

## Multicenter, randomized controlled trial of yoga for sleep quality among cancer survivors.

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### Abstract

**PURPOSE:** Thirty percent to 90% of cancer survivors report impaired sleep quality post-treatment, which can be severe enough to increase morbidity and mortality. Lifestyle interventions, such as exercise, are recommended in conjunction with drugs and cognitive behavioral therapy for the treatment of impaired sleep. Preliminary evidence indicates that yoga—a mind-body practice and form of exercise—may improve sleep among cancer survivors. The primary aim of this randomized, controlled clinical trial was to determine the efficacy of a standardized yoga intervention compared with standard care for improving global sleep quality (primary outcome) among post-treatment cancer survivors.

**PATIENTS AND METHODS:** In all, 410 survivors suffering from moderate or greater sleep disruption between 2 and 24 months after surgery, chemotherapy, and/or radiation therapy were randomly assigned to standard care or standard care plus the 4-week yoga intervention. The yoga intervention used the Yoga for Cancer Survivors (YOCAS) program consisting of pranayama (breathing exercises), 16 Gentle Hatha and Restorative yoga asanas (postures), and meditation. Participants attended two 75-minute sessions per week. Sleep quality was assessed by using the Pittsburgh Sleep Quality Index and actigraphy pre- and postintervention.

**RESULTS:** In all, 410 survivors were accrued (96% female; mean age, 54 years; 75% had breast cancer). Yoga participants demonstrated greater improvements in global sleep quality and, secondarily, subjective sleep quality, daytime dysfunction, wake after sleep onset, sleep efficiency, and medication use at postintervention (all  $P \leq .05$ ) compared with standard care participants.

**CONCLUSION:** Yoga, specifically the YOCAS program, is a useful treatment for improving sleep quality and reducing sleep medication use among cancer survivors.

**TRIAL REGISTRATION:** ClinicalTrials.gov [NCT00397930](https://clinicaltrials.gov/ct2/show/study/NCT00397930).

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