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Infographic: The ‘weekend warrior’ physical activity pattern and mortality

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Our study about the 'weekend warrior' physical activity pattern and mortality [1] was one of the most talked about studies of 2017 [2]. Here we offer an infographic summarising the results of our study. The English and Spanish versions of the infographic were created in collaboration with Yann Le Meur of YLMSportScience (www.ylmsportscience.com).

Those who choose to do all their exercise on one or two days of the week have been termed 'weekend warriors' [3]. Data from the Harvard Alumni Health Study suggest that all-cause mortality risk might be lower in weekend warriors than in sedentary men [3]. Seventy-three deaths occurred in the 580 weekend warriors in the Harvard Alumni Health Study and the authors acknowledged limited statistical power to investigate mortality risk [3]. Therefore, we investigated the associations of leisure-time physical activity patterns with mortality in a much larger analysis of 11 population-based studies [1].

Data were collected from more than 60,000 adult participants in the Health Survey for England and the Scottish Health Survey. Trained interviewers asked about physical activity and leisure-time physical activity patterns were defined in keeping with prevailing guidelines [4]: inactive was defined as not reporting any moderate- or vigorous-intensity physical activities; insufficiently active, reporting less than 150 minutes per week in moderate-intensity physical activity and less than 75 minutes per week in vigorous-intensity physical activity; weekend-warrior, reporting at least 150 minutes per week in moderate-intensity physical activity or at least 75 minutes per week in vigorous-intensity physical activity from one or two sessions; and regularly active, reporting at least 150 minutes per week in moderate-intensity physical activity or at least 75 minutes per week in vigorous-intensity physical activity from three or more sessions.

Cox proportional hazards models were adjusted for age, sex, smoking habit, longstanding illness, and occupation. There were 8,802 deaths during 561,159 person years of follow-up. Compared with the inactive (reference group), all-cause mortality risk was around 30%

lower, cardiovascular disease (CVD) mortality risk was around 40% lower, and cancer mortality risk was around 20% lower in the weekend warriors; And, mortality risks were lower to similar extents in the insufficiently active and the regularly active. We concluded that, "The weekend warrior and other physical activity patterns characterised by 1 or 2 sessions per week of moderate- or vigorous-intensity physical activity may be sufficient to reduce risks for all-cause, CVD, and cancer mortality regardless of adherence to prevailing physical activity guidelines" [1].

References

1. O'Donovan G, Lee IM, Hamer M, et al. Association of "Weekend Warrior" and Other Leisure Time Physical Activity Patterns With Risks for All-Cause, Cardiovascular Disease, and Cancer Mortality. *JAMA internal medicine* 2017;177(3):335-42. doi: 10.1001/jamainternmed.2016.8014
2. Altmetric. The Altmetric Top 100: What academic research caught the public imagination in 2017? Available from: <https://www.altmetric.com/top100/2017/>. Date accessed: January 2018.
3. Lee IM, Sesso HD, Oguma Y, et al. The "weekend warrior" and risk of mortality. *Am J Epidemiol* 2004;160(7):636-41.
4. World Health Organisation. Global recommendations on physical activity for health. Available from: http://www.who.int/dietphysicalactivity/factsheet_recommendations/en/. Date accessed: January 2018.

THE 'WEEKEND WARRIOR' PHYSICAL ACTIVITY PATTERN & MORTALITY RISK

Reference: by Gary O'Donovan et al. JAMA Internal Medicine 2017

Designed by eYLM SportScience

Inactive

No moderate-intensity leisure-time physical activities, like brisk walking, and no vigorous-intensity leisure-time physical activities, like running

Insufficiently active

Less than 150 min/wk in moderate-intensity leisure-time physical activity and less than 75 min/wk in vigorous-intensity physical activity

Regularly active

At least 150 min/wk in moderate-intensity leisure-time physical activities or at least 75 min/wk in vigorous-intensity leisure-time physical activities from 3 or more sessions

Weekend warrior

At least 150 min/wk in moderate-intensity leisure-time physical activities or at least 75 min/wk in vigorous-intensity leisure-time physical activities from 1 or 2 sessions

All-Cause Mortality

Cardiovascular Disease

Cancer Mortality

Physical activity patterns characterised by 1 or 2 sessions per week are associated with reduced all-cause mortality, cardiovascular disease mortality, and cancer mortality risks