

Vitamin A implicated in the development of alcoholic liver disease

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With a name like "Alcoholic Liver Disease," you may not think about vitamin A as being part of the problem. That's exactly what scientists have shown, however, in a new research report appearing in the September 2015 issue of *The FASEB Journal*. In particular, they found that chronic alcohol consumption has a dramatic effect on the way the body handles vitamin A. Long-term drinking lowers vitamin A levels in the liver, which is the main site of alcohol breakdown and vitamin A storage, while raising vitamin A levels in many other tissues. This opens the doors for novel treatments of alcoholic liver disease that focus on counteracting alcohol's effect on vitamin A in the liver.

"We hope this study will lead to a broader understanding and appreciation of the fact that excessive consumption of alcohol has a negative effect on [vitamin A](#) function in the body," said Robin D. Clugston, Ph.D., a researcher involved in the work from the Department of Medicine, Division of Preventive Medicine and Nutrition at Columbia University Medical Center in New York, New York.

"Ultimately, we hope that vitamin A will be seen as a broad target for alcohol in [multiple tissues](#) of the body and that our understanding of alcohol-induced disease will be linked together by its effects on vitamin A."

Clugston and colleagues conducted multiple experiments using several groups of mice including those who received alcohol-containing food and alcohol-free food. They analyzed the liver and other organs (i.e., kidney, spleen, heart, lung, white adipose, brown adipose and blood),

from both groups of mice and measured tissue vitamin A levels. The alcohol-fed mice had distinct changes in how their body handled vitamin A. In general, vitamin A levels were lower in the liver and higher in other tissues. This strongly suggests that vitamin A in the liver is reduced by [excessive alcohol consumption](#) and that these findings are important in the development of [alcoholic liver disease](#).

"This research not only give us new insights into how chronic alcoholism affects vitamin A in the liver," said Gerald Weissmann, M.D., Editor-in-Chief of *The FASEB Journal*, "but it also sheds light on how our body processes vitamin A overall. This is particularly important since some people get too much vitamin A through 'supplements,' while others still do not get enough because of poor access to proper nutrition."

More information: Robin D. Clugston, Li-Shin Huang, and William S. Blaner. Chronic alcohol consumption has a biphasic effect on hepatic retinoid loss. *FASEB J.* September 2015 29:3654-3667; published ahead of print May 18, 2015, [DOI: 10.1096/fj.14-266296](https://doi.org/10.1096/fj.14-266296)

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