Mindfulness-Based Stress Reduction for Posttraumatic Stress Disorder, Coffee Consumption and Mortality, Phytoestrogens for Menopause, Light Therapy for Non-Seasonal Depression, Electroacupuncture for Labor Pain

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MINDFULNESS-BASED STRESS REDUCTION MAY IMPROVE SYMPTOMS OF POSTTRAUMATIC STRESS DISORDER AMONG VETERANS COMPARED TO AN ACTIVE CONTROL

Level 2 (mid-level) evidence

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Posttraumatic stress disorder (PTSD) affects 23% of U.S. veterans returning from deployment in Afghanistan and Iraq.[1] Left untreated PTSD is associated with high rates of comorbidity, disability, and poor quality of life.[2] Although existing first line treatments such as prolonged exposure and cognitive processing therapy are efficacious, 30–50% of veterans inadequately respond to these techniques and completion rates are low.[3,4] Mindfulness-based stress reduction (MBSR) is a widely used therapeutic strategy that trains patients to attend to the present moment and embrace it non-judgmentally. Some evidence supports its effectiveness for symptoms of anxiety and depression,[5] and learning to accept painful thoughts and feelings, rather than completely avoiding them, targets a key contributing factor in the development and maintenance of PTSD.[6]

In the present trial, 116 veterans (mean age 58.5 years) with PTSD were randomized to receive weekly sessions of either grouped-based MBSR or present-centered group therapy (PCT), which served as an active control.[7] MBSR consisted of eight sessions (2.5 h each) plus one 6.5-h silent retreat. Sessions included didactic training and practice in three meditation techniques: body scan, seated contemplation, and mindfulness yoga. PCT, which consisted of nine sessions (1.5 h each), is a credible intervention shown to be beneficial for PTSD.[8,9] Veterans currently suffering from substance dependence, psychotic disorder, prominent suicidal or homicidal ideation, or cognitive impairment that would interfere with treatment were excluded.

In an intention-to-treat analysis, the mean difference in self-reported symptom severity score was 4.95 (95% CI: 1.92–7.99) and 6.44 (3.34–9.53) at nine weeks and two months follow-up, respectively, favoring MBSR. The minimal clinically important difference for this scale is reportedly 10 (scale range: 17–85 with higher scores indicating more severe symptoms).[10] The proportion of MBSR patients exhibiting a clinically important improvement in symptoms was 36.5% and 48.9% at nine weeks and two months, respectively. Between-group differences (vs. PCT) were 13.7% (95% CI: −3.5 to 31.0) and 20.9% [2.2–39.5; number needed to treat (NNT) = 5]. Changes in interview-rated PTSD severity or depressive symptoms were not significant at either time point.

MBSR showed a modest reduction in self-reported PTSD symptoms compared to present-centered therapy, an active control that served to reduce the risk of performance bias. Although dropout rates were substantially higher in the MBSR group (22.4% vs. 6.9%), they were lower than those typically found in trials investigating prolonged exposure and cognitive processing therapy.[3,4,9] Limitations of this trial include short duration and differences in baseline PTSD severity (MBSR > PCT). The fact that 75% of the participants were Vietnam-era veterans and 97% were white may restrict the generalizability of these results.

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COFFEE CONSUMPTION IS ASSOCIATED WITH LOWER RISK OF MORTALITY

Level 2 (mid-level) evidence

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Coffee is one of the most widely consumed herbal preparations in the world. Despite its insalubrious reputation, coffee consumption has been inversely associated with a range of illnesses including type 2 diabetes mellitus,[11] liver cancer,[12] endometrial cancer,[13] lethal prostate cancer,[14] basal cell carcinoma,[15] Parkinson's disease,[16] and cardiovascular disease (CVD).[17] Furthermore, no association was found between coffee consumption and higher risk of mortality in three prior meta-analyses, though there was significant heterogeneity in effect estimates.[18–20] Left unanswered by these studies is the nature of the dose–response relationship between coffee consumption and all-cause and disease-specific mortality, and the influence of caffeine on these effects.

In the present study, researchers pooled and analyzed data from three ongoing, prospective, cohort studies: the Nurses' Health Study (NHS), NHS II, and the Health Professionals Follow-up Study (HPFS).[21] These studies began in 1976, 1989, and 1986, respectively, and cohort ages range from 25 to 75 at baseline. Coffee consumption (caffeinated and decaffeinated) was assessed using a semi-quantitative food frequency questionnaire. During 4,690,072 person-years follow-up, 31,956 participants died. There was a strong correlation between coffee consumption and smoking status. Heavy coffee drinkers were also more likely to consume alcohol and red meat, and less likely to consume sugar-sweetened beverages and fruit.

