between the two groups, while those with white matter abnormalities had a significantly lower blood flow and significantly higher oxygen extraction fraction than those without them. This suggests that T2-weighted MRI white matter hyperintensities represent ischaemic changes, in which oxgyen metabolism and function are fairly compensated. Therefore, white matter abnormalities are unlikely to explain the difference in emotional memory impairment among patients with Alzheimer's disease.

Leys, D., Soetaert, G., Petit, H., *et al* (1990) Periventricular and white matter magnetic resonance imaging hyperintensities do not differ between Alzheimer's disease and normal aging. *Archives of Neurology*, **47**, 524–527.

Marder, K., Richards, M., Bello, J., *et al* (1995) Clinical correlates of Alzheimer's disease with and without silent radiographical abnormalities. *Archives of Neurology*, **52**, 146–151.

Mori, E., Ikeda, M., Yamashita, H., *et al* (1997*a*) Amygdalar atrophy and emotional memory in Alzheimer's disease. *Annals of Neurology*, **42**, 394.

—, Yoneda, Y., Yamashita, H., *et al* (1997*b*) Medial temporal structures relate to memory impairment in Alzheimer's disease: an MRI volumetric study. *Journal of Neurology, Neurosurgery and Psychiatry*, **63**, 214–221.

Yamaji, S., Ishii, K., Sasaki, M., *et al* (1997) Changes in cerebral blood flow and oxygen metabolism related to magnetic resonance imaging white matter hyperintensities in Alzheimer's disease. *Journal of Nuclear Medicine*, **38**, 1471–1474.

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Prevalence of seasonal affective disorder

Sir: Blazer *et al* (1998) report that their review of the National Comorbidity Survey data revealed a much lower prevalence of seasonal affective disorder (SAD) than previously reported. They attribute this only to greater diagnostic rigour. Although their findings may be numerically correct, their conclusions may be misleading and could result in the withholding of effective treatment in mild cases of SAD.

It is generally accepted that decreased exposure to sunlight plays a part in the aetiology of SAD, be it through an effect on melatonin, serotonin, circadian systems or arousal systems. Studies have also shown that geographical location (latitude), with the corresponding changes in amount of sunlight available during autumn and winter months, correlates with the prevalence of SAD (Rosen *et al*, 1990) as well as with the prevalence and severity of other disorders with a seasonal pattern (Brewerton *et al*, 1994).

The population sample in the National Comorbidity Survey resides between 30 and 48 degrees latitude, whereas the populations in most previous studies (Canada, Norway, Britain, etc.) reside between 48 and 70 degrees. Clearly, the National Comorbidity Survey is limited to a population less at risk of developing SAD than previously studied ones and the results are less a matter of all-or-none diagnostic accuracy than of degree, both in latitude and severity of symptoms.

Blazer, D. G., Kessler, R. C. & Swartz, M. S. (1998) Epidemiology of recurrent major and minor depression with a seasonal pattern. The National Comorbidity Survey. *British Journal of Psychiatry*, **172**, 164–167.

Brewerton, T. D., Krahn, D. D., Hardin, T. A., *et al* (1994) Findings from the Seasonal Pattern Assessment Questionnaire in patients with eating disorders and control subjects: effects of diagnosis and location. *Psychiatry Research*, **52**, 71–84.

Rosen, L. N., Targum, S. D., Terman, M., *et al* (1990) Prevalence of seasonal affective disorder at four latitudes. *Psychiatry Research*, **31**, 131–144.

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Author's reply: I, along with my co-authors, agree with Dr Vera's basic premise, namely that the geographical location of a study will impact the frequency estimates of recurrent major and minor depression with a seasonal pattern. The studies with which we have directly compared our estimates, however, were fielded in areas of similar latitude. For example, the study by Kasper *et al* (1989) was performed in the mid-Atlantic section of the USA with estimates of 4.3% to 10% for seasonal affective disorder. The study by Rosen *et al* (1990) estimated the prevalence in central Florida, the southernmost portion of the continental United States. Their estimate was 1.4% for seasonal affective disorder. Our estimates (1998) for the entire continental United States were 0.4% for major depression with a seasonal pattern and 1.0% for minor depression with a seasonal pattern. As best we can determine, our estimates are considerably lower than other estimates at equivalent geographical latitudes and, therefore, we must assume diagnostic differences as a major contributor to the lower prevalence.

Blazer, D. G., Kessler, R. C. & Swartz, M. S. (1998) Epidemiology of recurrent major and minor depression with a seasonal pattern. The National Comorbidity Survey. *British Journal of Psychiatry*, **172**, 164–167.

Kasper, S., Wehr, T. A., Bartko, J. J., *et al* (1989) Epidemiological findings of seasonal changes in mood and behavior. *Archives of General Psychiatry*, **46**, 823–833.

Rosen, L. N., Targum, S. D., Terman, M., *et al* (1990) Prevalence of seasonal affective disorder at four latitudes. *Psychiatry Research*, **31**, 131–144.

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Sudden death in psychiatric patients

Sir: Ruschena *et al* (1998) have written an interesting paper suggesting an increase in sudden death in psychiatric patients. The Victorian Psychiatric Register is an ideal information source for examining the problem. The authors are to be congratulated on identifying and matching the patients on this register with cases of sudden unexpected death. This study would, however, be far more credible if the authors had undertaken a more orthodox analysis, by examining the numbers and time at risk in each age band, gender, social class and diagnostic group, and comparing the number of deaths with the number expected from the state rates in the appropriate groupings. This would have enabled them to take into account that psychiatric patients come and go, and the Register is an ideal information source for person-years at-risk calculation. One would also have been able to disentangle confounding variables such as difference in social class group of psychiatric patients, and compare mortality rates with similar population groups.

Although the findings are suggestive, differences in average age of the various groups demonstrate the need for a more thoroughly methodologically sound analysis.

Ruschena, D., Mullen, P. E., Burgess, P., *et al* (1998) Sudden death in psychiatric patients. *British Journal of Psychiatry*, **172**, 331–336.

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