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Alcohol and coronary heart disease: the roles of HDL-cholesterol and smoking.

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OBJECTIVES: To study the role of HDL-cholesterol (HDLc) in the causal pathway mediating the effect of alcohol on coronary heart disease (CHD). **DESIGN:** Cox proportional hazard models were used to compare the relative CHD risks in various HDLc-smoking categories. **SETTING:** A prospective, multicentre, placebo-controlled, double-blind CHD primary prevention trial with gemfibrozil in primary (occupational) health care units, the Helsinki Heart Study. **SUBJECTS:** Dyslipidaemic middle-aged men with available alcohol consumption data (1924 of 2035) in the placebo arm of the 5-year study. **MAIN OUTCOME MEASURES:** Seventy-seven (of 84) cases of nonfatal myocardial infarction or cardiac death. **RESULTS:** A U-shaped association was detected between alcohol consumption and CHD. The protection was found both in subjects with low (mean 0.94 mmol L⁻¹) and normal (mean 1.25 mmol L⁻¹) HDLc with corresponding reductions of 23% and 36% in relative risks. In contrast to previous data, alcohol offered virtually no protection against CHD in non-smokers. In subjects consuming more than 800 g pure ethanol annually, the CHD incidence was 6/1000 in subjects with more than three weekly drinking occasions, compared to 11/1000 in 'weekend' drinkers. **CONCLUSIONS:** Our results confirm the protective effect of alcohol against CHD. However, in contrast to previous data the effect in our population is restricted to smokers and the role of HDLc in mediating the effect is less central than suggested previously.

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