

COMMENTS AND RESPONSES

Comment on: van Dijk et al. Exercise Therapy in Type 2 Diabetes: Is Daily Exercise Required to Optimize Glycemic Control? Diabetes Care 2012;35:948-954

We read with great interest the recent article by van Dijk et al. (1) supporting the importance of exercise in the treatment of diabetes. The authors deserve credit for conducting a difficult study on a topic that is of interest to researchers and clinicians alike. We wish to comment on the study design as well as important findings of the study that were overlooked in the manuscript.

Authors compared the glucose control between daily exercise (DE) (30 min) to exercise done every other day (EEOD) (60 min). We compliment the authors for controlling the total volume of exercise. However, because there were only two 30-min sessions compared with a single 60-min session, the authors cannot conclude that they were comparing frequencies of DE to EEOD; they compared a single session of exercise to

equivalent volume of exercise distributed over 2 days. If the variable of interest was comparing DE to EEOD, the exercise sessions should have been distributed over 7–10 days.

The primary variables identified by the authors, i.e., the average glucose concentrations presented in Fig. 3 of ref. 1, were used to support the efficacy of the distribution of exercise as DE or EEOD for overall glucose control. We found the data reported in Fig. 2 of ref. 1 to be more intriguing given the role of postprandial hyperglycemia in the etiology of atherosclerotic cardiovascular disease (2), which is responsible for 80% of the premature deaths in diabetes (3). Comparing the postprandial glucose concentrations (PGCs) from DE (30-min sessions between day 1 and day 2), the PGCs were significantly lower than the control session on each day, but were not significantly different from each other (~11 mmol/L and ~10 mmol/L). More dramatic findings were in the PGCs from EEOD (60-min session; nondaily). On day 1, the PGC was significantly less (~8 mmol/L and ~11 mmol/L) than in the 30-min session, implying a dose response based on duration of exercise. On day 2, the PGC from the previous day's 60-min session was significantly higher (~11 mmol/L and ~10 mmol/L) than the 30-min session. Possible conclusions from these data indicate that 1) DE may be better than EEOD for reducing postprandial glucose, or 2) a longer duration of exercise may be more beneficial. In all, based on these findings, more research is warranted on the dose response as well as the duration of benefit for the postprandial period.

Keeping in mind the importance of postprandial glycemic control, further studies should use longer and rigorous designs to quantify the effect of exercise on a sensitive variable.

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DOI: 10.2337/dc12-0879

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Acknowledgments—No potential conflicts of interest relevant to this article were reported.

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