

# **Changes in Cardiovascular Risk Factors Associated with Wine Consumption in Intervention Studies in Humans**

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## **Abstract**

Evidence that links moderate wine consumption to cardiovascular health corresponds mostly to ecological observations. Intervention studies using moderate wine consumption with ischemic heart disease as the end point will probably not be available soon because they require long-term follow-up and adequately randomized experimental groups. In contrast, short-term studies focused on risk factors are feasible and should provide evidence suitable for a critical assessment of the apparent beneficial role of moderate drinking, as well as other lifestyle measures, on cardiovascular health.

Our intervention studies suggest an increase in HDL-cholesterol, decrease in the omega-6/omega-3 ratio, and in some cases a slight increase in triglyceride levels from moderate drinking. Observed changes in hemostasis include reduced coagulation and increased fibrinolysis; effects on blood pressure have been inconsistent. There is a reduction in inflammatory markers and an increase in endothelial function. Effects of wine are greater for subjects on a Mediterranean diet than those on an occidental diet. Several key biochemical or physiological processes related to atherogenesis are positively modified by wine consumption. From our observations, we conclude that wine in moderation and as part of the diet is directly responsible for changes that may help decrease the risk of cardiovascular disease.