

Apparent Absence of Cerebrocardiovascular Disease in Melanesians - Risk Factors and Nutritional Considerations

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In the island of Kitava, Trobriand Islands, Papua New Guinea, a subsistence lifestyle, uninfluenced by western dietary habits, is still maintained. Cultivated tubers, fruit, fish and coconut are dietary staples.

Objectives. (i) To search for evidence of cerebrocardiovascular disease (CVD). (ii) To compare cardiovascular risk factors and the intake of selected nutrients with healthy Swedish populations. (iii) To analyse relationships between risk factors and age, sex, smoking status and serum fatty acids among Kitavan adults.

Design. Cross-sectional survey.

Subjects. (i) Interviews of 213 subjects aged 20-96 and risk factor measurement in 151 males and 69 females aged 14-87 years. (ii) Healthy Swedish reference populations.

Main outcome measures. Reported and observed occurrence of CVD, smoking rates, resting electrocardiograms (ECG), estimated nutrient intakes, blood pressure (BP), body mass index (BMI), triceps skinfolds, serum total cholesterol (TC), triglycerides (TG), high density lipoprotein cholesterol (HDL-C), estimated low density lipoprotein cholesterol (LDL-C), apolipoproteins (apo) B, A1 and (a), plasma plasminogen activator inhibitor-1 (PAI-1), fibrinogen, coagulation factors VII:C and VIII:C, von Willebrand factor antigen, serum tocopherols and cholesterol ester (CE) fatty acids (FA).

Results. Despite that smoking rates were 80%, CVD was absent or extremely rare. Low diastolic BP, leanness and low PAI-1 were the most remarkable characteristics in comparison with Swedish subjects. Among males systolic BP, TC, LDL-C and fibrinogen were slightly lower in Kitavans, while females differed less and had even higher fibrinogen than Swedish females. Other variables were not very favourable in either sex. Smokers differed only by lower HDL-C and apoA1 and higher TG. The diet was low in total fat, monounsaturated fat, linoleic acid, trans-FA, salt and phytic acid, while high in saturated fat (12:0 and 14:0), fish fat, minerals, vitamins A and C, folic acid, soluble fibre and is expected to have a low glycaemic index and to be satiating. The composition of CE-FA was in accordance with the estimated FA intake and explained much of the variation of serum lipids.

Conclusions. The findings further indicate that CVD is preventable and that nutrition may be very important. Of the analysed risk factors low diastolic BP, leanness and low PAI-1 seem to be the most important modifiable ones. The lower serum cholesterol would provide some additional benefit.