Weight Loss and Physical Activity for Cardiovascular Protection Among Patients With Diabetes

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This post hoc analysis of a subset of Look AHEAD trial data by Zhuang and colleagues reveals an important message for patients with diabetes: those who lose weight and maintain a reduced weight while also maintaining higher levels of physical activity decrease their risk of developing cardiovascular disease in subsequent years. That conclusion may not be surprising to most, as a wealth of epidemiological data already confirms the cardiometabolic benefits of sustained weight loss and a physically active lifestyle. However, evidence from large randomized clinical lifestyle intervention trials has been less convincing. Those familiar with the Look AHEAD trial will remember that fewer cardiovascular events than expected occurred in the education control group, resulting in no difference in cardiovascular events between the control group and the intensive lifestyle group over 9.5 years of follow-up. Indeed, post hoc analyses of the effects of fitness or weight change within the original randomized groups in the first year did not independently estimate long-term cardiovascular disease incidence.

As much as we would like to believe that everyone responds similarly to lifestyle intervention, evidence from numerous trials indicates that individual responses to diet and exercise vary widely. There are those who can lose and maintain lost weight simply by becoming more active. Others may become physically active, but then compensate by unknowingly changing dietary intake and even gain weight during an intervention. In a post hoc analysis not unlike the current study, Foright et al took a second look at participant adherence to the exercise groups of leading randomized clinical trials that originally failed to demonstrate a benefit of exercise on long-term weight loss maintenance. This secondary analysis found that participants who actually did their assigned exercise in these trials successfully maintained lost weight over time. Similarly, participants in the National Weight Control Registry commonly report high levels of physical activity as fundamental to their successful long-term weight loss maintenance. One subgroup in this registry that maintained lost weight with much less physical activity also reported more health problems.

One notable strength of this study by Zhuang et al is that accelerometry was used to objectively measure physical activity. Participants were selected into groups, not by randomized assignment, but by the amount of physical activity they actually did. The high physical activity group (>175 min/wk of moderate-to-vigorous physical activity at baseline and at 1-year and 4-year follow-ups) was contrasted with participants who had low physical activity status. A similar threshold was drawn for weight loss at 7% below baseline, identifying participants who actually achieved the weight maintenance goals of this intervention, regardless of randomized assignment. Interestingly, neither weight loss maintenance alone nor high levels of physical activity alone over the 4-year period were sufficient stimulus to protect patients with diabetes from cardiovascular disease morbidity and mortality. It was the combination that mattered!

Although the results of this kind of analysis may not carry the clout of randomized clinical trial evidence due to selection bias and an inability to establish clear causal relationships between time-varying and interrelated independent and dependent variables, the lifestyle message is compelling. It emphasizes the synergistic role of weight loss maintenance and a physically active lifestyle: success in both is mandatory to achieve the desired cardiovascular benefit.
REFERENCES


