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Physical activity during pregnancy is associated with a lower incidence of gestational diabetes mellitus: A prospective cohort study in Vietnam

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Objective: To assess the associations between physical activity (PA) during pregnancy and the risk of gestational diabetes mellitus (GDM) accounting for sitting time.

Methods: A prospective cohort study was conducted in three centres of Vietnam namely Ha Noi, Hai Phong, and Ho Chi Minh City. Women were recruited before 20 weeks of gestation from six hospitals. Baseline measures including PA and GDM were performed at 24-28 weeks of gestation. A modified version of Pregnancy Physical Activity Questionnaire was used to assess habitual PA during the past 3 months before the baseline interview. GDM was also diagnosed during this period using the 2013 World Health Organization criteria.

Results: 1987 out of 2030 pregnant women were included in the final analysis, of which 432 had GDM (21.7%). Women in the upper tertile of total PA during pregnancy had a

decreased risk of GDM (odds ratio (OR): 0.70, 95% confidence interval (CI): 0.53-0.94, P_{trend} : 0.017) as compared to those in the lowest tertile. Similarly, women with the highest levels of moderate-intensive activity and household/caregiving activity during pregnancy were associated with lower GDM risk (OR: 0.66, 95% CI: 0.50-0.86, P_{trend} : 0.002 and OR: 0.72, 95% CI: 0.55-0.95, P_{trend} : 0.020, respectively). These effects were independent of sitting time. There were no significant associations between sitting time, light-intensity activity, vigorous-intensity activity, occupational, sports/exercise, transportation or meeting exercise guidelines and GDM.

Conclusion: High levels of total PA, moderate-intensity, and household/caregiving activity during pregnancy were associated with a significantly lower risk of GDM without interactions with sitting time.

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