

THIAMIN STATUS OF HOMELESS MEN IN SYDNEY

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Wernicke-Korsakoff syndrome, one of the diseases associated with thiamin deficiency, has increased in incidence in Sydney in the past 15 years (Truswell and Apeagyei 1982). Homeless people may be at particular risk due to erratic intakes of food and generally high alcohol intakes. The nutritional status of homeless men is being investigated using dietary, clinical and biochemical methods. Dietary information was collected by 24-hour recall with prompting and analysed by the SPEADD computer program. Clinical examination was carried out at the same time as a questionnaire was administered and blood taken. The sample size was 113 males, with blood samples and dietary information available from the majority.

Fifty-seven % were regularly eating less than 3 meals a day and 70% were drinking very heavily (>80 g alcohol per drinking session). Half of these did not eat while drinking. Alcohol intakes ranged from 0 to 885 g ($\bar{x} \pm SD = 254 \pm 186$). Mean thiamin intake (0.8 mg/d) failed to reach the RDI (1.0 mg). Twenty-five % had abnormal gaits, ataxic and/or high-stepping, and shuffling. Reduced ankle or knee jerks were found in 48% while 9% had foot drop. Nineteen % had reduced sensation in legs and feet and 16% hyperaesthesia ('burning' feet). Forty-two % had a positive Romberg test (but 20% had already consumed alcohol before the examination). Nystagmus was diagnosed in 35% and ophthalmoplegia in 5%. Simple clinical tests were used for intellectual function: 19% did not know what year it was and 9% did not know accurately where they were. Thirty-nine % appeared to have some disturbance of mental function.

Biochemical assessment was by RBC transketolase activity and TPP effect (Wood and Penington 1973). Percentage increase by adding TPP measured the degree of the deficiency.

TPP Effect (%)	Classification (Brin 1967)	Number	%
≥25	Deficient	12	15
15 - 24	Marginal	17	21
0 - 14	Adequate	51	64
	<u>Total</u>	80	100

The five subjects with ophthalmoplegia had generally drunk alcohol but not eaten the day before and were sporadic users of vitamins, if at all. Blood was obtainable from three. Two were frankly deficient (TPP effect 44% and 25%) and the third marginal (19%).

It thus appears that thiamin deficiency is prominent in this group. The proportion (5%) with ophthalmoplegia is high considering that: this population tend to be given vitamin supplements; binge drinkers (42%) are less susceptible to Wernicke's encephalopathy (Victor et al. 1983); and, finally, that this population is functioning outside hospital.

BRIN, M. (1967). In 'Newer Methods of Nutritional Biochemistry' 111: 407, ed. A.A. Albanese (Academic Press: New York).

TRUSWELL, A.S. and APEAGYEI, F. (1982). In 'Adverse Effects of Foods', pp. 253-258, eds E.F.P. Jelliffe and D.B. Jelliffe (Plenum: New York).

VICTOR, M., ADAMS, R.D. and COLLINS, G.H. (1971). 'The Wernicke-Korsakoff Syndrome'. (Blackwell: Oxford).

WOOD, B. and PENINGTON, D.G. (1973). Int. J. Vit. Nutr. Res. 43: 253.

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