

in the progression of the dementing process in relation to the abnormal DST (Mahendra, 1984) with the speculation that relatively high cholinergic activity in slowly progressing cases of Alzheimer's disease (AD) could account for the abnormal DST. Mendlewicz *et al* in their paper (*Journal*, 1984, **145**, 383–388) also suggest that a relationship exists between abnormal DST results and shortening of REM latency in major depression, invoking a possible cholinergic mechanism as one explanation.

The different explanations for the abnormal DST in arteriosclerotic dementia (ASD) and acute confusional state (ACS) seem also to be needlessly multiplied. It is surely not permissible to explain the abnormal DST as being due to "serious physical illness" in ACS and then seek other explanations for ASD and SD. By any standard of measurement, ASD and most forms of SD are serious physical illnesses and, at least in respect of the possibility of reversal being remote, considerably more serious than confusional states. The parsimonious explanation would be that serious illness in the presence of intact cholinergic activity, as in ASD and ACS, is likely to produce a high incidence of abnormal DST. A useful hypothesis would be to try to relate this state, which is presumably more likely to exist in slowly progressing than rapidly progressing forms of AD, to the abnormal DST.

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JUMPING FROM A GREAT HEIGHT

DEAR SIR,

We report the case of an eighteen-year-old boy who jumped 250 ft. (76 m.) from the Clifton Suspension Bridge in Bristol and survived.

He fell vertically, entering the water (which was 18 ft. (5.5 m.) deep at that point) feet first with toes pointed, at an estimated velocity of 75 m.p.h. (120 k.p.h.). On surfacing, he swam to the bank where he was pulled from the water by a passing policeman. The fall was reported in the local and national newspapers.

At hospital he gave an accurate account of events, having remained conscious throughout. His physical injuries were: dislocation of the left shoulder joint with a fracture of the greater trochanter of the humerus and crush fractures of T₉, T₁₀ and L₁ vertebrae. With the dislocation reduced, his physical state improved rapidly with bed rest.

Psychiatric assessment in casualty revealed a de-

pressed mood with suicidal intent over the previous week. A preoccupation with his isolated existence, together with the delusional fear that he had killed a friend by introducing him to heroin, progressed after a few days to further morbid delusions and also hostile auditory hallucinations. He had a four-year history of multiple drug abuse, was unemployed and lived a solitary life, seeing very little of his parents, both of whom had started new families since their divorce when the patient was aged eight. He improved over the course of four weeks with pharmacological and psychotherapeutic measures.

Perhaps the most interesting aspect of his story was his description of the fall itself. He said that while falling he developed the calm conviction that he would not die and experienced only pleasure and a sense of peace. He felt that time passed slowly and that he was a detached observer. He felt no pain on impact.

His survival of a fall of 250 ft. is remarkable. The only other known survivor was 24 year-old Sarah Henley who jumped from the Clifton Suspension Bridge in 1885, landing in the mud and sustaining multiple injuries (*Bristol Times and Mirror*, 1885). This is claimed to be the world's high diving record (McWhirter, N., 1984).

Injuries and survival factors have been considered in detail by Lukas *et al* (1981), who reported a series of 720 jumps from the Golden Gate Bridge across the San Francisco Bay (240 ft. 73 m.). Most died on impact and autopsy showed contusion or laceration of major organs in the chest or abdomen. There were fourteen survivors; the least injured being a 17 year-old, who had compression fractures of T₆, T₈, and L₁ vertebrae. Position and orientation of the body on impact appears to be critical, the vertical feet first position combining minimal surface area with the opportunity for gradual deceleration.

The patient's mental state may well have been altered by unknown drugs and psychosis, but his description is remarkably similar to those reported by Lukas *et al*, and in accounts of potentially fatal falls in alpine climbers (Noyes, R., 1972). They describe peace and pleasure, a slowed perception of time and no pain or distress.

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DIETARY VITAMIN B₁₂ DEFICIENCY

DEAR SIR,

Psychiatrists tend to screen elderly patients with cognitive impairment for vitamin B₁₂ deficiency, despite the finding of Elwood *et al* (1971), in a community sample of over 500 elderly patients, that there was no association between vitamin B₁₂ deficiency and impairment on tests of memory and learning. As Shulman (1967a) had pointed out, both dementia and vitamin B₁₂ deficiency are common in the elderly, and finding the two conditions associated may imply nothing about the aetiology of the dementia.

We examined 50 demented patients, aged between 67 and 89 (mean age 80.8 years) who were admitted to the Royal Cornhill Hospital, Aberdeen. As part of an assessment procedure, serum vitamin B₁₂ and folate levels were measured in each patient. Thirty-eight of the patients were diagnosed clinically as suffering from senile dementia of the Alzheimer type and 12 as suffering from multi-infarct (arteriosclerotic) dementia). These two groups did not differ significantly with respect to serum vitamin B₁₂ or folate levels. The patients were also divided into those who had lived alone and those who had been accompanied prior to admission. Of those 21 patients living alone 8 (38 per cent) had low serum vitamin B₁₂ levels (below 200 pg/ml) and 10 (48 per cent) had low serum folate levels (below 2 ng/ml). The corresponding figures for the 29 accompanied patients were 3 (10 per cent) and 10 (35 per cent) respectively. While the higher proportion of patients who lived alone having low folate levels did not reach statistical significance, the higher proportion of vitamin B₁₂ deficient patients living alone was statistically significant (Chi-squared = 5.47, df 1, $P < 0.02$).

Elsborg *et al* (1976) have described dietary deficiency of vitamin B₁₂ in the elderly, although this aetiology is usually held to be rare (Magnus *et al*, 1982). The increased incidence of vitamin B₁₂ deficiency in the socially isolated patients in our sample strongly suggests a dietary aetiology. Furthermore, in 7 of the 11 deficient patients, it was not coupled with, and thus not secondary to, a primary folate deficiency.

The findings also suggest that vitamin B₁₂ deficiency is much more likely to be a result, rather than a cause, of dementing illnesses. This is supported by the findings that while mild dysmnestic syndromes associated with vitamin B₁₂ deficiency are potentially reversible with vitamin replacement therapy (Shul-

man, 1976b), the same does not apply to established dementias (Shulman, 1967a).

We would suggest that clinicians continue to screen demented elderly patients for vitamin B₁₂ deficiency. It should be recognised however that this screening is being done not to detect a cause, but more a possible result of dementing illness and its concomitant dietary deficiencies.

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ANTICHOLINERGIC ABUSE

DEAR SIR,

In their study of benzhexol abuse, Crawshaw & Mullen, (*Journal*, September 1984, **145**, 300–303) have made a valuable contribution towards the recognition of this important problem. They draw attention to the fact that their series of cases, like that of Jakubczyk *et al*, included only young men and women. We feel, however, that this is a reflection of the nature of their sample and not an inherent feature of anticholinergic abuse. Our recently published series includes patients ranging from 22–56 years old (Pullen, Best & Maguire, 1984). It is important, therefore, to be alert to the possibilities of anticholinergic abuse whatever the age of the patient. Our series also confirmed that all current anticholinergic drugs, not just benzhexol, have a potential for abuse.

It may also be of interest that we have now calculated a 10% incidence of history of anticholinergic abuse for the current out-patients of the Marl-