

**METABOLIC VITAMIN IMBALANCE IN SOCIAL DRINKING, CHRONIC ALCOHOLISM
AND FOOD FADDISM**

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Dietary intakes of 26 individually screened 'normal' adult subjects were computed from weighed and analysed foods consumed during seven consecutive days. The subjects were from the affluent class of the Australian community and included three teetotallers, ten occasional drinkers, ten regular social drinkers and three heavy social drinkers whose average alcohol intakes were 0, 1-8, 14-35 and 50-90 g/day respectively. The subjects took no medications.

Blood profiles of 8 vitamins were measured in the 26 'normals' and in 22 men (10 Europeans and 12 Aborigines) diagnosed as chronic alcoholics. It was found that, in 'normals' on low vitamin intakes, alcohol consumption above 20 g/day (social drinkers) depressed blood levels of vitamin B₁ and increased plasma levels of vitamin A as retinol. Consumption of higher amounts of alcohol by chronic alcoholics produced severe biochemical imbalances of practically all vitamins tested, but particularly vitamins B₁, A and C. Plasma vitamin C was around zero in 21 of the 22 alcoholics.

The diets of vegans, who do not eat any food of animal origin, could be expected to be deficient in vitamin B₁₂ and preformed vitamin A. The dietary intake of one vegan was assessed by the food log method. Blood vitamin levels were measured in 5 vegans. All 5 had low plasma levels of vitamin B₁₂ and one also had low plasma levels of vitamin A.

The vitamin profiles were interpreted according to the 1976 tentative standards of the Vitamin Laboratories, and the following levels were considered acceptable: Vitamin A, 120-230 i.u.; provitamin A (beta-carotene) 20-100 µg; vitamin E, 0.7-1.5 mg; vitamin C, 0.7-2.0 mg per 100 ml plasma respectively; vitamin B₁₂, 300-500 pg/ml plasma; vitamin B₁, TPP effect < 15%, erythrocyte transketolase activity > 140 µMol/min/l; vitamin B₂, FAO effect < 5%, erythrocyte glutathione reductase activity > 570 µMol/min/l; vitamin B₆, PALP effect < 80%, erythrocyte glutamate oxalo-acetate transaminase activity > 330 µMol/min/l. These levels were the ranges (mean ± 2 standard deviations) found in the group of 'normals' whose intakes of vitamins were sufficient to ensure tissue saturation levels in the blood irrespective of intakes of alcohol and smoking habits.

The data presented illustrate that tissue desaturation of some vitamins occurs when the dietary pattern is distorted either by high percentage of alcohol-derived calories or by food faddism. The question must be raised: Is tissue saturation of vitamins essential for optimum health?

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