

Commentary

Do multiparous women need to work or exercise extra hard to control gestational diabetes?

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In the current issue of the *Journal of Sport and Health Science*, Wang et al.¹ describe their prospective study, where they analyzed whether or not multiple pregnancies would influence glycemia and the glycemic response to physical exercise in gestational diabetes mellitus (GDM).² Multiparous women are known to be at a higher risk for GDM than primiparas. GDM carries an increased risk for adverse perinatal outcomes, not only for the mothers but also for the newborn babies. Due to a contemporary environment that is conducive to a sedentary lifestyle and obesity, the incidence of GDM among pregnant women is increasing. This is a global problem, but it is a particularly important topic in China since its switch to the 3-child policy.

Lifestyle changes are the cornerstone for prevention of GDM, and exercise programs have been proven effective among pregnant Chinese women in a randomized controlled study.³ However, information on optimal personalized exercise intensity is scarce. Current American Diabetes Association guidelines recommend planned physical activity of 30 min/day for all women with GDM.^{4,5} The guidelines from the Society of Obstetricians and Gynecologists of Canada, the Canadian Society for Exercise Physiology,⁶ and the American College of Obstetricians and Gynecologists' Committee's⁷ also give detailed guidance on physical activity for pregnant and postpartum women. However, it is not known whether these recommendations apply equally to both primiparous and multiparous women with GDM.

The study by Wang et al.¹ showed that multiparous women were slightly more likely than primiparous women to have abnormal plasma glucose levels (40.0% vs. 37.5%). It also found a negative association between physical activity time and percentage of abnormal plasma glucose across primiparous and

multiparous women. The beneficial effects of acute and chronic exercise during pregnancy on GDM have been well documented.⁸ Findings by Wang et al.¹ suggest that while at least 60 min of moderate intensity physical activity per day is needed for primiparous women with GDM, multiparous women should exercise more, with at least 90 min of moderate intensity physical activity per day needed to achieve a comparable glucose-lowering effect. Physical exercise thus appears to operate more efficiently in primiparous than multiparous women.

The question remains as to why 60 min of physical activity is enough for primiparous women, while multiparous women need to work out 90 min per day to achieve glycemic control. Naturally, confounding factors may play a role. Potential sources of bias include differences in age, degree of obesity, and socioeconomic status between primiparous and multiparous women as well as the reliance on self-reported physical activity and intensity data. A drawback of the study by Wang et al.¹ was that diets were not monitored. However, the results leave open the possibility that previous pregnancy may impair insulin sensitivity and β -cell capacity to secrete insulin in subsequent pregnancies. Further research is needed to determine how previous pregnancy affects the lean body mass, insulin sensitivity, and dose–response to a standardized volume of physical activity.

While the conclusions drawn by Wang et al.¹ need further confirmation, recommending more exercise during pregnancy does not pose hazards or disadvantages.^{6,7,9} Focusing on physical activity in maternal care seems important because a great proportion (39%) of the study participants reported physical activity times of less than 60 min per day.

The findings by Wang et al.¹ imply that it might be important to personalize exercise recommendations, especially for multiparous women with GDM. It is crucial that exercise for pregnant women should not be a burden. Attention should be paid to prescribing innovative and suitable physical activities for pregnant women. The study included cleaning and riding a bike as forms

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of exercise. While the former may not be considered exercise by some, it does produce a major and versatile whole-body effort.

Authors' contributions

Both authors contributed to the planning and writing of the commentary. Both authors have read and approved the final version of the manuscript, and agree with the order of presentation of the authors.

Competing interests

Both authors declare that they have no competing interests.

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