

Low 25-hydroxyvitamin D concentrations may explain the link between breast cancer risk and shift work

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To the Editor,

The recent meta-analysis by He et al. (2014) found shift work significantly correlated with risk of breast cancer (BrCA). The mechanism proposed to explain this finding was disruption of the circadian rhythm. However, just how this mechanism might work was not discussed.

Overlooked in this paper was any discussion of an alternate hypothesis to explain the findings: lower 25-hydroxyvitamin D [25(OH)D] concentrations due to sleeping during daytime. This hypothesis was proposed in a letter to the editor (Grant 2013) to explain the finding regarding cancer risk related to night shift work by men in Canada (Parent et al. 2012). The evidence for this hypothesis includes the following: Sunlight is the most important source of vitamin D for most people (Hyppönen and Power 2007); outdoor occupation is a significant risk reduction factor for many types of cancer including female breast cancer (Grant 2012); night work is a significant risk reduction factor for skin cancer including melanoma for women (Schernhammer et al. 2011); and solar ultraviolet irradiance is the most important risk factor for skin cancer and melanoma (Wu et al. 2014).

There are many health benefits of UVB and vitamin D (Hossein-Nezhad and Holick 2013), and the optimal 25(OH)D concentration seems to be 100–130 nmol/L (Heaney 2014). Thus, those who work night shifts should

seek to increase 25(OH)D concentrations by solar UVB near solar noon or vitamin D supplements.

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