In 1976 Hodkinson and Exton-Smith reported that total mortality was increased after five years in subjects over the age of 65 who had taken part in the Department of Health and Social Security's nutritional survey in 1973-4.⁶ Gale and colleagues examine the 20 year survival of 730 of these subjects who had no initial history of vascular disease. Subjects in the highest third of vitamin C intake had a relative risk of death due to stroke of 0.4 (95% confidence interval 0.2 to 0.6) but a relative risk of coronary heart disease of 0.8 (0.6 to 1.2).

The relation between low vitamin C intake and stroke is supported from other epidemiological sources,⁷ but the evidence linking coronary heart disease with vitamin C is less strong. Vitamin C may prevent cardiac death, but, if we accept that the relation between low vitamin C intake and vascular disease mainly results in an increase in mortality from stroke, the association may not be mediated by haemostatic factors as a greater impact on coronary heart disease would have been expected.

Could the effect of vitamin C be mediated by a lowering of blood pressure? Two double blind trials have now been published on the effect of vitamin C on blood pressure in elderly people.^{8,9} Neither trial produced conclusive evidence of a greater reduction in pressure with vitamin C than with placebo, but the numbers in the trials were not sufficient to detect a small effect. The blood pressure after 0.4-0.5 g vitamin C daily was 3 mm Hg systolic and 0.4 mm Hg diastolic lower than that with placebo in one trial after four weeks and 2.6 mm Hg systolic and 1.2 mm Hg diastolic lower after six weeks in the second trial.⁹ Vitamin C probably does lower blood pressure, but the effect may not be sufficient to lower mortality from stroke by 60%. Moreover, the relation between vitamin C and mortality from stroke in the study by Gale *et al* remained after adjustment for blood pressure. We need a long term trial specifically with vitamin C, and in the meantime we mainly have observational data on mortality—with their well recognised limitations.

Experimental data suggest that vitamin C lowers blood pressure by a small amount, that 2 g daily lowers serum cholesterol concentration and prevents oxidation of low density lipoproteins,^{3,10,11} and that a similar dose may increase fibrinolytic activity in those with coronary heart disease.⁵ However, evidence is required to show more benefit than harm from treatment. Presumably the lack of trial data leads both sets of authors in this week's *BMJ* to a muted support of a high intake of vitamin C in elderly people. We must remember that large randomised trials do not always show the expected benefits. A reduction in total mortality was not observed in a trial of vitamin E and carotene in male smokers.¹²

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Psychiatric services for people with learning disabilities

Specialist knowledge and services are needed

Psychiatric disorder is more common in people with learning disabilities than in the general population. Organic, social, and educational reasons account for this increase. Nearly all adults with severe mental retardation have structural brain disease, and epilepsy is more common in this population.¹ In their study in the Isle of Wight, Rutter and colleagues showed very clearly the association among neurological abnormality, epilepsy, learning disability, and psychiatric disorders.² In addition to these organic factors, educational failure; rejection and lack of social acceptance; reduced or no job opportunities, with correspondingly diminished self esteem; difficulties in finding acceptable sexual outlets despite normal sexual drives; and the problems of dysmorphic appearance all combine to increase the liability to psychiatric disorder.³

These psychiatric disorders include schizophrenic and paranoid syndromes, although diagnosing them may be difficult.⁴ For example, schizophrenia cannot be reliably diagnosed in people with an intelligence quotient (IQ) much below 45. Affective disorders can be diagnosed across the range of intelligence, given in depth knowledge provided by the patient's carer and sensitive observation of changes in behaviour.⁵ Senile dementia of Alzheimer type and multi-infarct dementia occur in people with learning disabilities at

much the same rate as in the general population, although a well recognised association exists between Down's syndrome and senile dementia of Alzheimer type.⁶ In addition, people with learning disabilities experience the gamut of anxiety, neurotic and depressive reactions, states of panic, human unhappiness, loss, and bereavement.

Personality disorder, and particularly psychopathic personality disorder, can have serious forensic implications, and there are a few people with personality disorder with mild degrees of learning disability who may offend repeatedly and are responsible for a disproportionate number of sexual offences and fire raising. They may pose considerable problems of containment and public safety.⁷ An estimated 15% of adults with severe learning disabilities have a severe associated behavioural disorder.⁸ These behaviours may include self injury, gouging, biting, destructiveness, noisiness, restlessness, stereotypy, aggressiveness, impulsivity, and apparent imperviousness to pain. Such behaviour may stretch the resources of services and carers to their limits.

To address these problems the Department of Health commissioned the Mansell report.⁹ It recommended services centred on small, staffed houses and apartments in the community rather than hospitals or large residential homes.

Although quality of life improves for most people with learning disabilities, this setting is a demanding one for staff dealing with people with severe learning disabilities, who can be difficult to engage in social, occupational, and community activities.¹⁰ Preliminary results from the all Wales strategy have been modestly encouraging, but progress has been slow, there are significant implications for funding, and staff attrition rates have been high.^{11 12}

As the move to community care gains impetus general practitioners will increasingly have to identify and treat much of the less severe psychiatric disease—for which they may need extra training and experience. They may have to call on learning disability teams in the community, with their nursing, psychiatric, psychological, and social work skills. Access to specialist day hospitals will also be needed. These places can provide people with severe learning disabilities with integrated training in communication and motor skills through speech therapy, occupational therapy, and physiotherapy; programmes of behavioural management; basic training in self care (hygiene, toileting, and personal cleanliness); intensive training in social skills; family psychotherapeutic support; and the management of drug treatment. They also have much to offer people with less severe learning disabilities and can act as a focus for court diversion schemes and community supervision orders, and for counselling in acceptable sexual and drinking behaviour.

A comprehensive psychiatric service for people with learning disabilities will also require inpatient facilities: for patients with intercurrent mental illness or mental illness resistant to treatment, those requiring respite care, and

those with more severe personality disorders with forensic implications who can nevertheless be managed in a locally based service with modest levels of security.¹³ For the few patients who offend repeatedly and seriously, secure or semisecure provision is needed. Some places provide inpatient facilities in the setting of a specialist psychiatric service for learning disabilities, whereas the Mansell report looks more to mainstream psychiatric services to meet these needs. Local services should find their own way forward and should evaluate their results.

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