In a multivariate analysis (adjusting for age, body mass index, physical activity, overall dietary pattern, total energy intake, smoking status, sugar-sweetened beverage consumption, alcohol consumption, hypertension, hypercholesterolemia, diabetes mellitus, menopausal status, and postmenopausal hormone use), there emerged a non-linear association between total coffee consumption and all-cause mortality. Relative to no consumption of coffee, pooled hazard ratios for death were 0.95 (95% CI: 0.91–0.99) for ≤ 1 cup per day, 0.91 (0.88–0.95) for 1.1–3.0 cups per day, 0.93 (0.89–0.97) for 3.1–5.0 cups per day, and 1.02 (0.96–1.07) for >5.0 cups per day. Similar results were found when caffeinated and decaffeinated coffees were analyzed separately. A one-cup-per-day increase in coffee consumption was inversely associated with risk of mortality from coronary heart disease (CHD), stroke, other neurologic disease, and type 2 diabetes. It was positively associated with risk of mortality from lung cancer and respiratory diseases. When the analysis was restricted to never smokers, however, mortality risk attributable to lung cancer and respiratory disease disappeared, and the inverse association remained for CHD, neurologic disorder, and suicide.

Based on this analysis of an enormous data set, there exists a non-linear relationship between coffee consumption and risk of all-cause mortality, with moderate consumption associated with a small but statistically significant lower risk of death and higher consumption associated with no change in risk. An observed increase in mortality from lung cancer and respiratory disease is most likely due the confounding effects of past smoking. Coffee consumption was not associated with cancer mortality. Since the presence or absence of caffeine appears not to influence these effects, other biological mechanisms must be invoked to explain these observations. Whatever the reason, it appears that coffee can be innocently enjoyed as a healthy lifestyle choice after all.

PHYTOESTROGENS MAY NOT BE BENEFICIAL FOR VASOMOTOR SYMPTOMS DURING MENOPAUSE

Level 2 (mid-level) evidence

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The reduction in estrogen levels characterizing menopause is often associated with uncomfortable symptoms that can seriously diminish quality of life. Among these, hot flashes are the most bothersome, occurring in as many as 74% of menopausal women.[22,23] Hormone replacement therapy (HRT) is effective for hot flashes, but its use has fallen off sharply in the wake of the Women's Health Initiative trial, which highlighted its risks.[24] Phytoestrogens are plant constituents chemically similar to estradiol and possessing estrogen-like properties.[25] The two major classes of phytoestrogens are isoflavones (found in soybeans and red clover) and lignans (found in flaxseeds, legumes, fruits, and vegetables).[26] However, despite their biological plausibility clinical trials investigating the benefits of phytoestrogens for menopausal symptoms have been largely unsupportive.[27–29]

The purpose of the present study was to pool data from high quality, randomized controlled trials (RCT) and quantitatively evaluate the effectiveness and risks of phytoestrogens for alleviating vasomotor symptoms in menopausal women.[30] Researchers identified 15 RCTs, most of which had some risk of bias (despite their criterion to choose only high quality trials).[29,30] Mean age of subjects was 48–60. Trial sizes and treatment durations were from 30 to 252 participants and 3 to 12 months, respectively. Daily dosages of phytoestrogens consisted of isoflavones 25–139 mg, combination isoflavones/lignans 60/100 mg, s-equol 5 mg, and red clover extract 40 mg. Compared to placebo, there was no significant difference in Kupperman Index (KI) for isoflavone (composite score for the presence and severity of 11 menopausal symptoms; range: 0–51) in analysis of seven trials with 647 patients (KI = 6.44; 95% CI: −1.45 to 14.34). There was, however, a significant reduction in daily frequency of hot flashes in analysis of 10 trials with 1167 patients (pooled mean difference = 0.89; 95% CI: 0.26–1.52). Frequency of adverse effects was similar in both groups.

The validity of these results may have been compromised by the risk of bias in most trials, along with variability in dosing, treatment duration and age of subjects. The lack of effect on KI scores and the small (though statistically significant) effect on daily hot flash frequency are consistent with existing evidence of phytoestrogen's lackluster performance against vasomotor symptoms during menopause. Despite their relative safety, there is little evidence that phytoestrogens can serve as an effective substitute for HRT for this indication.