

CORRESPONDENCE

RE: Night Shift Work and Breast Cancer Incidence: Three Prospective Studies and Meta-analysis of Published Studies

Eva S. Schernhammer

Affiliations of author: Channing Division of Network Medicine, Department of Medicine, Brigham and Women's Hospital and Harvard Medical School, Boston, MA; Department of Epidemiology, Harvard School of Public Health, Boston, MA; Department of Epidemiology, Center for Public Health, Medical University of Vienna, Austria.

Correspondence to: Eva Schernhammer, MD, DrPH, 181 Longwood Avenue, Boston, MA 02155 (e-mail: eva.schernhammer@channing.harvard.edu).

I read with interest the findings of a recent mega-study and meta-analysis on night shift work and breast cancer risk published in the Journal. Travis et al. (1) write that—with reference to a 2007 International Agency for Research on Cancer (IARC) classification of night shift work as a probable carcinogen (2)—although further follow-up is desirable, “The prospective evidence now available shows that classification of night shift work as a probable (human) carcinogen is no longer justified.” I disagree with the authors’ assessment.

Travis et al. report that among their 795 850 mostly retired elderly women, whom they followed for incident breast cancer for two to three years in late life, there was no increase in breast cancer risk after night work. They classify these women as night workers with as little as a single night shift at some time in their entire life.

In contrast to evaluating the impact of long-term rotating night shift work on breast cancer risk in a prospective cohort followed from younger age (3), Travis et al. examine whether even minimal exposure to night shift work during the active years of a woman’s life could potentially increase her risk of breast cancer during two arbitrary years in her older, likely post-retirement years of life (if she is still alive by then). Not surprisingly, they find that the probable carcinogen night shift work has no effect on incident breast cancer risk in their study.

Their meta-analysis of four prospective studies does not include our own most recent study, which comprises 193 075 women who developed 9541 incident invasive breast cancers over 24 years of follow-up (3). Of these, 5841 breast cancers occurred among night shift workers in our study (compared with 768 breast cancer cases in all three cohorts presented by Travis et al. and the 2233 cases total in their meta-analysis, not counting our own) (4,5). Just as in the majority of prior studies

published on this topic, we again observe a statistically significantly increased risk of breast cancer among women who worked longer durations of night shift work in this recent study (3). That the increased risk appears to wane over time when women retire from night shift work provides a critical argument for the importance of timing (early career) and duration (at least 15 years) of night shift work in relation to breast cancer risk. Moreover, careful delineation of the association of night shift work with breast cancer incidence vs disease prognosis (in diagnosed women) is needed.

Travis’ null findings do not amount at all to a wholesale rejection of the “melatonin hypothesis” (6) as the authors seem to suggest. In other words, rejecting the possibility of night shift work as a potential carcinogen on the basis of a reported null finding between minimal exposure to night shift work and breast cancer risk in a very narrow time window during older age in one publication (1) seems like bad science, and tantamount to “throwing the baby out with the bath water.” Instead, the research community and night workers at large will be served much better if we follow up on first steps toward precision prevention and delineating periods and phenotypes of, or at, increased risk (3).

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