

5% a year in real terms. It also promised a major offensive against tobacco smuggling and fraud, which should place Britain in a good position to argue the case for increasing prices throughout the European Union and reducing the large differentials in tobacco prices.

Only time will tell whether the policy measures described in the white paper will help reverse the rising trend in smoking prevalence. Government action alone can only achieve so much. Doctors and others who campaigned so vigorously to end tobacco advertising must now direct their efforts towards revitalising professional interest, publicly debating the part health professionals can play, and regaining momentum. There is much, much more to do.

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- 1 Thomas M, Walker A, Wilmot A, Bennett N. *Living in Britain: results from the 1996 general household survey*. London: Stationery Office, 1998.
- 2 Secretary of State for Health and Secretaries of State for Scotland, Wales, and Northern Ireland. *Smoking kills*. London: Stationery Office, 1998.

- 3 Peto R, Lopez AD, Boreham J, Thun M, Heath C. *Mortality from smoking in developed countries 1950-2000. Indirect estimates from vital statistics*. New York: Oxford Medical Publications, 1994.
- 4 Hickling H. Turning over a new leaf. *Yorkshire Post* 1991;17 May.
- 5 Health Education Authority. *Tobacco and the BBC. A review of how BBC TV promotes cigarettes through tobacco sponsored sport*. London: HEA, 1992.
- 6 Aitken PP, Leathar DS, O'Hagan FJ, Squair SI. Children's awareness of cigarette advertisements and brand imagery. *Br J Addict* 1987;82:615-22.
- 7 Chapman S. Smoking in public places: self regulation of businesses is not working. *BMJ* 1996;312:1051-2.
- 8 Reid DH, Killoran A, McNeill A, Chambers J. Choosing the most effective health promotion options for reducing a nation's smoking prevalence. *Tobacco Control* 1992;1:185-97.
- 9 Pierce JP, Gilpin E, Emery SL, White MM, Rosbrook B, Berry CC, et al. Has the California Tobacco Control Program reduced smoking? *JAMA* 1998;280:893-9.
- 10 Silagy C, Mant D, Fowler G, Lancaster T. The effect of nicotine replacement therapy on smoking cessation. *The Cochrane Library*. Cochrane Collaboration, Oxford: Update Software, 1997.
- 11 Marsh A. Smoking: patterns and policy options. In: *Social inequalities in coronary heart disease*. London: Stationery Office, 1998.
- 12 Acheson D. *Independent inquiry into inequalities in health*. London: Stationery Office, 1998.
- 13 Stoten B, Schaechter J. The impact of health targets on high need groups, key social indicators and health outputs. *Merck Sharp and Dohme research grants programme on health targets 1997-98* Rahway, NJ: MSD 1998.
- 14 Prochaska JO, DiClemente CC. Stages and process of self change of smoking. Towards an integrated model of change. *J Cons Clin Psychol* 1983;51:390-5.

## Low plasma vitamin D in Asian toddlers in Britain

*If in doubt give vitamins; consider iron too, and remember other vulnerable children*

Although frank rickets is now uncommon, a steady (some think increasing) trickle of new cases remains, and many local studies have shown high prevalences of suboptimal plasma vitamin 25-OH cholecalciferol ( $\leq 25$  nmol/l) concentrations, particularly in winter. A paper this week by Lawson and Thomas (p 28) confirms a high prevalence (20-34%) in a representative sample of 618 Asian toddlers aged 1½-2½ years.<sup>1</sup> Does this matter and what can we do about it?

