Yoga is one of the most popular complementary therapies used by breast cancer patients to manage some of the treatment-related symptoms, especially fatigue. This systematic review aimed to review the evidence from Randomized Controlled Trials (RCTs) and to conduct a meta-analysis of the effects of yoga on fatigue (primary outcome), depression (secondary outcome) in breast cancer patients undergoing active treatments, and to assess the safety of yoga during treatment. MEDLINE, CINAHL, Psych Info, PubMed, EMBASE and the Cochrane Library were searched throughout February 2015. Six 6 RCTs with a total of 562 participants were included. Results of the meta-analysis showed no statistically significant effect of yoga on both fatigue (SMD=-0.33; 95% CI=[-0.90, 0.24]; p=0.25) and depression (SMD=0.17; 95% CI=[-1.10, 1.45]; p=0.79) during active treatment. However, subgroup analysis revealed long-term effects (2 or more months after treatment) of yoga on fatigue (SMD=-2.43; 95% CI=[-4.41, -0.46]; p=0.02). The results of the narrative review revealed a feasible effect of yoga on cancer-related fatigue post radiation therapy, but no effect of yoga was observed on fatigue level in breast cancer patients who are undergoing surgical management. No adverse effect of yoga was reported during treatment. This systematic review found evidence for the long-term effect of yoga on fatigue after active breast cancer treatments. Yoga is considered safe during active treatment and can be recommended as an intervention during active breast cancer treatment to reduce long-term (after-treatment) fatigue. However, the results of this review should be interpreted carefully.