

Objective

- Epidemiological studies have shown that light to moderate alcohol consumption is associated with a reduced risk of Coronary Heart Disease (CHD).
- Clinical and biochemical studies have suggested several plausible mechanisms whereby alcohol could reduce CHD risk, such as favorable changes of the serum lipid profile.
- There is little evidence that one particular alcoholic beverage (beer or wine eg) is more effective in reducing CHD risk than another.

The objective was to investigate the effect of total alcohol and different beverage - such as wine or beer - consumption on lipid profile.

The FLVS Study

- FLVS II, Fleurbaix Laventie Ville Santé II, is a prospective study on the relationship between health and nutrition.
- The FLVS survey started in 1993. This first study investigated the impact of a 5-year nutritional education program performed at school on the dietary habits of children and their family. The FLVS II included 294 families from the first study in 1999. They will be interviewed 2 and 4 years after the baseline visit.
- At baseline and at each time of follow up sociodemographic informations, dietary intake and lipid profile are collected.

Patients and methods

Sample for analyses

- 520 subjects were included in the analyses: 236 men and 284 women.

Methods

- Dietary intake was assessed by a self-administered questionnaire. Alcohol intake was assessed in great details. Each type of beverage, the usual number of glasses consumed per week and the type of glass used was reported.
- Beer, Wine (red or white) and other alcohol (hard liquor, cider, Champaign) were recorded. Alcohol consumption was

expressed as number of standardized drinks per day (one drink represents 10 g of alcohol).

- Lipid profile: total cholesterol, HDL and LDL-cholesterol (calculated by Friedwald equation) and triglycerides were measured.
- Statistical analyses were adjusted for physical activity, smoking habits and age*.

Results

- Among the 284 women, 59% and 76% drank beer and wine respectively. Corresponding figures for the 236 men were 91% for beer and 95% for wine. So a lot of people consumed both beer and wine.

- Alcohol consumption was analyzed by classes which were different in men and women (table1).

- Alcohol consumption was associated with increased HDL-cholesterol levels in both men and women, whereas it was associated with low LDL-cholesterol levels in women only (tables 2 and 3).

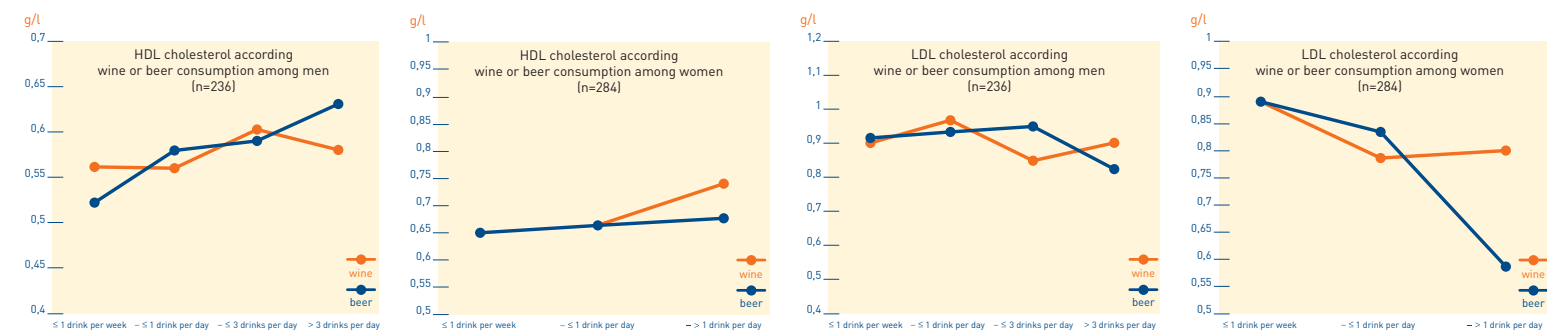
Tables 2: Relation between alcohol consumption and lipid profile among men (n=236)

	Alcohol consumption (standardized drinks)				p*
	≤ 1 drink per week	≤ 1 drink per day	≤ 3 drinks per day	> 3 drinks per day	
Number of subjects	20	55	82	79	
Triglycerides (g/l)	1,31±0,19	1,29±0,11	1,18±0,09	1,29±0,09	NS
HDL-Cholesterol (g/l)	0,50±0,03	0,54±0,02	0,56±0,02	0,62±0,02	<0,008
Total Cholesterol (g/l)	2,11±0,09	2,12±0,05	2,11±0,04	2,11±0,04	NS
LDL- Cholesterol (g/l)	0,95±0,09	0,93±0,05	0,95±0,04	0,85±0,04	NS

Tables 3: Relation between alcohol consumption and lipid profile among women (n=284)

	Alcohol consumption (standardized drinks)			p*
	≤ 1 drink per week	≤ 1 drink per day	> 1 drink per day	
Number of subjects	90	128	66	
Triglycerides (g/l)	0,91±0,09	0,98±0,09	1,11±0,11	NS
HDL-Cholesterol (g/l)	0,63±0,02	0,66±0,02	0,68±0,02	<0,02
Total cholesterol (g/l)	2,00±0,03	2,00±0,03	2,01±0,04	NS
LDL- Cholesterol (g/l)	0,93±0,04	0,85±0,04	0,77±0,05	<0,07

Figure 1: HDL and LDL cholesterol according wine or beer consumption



- HDL-cholesterol is higher in men who consumed light to moderate quantities of beer, but not of wine, than in non-drinkers (p<0,03).

- LDL-cholesterol decreased with beer consumption in women (p<0,006).

- HDL-cholesterol is higher in women who consumed wine (p<0,004).

- Triglycerides levels were not affected by light to moderate alcohol consumption.

Conclusion

In conclusion, moderate alcohol consumption is associated with a more favorable lipid profile than alcohol abstinence independently of the type of alcoholic beverage. There are, however, several difference between beer and wine:
 1) wine consumption is associated with increased HDL-cholesterol in women,
 2) beer consumption is associated with increased HDL-cholesterol in men and decreased LDL-cholesterol in women.

- Any alcohol consumption includes all the type of beverage. A person who drinks less than one drink per week consumes less than 10g alcohol per week whatever the type of alcoholic beverage.

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