

Citation:

Britton A, McKee M. The relation between alcohol and cardiovascular disease in Eastern Europe: Explaining the paradox. *J Epidemiol Community Health*. 2000 May; 54 (5): 328-332. Review.

PubMed ID: [10814651](#)

Study Design:

Meta-analysis or Systematic Review

Class:

M - [Click here](#) for explanation of classification scheme.

Research Design and Implementation Rating:

NEUTRAL: See Research Design and Implementation Criteria Checklist below.

Research Purpose:

- To conduct a systematic review of literature examining the relationship between cardiovascular disease (CVD) and alcohol consumption from heavy drinking, and irregular (binge) drinking
- The authors goal was to reconcile the apparent contradiction between research showing that alcohol is cardio-protective at all levels of consumption and evidence from Eastern Europe, which suggests that alcohol is an important factor in the high rates of cardiovascular death in these countries.

Inclusion Criteria:

Inclusion criteria identified in the detailed report:

Britton A, McKee M, Leon DA. Cardiovascular disease and heavy drinking: A systematic review. *London: London School of Hygiene and Tropical Medicine*, 1998.

Exclusion Criteria:

Exclusion criteria details are provided in the detailed report noted above.

Description of Study Protocol:

- A systematic search of published literature was conducted using MEDLINE (date range: 1966-1997) and EMBASE (date range 1980-19997). Additional references were identified by reviewing bibliographies of related papers and from information provided by researchers involved in alcohol and cardiovascular research. The detailed search strategies are described in a separate report (noted above), which also provides full details of the included studies.
- Search terms included alcohol, drinking, beer, wine, spirits, mortality, death, coronary heart

disease. MeSH terms included “alcoholism”, and “death,-sudden,- cardiac.”

Data Collection Summary:

- This paper primarily reports on the systematic review of six prospective cohort studies, which ranged from 6.7 to 40 years of follow-up]
- The authors also discuss selected case-control studies, which were evaluated in the comprehensive systematic review.

Description of Actual Data Sample:

- *Initial N:* N=6 prospective cohort studies
- *Age:* All study subjects were adult males. The study sizes ranged from 1,233-41,399 subjects.
- *Ethnicity:* Varied by study
- *Other relevant demographics:* Varied by study
- *Anthropometrics:* Varied by study
- *Location:* Europe and the United States.

Summary of Results:

Key Findings

- There is considerable evidence from both cohort and case-control studies that binge drinkers as are at greater risk of cardiac arrhythmias and sudden cardiac death
- Physiological and case-control studies provide evidence of a temporal relationship between binge drinking and death
- There is also consistent evidence of a dose-response relationship between binge drinking and sudden cardiac death and for fatal myocardial infarction
- The physiological evidence indicates that a causal relation is biologically plausible and that the effects of binge drinking are quite different from those seen with regular moderate, and even heavy drinking.

Two related issues of note (supported by less evidence):

- In central and eastern Europe and the former Soviet Union the traditional diet is low in many micronutrients. The authors speculated that the cardioprotective effect may be absent in those with low folate intakes.
- It is likely that some deaths associated with alcohol are actually attributable to drinking contaminated products.

Author Conclusion:

An association between binge drinking and cardiovascular death meets the standard criteria for causality.

Reviewer Comments:

This manuscript provides an overview of a comprehensive systematic review, which was published as a technical report: Britton A, McKee M, Leon DA. Cardiovascular disease and heavy drinking: A systematic review. London: London School of Hygiene and Tropical Medicine, 1998.

Research Design and Implementation Criteria Checklist: Review Articles

Relevance Questions

- | | | |
|----|---|-----|
| 1. | Will the answer if true, have a direct bearing on the health of patients? | Yes |
| 2. | Is the outcome or topic something that patients/clients/population groups would care about? | Yes |
| 3. | Is the problem addressed in the review one that is relevant to nutrition or dietetics practice? | Yes |
| 4. | Will the information, if true, require a change in practice? | Yes |

Validity Questions

- | | | |
|-----|--|-----|
| 1. | Was the question for the review clearly focused and appropriate? | Yes |
| 2. | Was the search strategy used to locate relevant studies comprehensive? Were the databases searched and the search terms used described? | Yes |
| 3. | Were explicit methods used to select studies to include in the review? Were inclusion/exclusion criteria specified and appropriate? Were selection methods unbiased? | ??? |
| 4. | Was there an appraisal of the quality and validity of studies included in the review? Were appraisal methods specified, appropriate, and reproducible? | ??? |
| 5. | Were specific treatments/interventions/exposures described? Were treatments similar enough to be combined? | Yes |
| 6. | Was the outcome of interest clearly indicated? Were other potential harms and benefits considered? | Yes |
| 7. | Were processes for data abstraction, synthesis, and analysis described? Were they applied consistently across studies and groups? Was there appropriate use of qualitative and/or quantitative synthesis? Was variation in findings among studies analyzed? Were heterogeneity issues considered? If data from studies were aggregated for meta-analysis, was the procedure described? | ??? |
| 8. | Are the results clearly presented in narrative and/or quantitative terms? If summary statistics are used, are levels of significance and/or confidence intervals included? | Yes |
| 9. | Are conclusions supported by results with biases and limitations taken into consideration? Are limitations of the review identified and discussed? | Yes |
| 10. | Was bias due to the review's funding or sponsorship unlikely? | Yes |

