

LETTERS

HEALTH BENEFITS OF MODERATE ALCOHOL CONSUMPTION

How good is the science?

T Stockwell *director*¹, A Greer *graduate student*², K Fillmore *senior scientist*³, T Chikritzhs *professor*⁴, C Zeisser *postdoctoral fellow*¹

¹Centre for Addictions Research of British Columbia, University of Victoria, Victoria, BC, Canada, V8Y 2E4; ²Dalla Lana School of Public Health, University of Toronto, ON, Canada; ³Institute for Scientific Analysis, San Francisco, CA, USA; ⁴National Drug Research Institute, Curtin University, Perth, WA 6845, Australia

Ronksley and colleagues asserted that the association between moderate alcohol consumption and reduced mortality risk was “beyond question.”¹ We reviewed all 67 studies that generated the 84 articles in their meta-analysis. All but two had at least one of six serious methodological problems, and these two had mixed findings (figure 1); see <http://carbc.ca/Portals/0/News/FeatureSupplement201203.pdf> for bibliography).

(1) No control for smoking or health status: A conservative criterion because Naimi and colleagues found moderate drinkers to be healthier than abstainers on 27 risk factors for heart disease²

(2) Drinking assessed over fewer than 30 days: A much longer time period is needed to assess lifetime risk of morbidity and mortality

(3) Failure to assess quantity or frequency of consumption: Both are needed to estimate Ronksley’s dependent variable of average daily consumption

(4) Former drinkers counted as abstainers: Former drinkers often abstain because of ill health so would make moderate drinkers appear healthy by comparison³

(5) Occasional drinkers counted as abstainers: Drinkers also tend to reduce consumption with increasing age and frailty.^{3,4} Counting occasional drinkers as abstainers may make moderate drinkers seem healthier

(6) Occasional drinkers combined with moderate drinkers: Occasional drinkers may have enhanced health status owing

to other health protective factors.⁴ Combining the two groups may make moderate drinkers seem healthier.

We therefore suggest that it is premature to draw firm conclusions from this literature, and that strong competing hypotheses remain to explain the association of health benefits with moderate drinking. The possibility of uncontrolled confounding from other lifestyle factors² is supported by meta-analyses finding biologically implausible benefits from moderate drinking—for example, protection against cirrhosis.⁵ We hope future studies will avoid these errors and provide a clearer answer to this important question.

Competing interests: None declared.

- 1 Ronksley R, Brien S, Turner B, Mukamal K, Ghali W. Association of alcohol consumption with selected cardiovascular disease outcomes: a systematic review and meta-analysis. *BMJ* 2011;342:d671. (22 February.)
- 2 Naimi T, Brown D, Brewer R, Giles W, Mensah G, Serdula M, et al. Cardiovascular risk factors and confounders among nondrinking and moderate drinking US adults. *Am J Prevent Med* 2005;28:369-73.
- 3 Fillmore K, Stockwell T, Chikritzhs T, Bostrom A. Moderate alcohol use and reduced mortality risk: systematic error in prospective studies and new hypotheses. *Ann Epidemiol* 2006;95:135-46.
- 4 Shaper AG, Wannamethee SF. J-shaped curve and changes in drinking habit. In: Chadwick, DJ, Goode JA, eds. *Alcohol and cardiovascular diseases: Novartis foundation symposium 216*. John Wiley and Sons, 1998:173-92.
- 5 Rehm J, Taylor B, Mohapatra S, Irving H, Baliunas D, Patra J, et al. Alcohol as a risk factor for liver cirrhosis—a systematic review and meta-analysis. *Drug Alcohol Rev* 2010;29:437-45.

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