median-nerve sensory conduction velocities (from index finger to wrist) were abnormally slower than the companion ulnar-nerve velocities by 6 to 30 (mean 18·2) ms. The diagnosis was confirmed in the 10 patients who subsequently underwent surgery.

Patients took pyridoxine daily (300 mg for 6 weeks and 100 mg thereafter) and returned for at least two follow-up measurements of conduction velocity every 6 weeks or so. From measurements of palm temperature, all velocities were normalised to 32°C.[6] Each nerve's velocity was compared with the pre-trial value. When both hands of a patient were studied, the mean of the two velocities was used. Changes from pre-trial velocity were analysed by one-tailed *t* test for paired data.

Follow-up examinations were done at 6–7, 12–16, and 18–26 weeks. Changes from baseline in median-nerve velocity were insignificant (+0·1, −0·5, and −0·5 ms, respectively, the 95% confidence limits for these means being −1·6 to +1·9, −2·0 to +1·0, and −2·2 to +1·2 ms).

An effective medicine for carpal tunnel syndrome raises the median-nerve sensory conduction velocity within the carpal tunnel, as surgery does.[7] Thus the absence of such an increase in our patients indicates that pyridoxine was not effective. Nor was there symptomatic improvement in the patients.

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OSTEOPOROSIS OF PREGNANCY

SIR,—Dr Smith and colleagues (May 25, p 1178) report an association between vertebral deformity and pregnancy and imply that the vertebral collapse they found was the direct result of underlying osteoporosis. "Osteoporosis" refers to any value for whole bone density below the lower limit of normal.[1] Smith and colleagues measured the volume of bony tissue per unit volume of whole bone from iliac crest biopsies, and showed that four of the six patients were *not* osteoporotic. Are they using "osteoporosis" to mean osteoporosis confined to one or more vertebral bodies or generalised osteoporosis affecting the whole skeleton? If osteoporosis were strictly localised to the vertebral bodies one would not expect to find either qualitatively or quantitatively abnormal bone in a remote area such as the iliac crest; nor would one expect to find evidence of a generalised abnormality of calcium homoeostasis by measuring plasma calciotropic hormone levels.

We are not told if these patients had previously sustained injuries or played rough sports. I am surprised at how often a history of trauma is mentioned for the first time when I interview a patient, despite previous consultations with a variety of other specialists. The fact that the patient has not been X-rayed previously does not rule out trauma severe enough to cause vertebral collapse. When a fall is not associated with a limb fracture or a neurological defect, generalised discomfort is often attributed to "bruising". I have lately seen three women, with vertebral deformity, who had not sought medical help or had an X-ray of the spine for more than a decade after a fall from a bicycle, several falls from a horse, and a fall down an escalator.

During pregnancy and lactation movements of calcium from the gut and skeleton increase.[2] Under this increased metabolic stress is it not conceivable that a previously undetected vertebral abnormality might become symptomatic?

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