**Effectiveness of Primary Care-Initiated Physical Activity Interventions in Adults with Type 2 Diabetes Mellitus: A Systematic Review**

**Background & Aim**

To evaluate the effectiveness of physical activity (PA) interventions conducted in, or initiated by, primary care practitioners on physical function and metabolic health outcomes in adults with type 2 diabetes mellitus (T2DM).

**Methods**

A systematic search of the literature was performed across Medline, EMBASE, PsycINFO, CINAHL, Web of Science, and EBSCO databases. Eligible studies included PA interventions delivered in, or referred from, primary care settings in adults with T2DM. The review protocol was registered with PROSPERO (CRD42024550358). Two reviewers independently assessed risk of bias using the Cochrane Risk of Bias tool for randomised controlled trials (n=14) and ROBINS-I for non-randomised studies (n=2). Data were extracted on intervention characteristics, delivery mode, duration, and outcomes related to PA, HbA1c, and other physical and metabolic indicators. Findings from the review were reported using a narrative synthesis including descriptive statistics.

**Results**

Sixteen studies involving a total of 2,724 participants were included, with a 78.8% overall completion rate. Intervention types included individual or group motivational counselling, digital apps, devices, a residential program, or multi-strategy interventions, delivered by primary care providers, healthcare professionals, or community organisations. Program duration ranged from 6 weeks to 2 years. Nine studies reported statistically significant improvements in PA levels, while three showed significant reductions in HbA1c. Other clinical markers such as BMI and lipid profiles showed mixed or limited effects. Participants frequently reported increased motivation and improved well-being, though sustained clinical improvements were generally lacking.

**Discussion/Conclusion**

Physical activity interventions initiated in primary care settings show promise in improving PA levels and subjective well-being in adults with T2DM. However, evidence for sustained clinical benefits, such as HbA1c reduction, remains limited. Future interventions may benefit from extended follow-up periods, consistent outcome reporting, and integration with broader diabetes management strategies.