

## THE EFFECTS OF YOGA ON ADULTS WITH TYPE II DIABETES: A SYSTEMATIC REVIEW AND META-ANALYSIS

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**Objective:** The purpose of this meta-analysis was to examine the effects of yoga for glycemic control among adults with type II diabetes (T2DM).

**Methods:** Comprehensive electronic databases searches located 2,559 unique studies with relevant key terms. Studies were included if they a) evaluated a yoga intervention to promote T2DM management, b) used an objective measure to assess glycemic control at post-intervention, and c) had follow-up length or post-test of at least 8 weeks from baseline. Studies were excluded if yoga was not the primary intervention focus (e.g., if yoga was part of a mindfulness-based intervention). Independent raters coded participant, design and methodological characteristics and intervention content. Weighted mean effect sizes and 95% confidence intervals (CI) were calculated.

**Results:** Total 23 studies with 2,473 participants (*M* age = 53 years; 43% women) met eligibility criteria. Most studies (18) were conducted in India; 2 were conducted in England, 1 in Cuba, 1 in Indonesia, and 1 in Iran. Compared with controls, yoga participants were successful in improving their HbA1c ( $d+ = 0.37$ , 95% CI = 0.18, 0.55;  $k = 14$ ), fasting blood glucose ( $d+ = 0.57$ , 95% CI = 0.38, 0.76;  $k = 19$ ), postprandial blood glucose ( $d+ = 0.29$ , 95% CI = 0.17, 0.41;  $k = 11$ ). Yoga was also associated with significant improvements in lipid profile, blood pressure, body mass index and waist/hip ratio. Overall, studies satisfied an average of 41% of the methodological quality (MQ) criteria; however, MQ score was not associated with any outcome ( $ps >.05$ ).

**Conclusion:** Yoga improved glycemic outcomes and other risk factors for complications in adults with T2DM relative to a control condition. Additional studies with longer follow-ups are needed to determine the long-term efficacy of yoga for adults with T2DM.

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