

Effect of exercise on sleep quality and insomnia in middle-aged women: A systematic review and meta-analysis of randomized controlled trials(Review)

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Abstract [View references \(47\)](#)

Objective We assessed the effects of programmed exercise (PE) on sleep quality and insomnia in middle-aged women (MAW). **Methods** Searches were conducted in five databases from inception through December 15, 2016 for randomized controlled trials (RCTs) evaluating the effects of PE versus a non-exercising control condition on sleep quality, sleep disturbance and/or insomnia in MAW.

Interventions had to last at least 8 weeks. Sleep quality was assessed with the Pittsburgh Sleep Quality Index (PSQI) and insomnia with the Insomnia Severity Index (ISI). Random effects models were used for meta-analyses. The effects on outcomes were expressed as mean differences (MDs) and their 95% confidence intervals (CI). **Results** Five publications reported data from four RCTs on PE effects during 12–16 weeks on sleep quality (n = 4 studies reporting PSQI results) and/or insomnia (n = 3 studies reporting ISI results), including 660 MAW. Low-moderate levels of exercise significantly lowered the PSQI score (MD = -1.34; 95% CI -2.67, 0.00; p = 0.05) compared with controls. In a subgroup analysis, moderate PE (aerobic exercise) had a positive effect on sleep quality (PSQI score MD = -1.85; 95% CI -3.62, -0.07; p = 0.04), while low levels of physical activity (yoga) did not have a significant effect (MD -0.46, 95% CI -1.79, 0.88, p = 0.50). In three studies (two studies of yoga, one study of aerobic exercise), there was a non-significant reduction in the severity of insomnia measured with the ISI score (MD -1.44, 95% CI -3.28, 0.44, p = 0.13) compared with controls. Heterogeneity of

effects among studies was moderate to high. Conclusion In middle-aged women, programmed exercise improved sleep quality but had no significant effect on the severity of insomnia. © 2017 Elsevier B.V.

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- Insomnia
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- Middle-aged women
- Pittsburgh sleep quality index
- Yoga

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