RESPONSE TO COMMENT ON AMERICAN DIABETES ASSOCIATION

Standards of Medical Care in Diabetes—2017. Diabetes Care 2017;40(Suppl. 1):S1–S135

William H. Herman,[1] Matthew Petersen,[2] and Rita R. Kalyani[3]

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We thank Sonne and Hemmingsen (1) for their thoughtful critique of the American Diabetes Association's *Standards of Medical Care in Diabetes—2017* (Standards of Care) (2). As they point out, the Standards of Care now highlight a prediabetes screening tool that was developed in 1995 (3), revised in 2012 (4), and most recently validated in 2016 (5). The Standards of Care also recommend regular monitoring for those with prediabetes, intensive lifestyle intervention for diabetes prevention, and consideration of metformin therapy for selected individuals with prediabetes (6).

We acknowledge that the use of three different diagnostic tests to define prediabetes identifies heterogeneous groups. Although values above the diagnostic threshold for each of the tests have been associated with increased risk of progression to type 2 diabetes (T2D) (7,8), the thresholds for the individual tests do not align directly with the eligibility criteria for the major clinical trials of diabetes prevention, almost all of which required that participants have impaired glucose tolerance (9). Different diagnostic tests for prediabetes identify different individuals (10), and for each diagnostic test the risk of progressing to T2D is lower at the lower end of the glycemic range.

Clearly, the recommendations to implement intensive lifestyle intervention or metformin for diabetes prevention apply most directly to the subset of individuals with prediabetes who meet the eligibility criteria for the clinical trials. These include adults ≥25 years of age who are overweight or obese and have fasting hyperglycemia and impaired glucose tolerance (9). In the Diabetes Prevention Program (DPP), the lifestyle intervention was demonstrated to be more effective than metformin (9). The Standards of Care thus recommend lifestyle intervention for most people with prediabetes and recommend that metformin therapy be considered for those most likely to benefit from it—that is, those 25–60 years of age with BMI ≥35 kg/m^2 and women with histories of gestational diabetes mellitus (11). It may also be reasonable to consider metformin therapy for individuals who cannot implement or adhere to lifestyle intervention or who have progression of hyperglycemia despite lifestyle intervention.

We support a comprehensive approach to health promotion and disease prevention. In addition to dietary changes, weight loss, and physical activity, careful attention should be paid to psychosocial stressors, blood pressure control, lipid management, smoking prevention or cessation, appropriate use of antiplatelet therapy, and health-related quality of life. We acknowledge that labeling people with prediabetes might adversely affect quality of life, but we are not aware of data to suggest that this is the case. In the Anglo-Danish-Dutch Study of Intensive Treatment in People With Screen Detected Diabetes in Primary Care (ADDITION) trial, the potential disutility of screening for and diagnosing T2D was carefully assessed. Although participants with newly diagnosed diabetes had poorer self-reported health at 3–6 months, the effect was no longer evident at 12–15 months (12).

Finally, in light of the well-documented global epidemic of T2D, we disagree that interventions should be implemented only when there is persuasive evidence of long-term benefit. Clinical and public health action must be based on the best available evidence. Current evidence demonstrates the efficacy of lifestyle and metformin interventions to delay or prevent the development of T2D (9). There will never be a randomized controlled clinical trial of sufficient duration to demonstrate reductions in "hard outcomes." Simulation modeling has shown that interventions that delay the onset of T2D will reduce its cumulative incidence (13). In addition, 23-year observational follow-up from the Da Qing Diabetes Prevention Study has shown that lifestyle intervention is associated with a 45% reduction in diabetes incidence, a 41% reduction in cardiovascular

[1]*University of Michigan, Ann Arbor, MI*
[2]*American Diabetes Association, Arlington, VA*
[3]*Johns Hopkins University, Baltimore, MD*

Corresponding author: William H. Herman, wherman@umich.edu.

mortality, and a 29% reduction in all-cause mortality (14).

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