

Meta-analyses published between 2000 and 2023 on alcohol consumption and all-cause mortality (deaths from all causes combined)

Author, Year	Same or lower risk light-to-moderate alcohol drinkers have the same risk as non-drinkers, or lower*	J-shaped curve light-to-moderate drinkers have lower risk than non-drinkers†	Former drinkers separated from lifetime abstainers‡
Zhao et al., 2023 ^{§¶}	✓	✗	✓
Stockwell et al., 2016 [¶]	✓	✗	✓
Fillmore et al., 2006	✓	✗	✓
Di Castelnuovo et al., 2022	✓	✓	✓
Hu et al., 2022 (men only)	✓	✓	✗
Degerud et al., 2020	✓	✓	✗
Colpani et al., 2018 (women only)	✓	✓	✗
Li et al., 2018	✓	✓	✗
Wood et al., 2018	✓	✓	✓
Perreault et al., 2017 [§]	✓	✓	✓
Bobak et al., 2016 [§]	✓	✓	✗
Zheng et al., 2015 [§]	✓	✓	✗
Ferrari et al., 2014 [§]	✓	✓	✓
Sluik et al., 2014 [#]	✓	✓	✓
Jayasekara et al., 2014 (men only)	✓	✓	✗
Soedamah-Muthu et al., 2013	✓	✓	✗
Inoue et al., 2012 [§]	✓	✓	✓
Ronksley et al., 2011	✓	✓	✗
Rehm et al., 2001 [§]	✓	✓	✓
Gronbaek et al., 2000	✓	✓	✗
Gronbaek et al., 2004 [#]	✓	✓	✗

KEY:  YES  NO

TABLE NOTES

Many of the meta-analyses included in this table have similar inclusion criteria, therefore they include overlapping sets of individual research studies.

- * Studies marked with a tick found that the risk for light-to-moderate drinkers was the same or lower than risk for non-drinkers.
- † The J-shape curve refers to a relationship between alcohol consumption and all-cause mortality risk where light-to-moderate drinkers have a lower risk, compared to both non-drinkers and heavy drinkers. The terms “J-shaped curve” and “J-curve” have also been used to describe results that resemble a U-shape (an indication of equally high risks for non-drinker and heavier-drinker categories and lower risk for a light- or moderate-drinker category) or an L-shape (an indication of higher risk for the non-drinker category and a relatively flat, lower risk across most or all alcohol consumption categories). Studies marked with a tick found a statistically significant lower risk for a light- to moderate-drinker category, compared to a non-drinker category, but not necessarily a statistically significant higher risk for heavier-drinker categories.
- ‡ Studies that separate former drinkers from lifetime abstainers or non-drinkers are better able to control for drinkers who may have reduced or quit drinking because of an illness, which may bias estimates of risk. Researchers may also test for this potential bias and present results from a combined non-drinker group, if combining the two does not affect the results.
- § This study stratified its analysis by age, study population, race, sex, or a combination of those factors. The results of at least one but not all subgroup analyses met the criteria for the same or lower risk than non-drinker (*), a J-shaped curve (†), or separating former drinkers from non-drinkers (‡) as described in each respective footnote.
- ¶ This study is an update of previously published meta-analyses (Stockwell et al., 2016 and Fillmore et al., 2006), which covers previously included studies, adds more recent studies, and refines coding manuals for data extractions.
- # This study draws from the same study population as the one listed above but uses a sub-sample of the study population.

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INCLUSION CRITERIA

This analysis included studies that met the following criteria:

- ▶ Study design: meta-analysis or pooled cohort
- ▶ Study population: must include a general population cohort, rather than a subpopulation with an existing condition or diagnosis (for example, diabetes or hypertension patients)
- ▶ Exposure: must include total alcohol consumption (rather than beverage specific results only) and provide multiple estimates for different levels of alcohol consumption (rather than a single binary variable or a single dose-response estimate)
- ▶ Outcome: all-cause mortality
- ▶ Analysis: must contain a comparison of drinkers with non-drinkers
- ▶ Publication date: 2000 to April 2023