

## EFFECT ON PLASMA HDL CHOLESTEROL OF EXCESSIVE ALCOHOL INTAKE

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Epidemiological studies have reported a relationship between plasma HDL cholesterol concentration and alcohol intake. Moderate alcohol intake appears to increase plasma HDL cholesterol and increased HDL appears to be a protective factor against coronary heart disease (Kuller et al. 1983). However, little has appeared on the effects of excessive alcohol intake. As part of a study of the nutritional requirements of homeless men in Sydney, plasma HDL cholesterol was measured in a group (70) of individuals in whom heavy drinking was common. Subjects were questioned as to their sessional drinking habits, smoking habits and a non-fasting blood sample was obtained from those consenting to take part. Plasma gamma glutamyl transpeptidase (GGT), alanine amino transferase and aspartate amino transferase were measured by standard automated methods. Plasma HDL cholesterol was measured after heparin-MnCl<sub>2</sub> precipitation. A sessional alcohol intake of more than 80g was taken as the lower limit of 'heavy drinking'. Upper limits for normal plasma enzyme levels were taken as 55iu/L and levels indicative of severe liver disease as 3 times this level for GGT.

Total cholesterol was not different between those who drank 80g per session and those who drank more. However, HDL cholesterol was significantly higher in the latter group resulting in a higher ratio of HDL to total cholesterol (Table). A sub-group of subjects who had GGT>165iu/L and who also drank excessively had significantly lower HDL cholesterol and a lower ratio.

The possible confounding effect of smoking which tends to lower HDL cholesterol on the effect of alcohol was tested by analysis of variance. Although there was a trend for HDL cholesterol to fall with increase in smoking from 0 to 40 cigarettes per day, this failed to reach significance.

Table. Mean( $\pm$ sd) plasma total and HDL cholesterol concentrations and alcohol intake of subjects

	no.	Cholesterol (mM/L)			Alcohol intake(g)	
		total	HDL	Ratio(H/T)	Mean	Median
alcohol<80g	20	5.00 $\pm$ 0.91	1.12 $\pm$ 0.38*	0.232 $\pm$ 0.10	25 $\pm$ 27	34
" >80g	41	5.00 $\pm$ 1.00	1.35 $\pm$ 0.36	0.276 $\pm$ 0.08	231 $\pm$ 113	236
" >80g and GGT>165iu/L	9	4.30 $\pm$ 0.82	0.92 $\pm$ 0.37*	0.211 $\pm$ 0.07*	387 $\pm$ 192	314

\*P<0.05

Thus, increased alcohol intake does raise HDL cholesterol in this population but at levels of intake considered excessive for good health. Those subjects with resultant liver damage, however, show a significant fall in HDL cholesterol.

KULLER, L.H., HULLEY, S.B., LaPORTE, R.E., NEATON, J. and DAI, W.S. (1983).  
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