

## Association of Alcohol Consumption with Active Tuberculosis in Taiwanese Adults: A Nationwide Population-Based Cohort Study

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**Abstract :** Background: Animal studies have shown that alcohol exposure may cause immunosuppression and increase the susceptibility to tuberculosis (TB) infection. However, the temporality of alcohol consumption with subsequent TB development remains unclear. This nationwide population-based cohort study aimed to investigate the impact of alcohol exposure on TB development in Taiwanese adults. Methods: We included 46 196 adult participants from three rounds (2001, 2005, 2009) of the Taiwan National Health Interview Survey. Alcohol consumption was classified into heavy, regular, social, or never alcohol use. Heavy alcohol consumption was defined as intoxication at least once/week. Alcohol consumption and other covariates were collected by in-person interviews at baseline. Incident cases of active TB were identified from the National Health Insurance database. Multivariate logistic regression was used to estimate the association between alcohol consumption and active TB, with adjustment for age, sex, smoking, socioeconomic status, and other covariates. Results: A total of 279 new cases of active TB occurred during the study follow-up period. Heavy (adjusted odds ratio [AOR], 5.21; 95% confident interval [CI], 2.41-11.26) and regular alcohol use (AOR, 1.73; 95% CI, 1.26-2.38) were associated with higher risks of incident TB after adjusting for the subject demographics and comorbidities. Moreover, a strong dose-response effect was observed between increasing alcohol consumption and incident TB (AOR, 2.26; 95% CI, 1.59-3.21;  $P < .001$ ). Conclusion: Heavy and regular alcohol consumption were associated with higher risks of active TB. Future TB control programs should consider strategies to lower the overall level of alcohol consumption to reduce the TB disease burden.

**Keywords :** alcohol consumption, tuberculosis, risk factor, cohort study

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