Whether a low concentration of vitamin D itself is harmful is not known. The appearance of radiological abnormalities may depend on other factors affecting the availability of dietary calcium as well as vitamin D. We should be wary of chasing biochemical normality without evidence of clinical benefit, particularly if substances which are toxic in high doses have to be used. The overenthusiastic use of vitamin D supplements and fortified infant foods led to an epidemic of infant hypercalcaemia 40 years ago, with significant mortality and neurological deficit.<sup>2</sup>

The association of low plasma vitamin D and iron deficiency anaemia shown by Lawson and Thomas confirms a previous smaller study in which a third of Asian children with anaemia were also vitamin D deficient and half those with D deficiency were anaemic.<sup>3</sup> Is this association merely two effects of diets providing little of both nutrients? Or are the two deficiencies causal—for example, via an effect of iron deficiency on vitamin D absorption<sup>4</sup> or an effect of vitamin D deficiency on the bone marrow?<sup>5</sup> Whatever the causes of the association, if one deficiency is suspected the other should be considered too.

How can we improve the vitamin D status of children without undue risk? There are five approaches to preventing a nutrient deficiency.

*Screening* (by estimating plasma vitamin D or wrist radiographs) is hardly feasible.

*Health education* should encourage the value of playing out of doors and eating foods containing vitamin D. In Cincinnati (lat 38°N) 20 minutes a day out of doors with exposed hands and face were enough to maintain satisfactory vitamin D levels in older infants<sup>6</sup>; the necessary exposure times in Britain (lat 50-58°N) have not been determined. Natural dietary sources of vitamin D are egg yolk and fatty fish (salmon, sardines, pilchards), but greater intakes are obtained from fortified foods and supplements (see below).

*Fiscal measures*—Families receiving some state benefits may receive free vitamin D fortified infant formula (during infancy only) and free vitamin supplements for children up to the age of 5.

*Food fortification*—Fortified breakfast cereals and margarine provide some extra vitamin D. Toddlers will not usually be drinking vitamin D fortified infant formulas or follow on formulas but, as with iron, if there are concerns about vitamin D there are arguments for toddlers using them too.<sup>7</sup> The fortification of “doorstep” milk for children might be reconsidered; some evaporated milks are fortified with vitamin D. Foods available under the Welfare Food Regulations should include follow on formulas fortified with vitamin D and iron for toddlers, not cows' milk alone as at present.

*Supplementation* (through the provision of vitamin drops)—Despite our uncertainty about how many children with low plasma vitamin D values proceed to frank rickets, a modest supplement of vitamin D (the Department of Health drops provide 7 µg/day) is safe and effective in preventing rickets.<sup>8</sup> The aim is that all pregnant women and children up to the age of 5 should receive a vitamin D supplement unless their

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professional adviser is confident that they are getting enough from the sun and diet.

Most pregnant Asian mothers and young children should receive a supplement and so should many white children living in northern Britain. Twice as many Asian as white toddlers receive vitamin drops—about half of them at 15 months<sup>9</sup>—and probably many more would benefit. There are logistic problems over supplements. The Department of Health's vitamin drops (A, D, and C) are available cheaply or free, but only in health centres. The doctor may give a prescription or advise on an over the counter product. The *British National Formulary* does not, however, contain a product containing only vitamin D. Most combined vitamin supplements are now not routinely prescribable under the NHS but a few have remained on the list. Since low plasma vitamin D and iron deficiency anaemia often coexist a combined supplement would be convenient. But products containing both vitamin D and iron are prescribable (with approval by the Advisory Committee on Borderline Substances) only for children with disorders of appetite, the gut, or metabolic disease; since they also contain many micronutrients, necessary for these disorders, they are also more expensive. There are many over the counter products containing vitamin D and iron, together with other vitamins or minerals, in doses providing a reasonable proportion of the reference nutrient intake for toddlers (vitamin D 7 µg, iron 7 mg). Thus we have Department of Health products, which are free or cheap but available only from health centres; a few prescribable products, though some only for specific disorders; and over the counter products—how complicated.

Surveillance and monitoring, policy delivery and compliance, micronutrient interactions, the Welfare Food Scheme, and prescription regulation—there are questions here for parents, health professionals, the Department of Health, scientists, and manufacturers. Isn't it time to get all the cooks together and try again to put Britain's vitamin house in order?

