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Recommended weekly physical activity level may offset some of alcohol's lethal harms

Clocking up the recommended weekly amount of physical activity may offset the heightened risks of death from all causes and from cancer that are associated with drinking alcohol, concludes the first study of its kind published online in the *British Journal of Sports Medicine*.

High alcohol intake has been linked to a heightened risk of death from all causes, heart disease/stroke, and several types of cancer, with some research suggesting that alcohol consumption and physical activity may share common biological disease pathways, but acting in opposite directions.

In an effort to find out whether physical activity moderates the association between alcohol intake and death from all causes, and from cancer and cardiovascular disease, the researchers drew on responses to nationally representative health surveys carried out in England and Scotland for the years 1994, 1998, 1999, 2003, 2004 and 2006.

These surveys included questions about the frequency and type of alcohol intake and physical activity levels among those aged 40+.

Total weekly alcohol intake was classified as: occasional (not within the previous week); within UK government guidelines (formerly a maximum of 14 units for women and 21 for men)\*; hazardous (up to 35 for women and 49 for men); and harmful (more than 35 and 49 units, respectively).

Some 14.6% (5307) of the respondents were lifelong abstainers and former drinkers, while 4845 (13.3%) exceeded the then recommended weekly maximum. Those who said they had had a drink within the preceding week averaged just over 6 units.

Physical activity, defined as walking for any purpose and formal exercise/sport undertaken in the preceding 4 weeks, was measured in Metabolic Equivalent of Task (MET) minutes. These express the amount of energy (calories) expended per minute of physical activity.

Weekly physical activity was categorised as inactive (less than 7.5 MET/hour); active at the lower end of the recommended scale (more than 7.5 MET/hour); and active at the upper end (more than 15 MET/hour).

Around one in four (27.5%) respondents said they did no physical activity at all, and just under 61% did not achieve 7.5 MET/hour a week, which corresponds to 150 minutes of moderate intensity physical activity.

Almost four out of 10 (39%) met the lower recommended weekly target and around one in four (23.3%) met the higher target. The average weekly tally was 8.8 MET/hour.

During the monitoring period--up to the end of 2009 in Scotland, and to the end of 2011 in England--there were 5735 deaths among the 36,370 respondents for whom complete data were available.

After taking account of potentially influential factors, a direct association emerged between drinking alcohol and death from all causes and from cancer.

Compared with lifelong abstinence, drinking in the past and drinking at hazardous levels were associated with a clearly defined heightened risk of death from all causes. And the higher the tally of weekly units, the greater was the risk of death from cancer, even if total alcohol intake fell within the weekly recommended maximum.

Occasional drinking, on the other hand, was associated with a slightly lower risk of death from all causes and from cardiovascular disease, but not from cancer, suggesting a 'J shaped curve,' say the researchers.

When physical activity was factored in, the risk of death varied according to the amount undertaken, with a heightened risk of death from cancer that was dose dependent--from an alcohol intake within the recommended limits up to harmful levels--for those who failed to meet the minimum recommended level of 7.5 MET/hour.

But this risk was lessened or cancelled out among those who were physically active, from the minimum recommended level upwards, while the association between alcohol and heightened risk of death from all causes was slightly lower up to hazardous drinking.

This is an observational study so no firm conclusions can be drawn about cause and effect, and the researchers acknowledge that they didn't measure drinking patterns or dietary factors, both of which could have affected the results.

Nevertheless, the findings indicate that physical activity has the potential to promote health and curb some of the associated harmful effects of drinking, even at the minimum recommended weekly level of 7.5 MET an hour, they say.

"Our results provide an additional argument for the role of [physical activity] as a means to promote the health of the population even in the presence of other less healthy behaviours," they write.

And they point out: "The public health relevance of our results is further emphasised by the recently updated alcohol consumption guidelines review by the UK Chief Medical Officer that found that cancer mortality risk starts from a relatively low level of alcohol consumption."

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