

## **The association between alcohol consumption and all-cause mortality in a cohort of male employees in the German construction industry.**

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**BACKGROUND:** Many epidemiological studies have shown a J- or U-shaped association between alcohol consumption and total mortality. It has been argued that the higher mortality among abstainers than among moderate drinkers might result from misreporting of alcohol consumption, confounding or inclusion of a high proportion of ex-drinkers or individuals with pre-existing diseases among abstainers. **METHODS:** These concerns were addressed in a cohort study among 8043 construction workers aged 25-64 years who underwent occupational health examinations at six centres in South West Germany during 1986 to 1988. Abstainers were compared with alcohol users with respect to biological markers of alcohol consumption, prevalence of pre-existing diseases and other covariates. Study participants were followed for all-cause mortality until 1994. **RESULTS:** There was a clear monotonic dose-response relationship of biological markers with self-reported alcohol consumption. Prevalence of pre-existing diseases was highest among heavy drinkers, while no major differences were observed between abstainers and men who consumed 1-49 g of alcohol per day. Overall, 172 men died during the follow-up period. There was a strong U-shaped relationship between alcohol consumption and total mortality. Mortality was 2.8 times higher (95% confidence interval [CI]: 1.5-5.4) among non-drinkers than among men who consumed 1-49 g of alcohol per day after control for potential confounders in multivariable analyses. Strongly increased mortality was also found among heavy drinkers. Exclusion of non-drinkers with pre-existing diseases did not change the U-shaped association. **CONCLUSIONS:** We found a strong U-shaped association between alcohol consumption and all-cause mortality which is unlikely to be explained by misreporting, confounding or pre-existing disease.

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