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Competing interests—I have contributed to some of the publications quoted<sup>2-3,7</sup>; I now work in the same centre as Dr Lawson<sup>1</sup>; from time to time I give opinions, for which I receive a fee, to companies making nutritional products for children

- 1 Lawson M, Thomas M. Low vitamin D status of Asian 2 year olds living in England. *BMJ* 1999;318:28.
- 2 Wharton BA, Darke SJ. Infantile hypercalcaemia. In: Jelliffe EFP, Jelliffe DB, eds. *Adverse effects of foods*. New York: Plenum, 1982:397-404.
- 3 Grindulis H, Scott PH, Belton NR, Wharton BA. Combined deficiency of iron and vitamin D in Asian toddlers. *Arch Dis Child* 1986;61:843-8.
- 4 Heldenberg D, Tenenbaum G, Weisman Y. Effect of iron on serum 25-hydroxy vitamin D and 24,25-dihydroxy vitamin D concentrations. *Am J Clin Nutr* 1992;56:533-6.
- 5 Yetgin S, Ozsoylu S, Ruacan S, Tekinap G, Sarialioglu F. Vitamin D deficiency rickets and myelofibrosis. *J Pediatr* 1981;114:213-7.
- 6 Specker BL, Valanis B, Hertzberg V, Edwards N, Tsang RC. Sunshine exposure and serum 25-hydroxy vitamin D concentration in exclusively breast fed infants. *J Pediatr* 1985;107:372-6.
- 7 Department of Health. *Weaning and the weaning diet*. London: HMSO, 1994:31-6.
- 8 Dunnigan MG, Glekin BM, Henderson JB, McIntosh WB, Sumner D, Sutherland GR. Prevention of rickets in Asian children; assessment of the Glasgow campaign. *BMJ* 1985;291:239-42.
- 9 Thomas M, Avery V. *Infant feeding in Asian families*. London: Stationery Office, 1997:82-4.

## Modernising mental health services

### *Time to define the boundaries of psychiatric care*

In *Modernising Mental Health Services*, the new national mental health strategy for England announced in December,<sup>1,2</sup> the government lays out detailed plans for reforming general psychiatric services, and places them in the context of its wider NHS reforms. The document asserts that “community care has failed” and blames underfunding, inadequate services, overburdening of families, problems in recruiting and retaining staff, and an outdated legal framework. It then describes a strategy for providing a service “in which patients, carers and the public are safe and where security and support is provided to all.” This strategy has two key elements: increased investment and increased control (over patients and clinicians).

The increased investment consists of £700m spread over three years. These extra funds will provide more beds (in hostels and secure units); outreach teams and 24 hour access; new treatments, including atypical neuroleptics; and staff training. Increased control of patients will be achieved by “modernising” mental health act legislation to “ensure compliance with appropriate treatment” (in the community) and to permit “a new form of reviewable detention for those people with a severe personality disorder.” Control of clinicians will be achieved using the mechanisms set up

under the overall NHS reforms: the National Institute for Clinical Excellence (to set standards) and the Commission for Health Improvement (to inspect them).

To some extent the strategy has merit. Increased funding, improved standards, and regular inspection could make psychiatric care more efficient and effective. However, the strategy has two fundamental flaws. The obvious flaw is that detaining indefinitely people who have committed no crime sits uneasily with the government's policies on social exclusion and user participation, not to mention its international treaty obligations. The less obvious flaw is that, despite lip service to recruitment problems, the Government has not faced up to its fundamental predicament—the disparity between the supply of clinicians and the demand for psychiatric services.<sup>3</sup> Underlying this disparity are three inter-related problems: the failure of successive governments to establish priorities for general psychiatry,<sup>4</sup> failure to stem the bureaucratic processes encroaching on clinical time,<sup>5</sup> and the worrying shortage of trained staff.<sup>6,7</sup> How far will the government's strategy affect these problems?

*Establishing priorities*—Since the reforms of the early 1990s psychiatric teams have been caught between the demands of a primary care led NHS