Preventing and Treating Diabetes

Contributions of Behavioral and Social Sciences Research (BSSR)

The Public Health Problem

1 in 10 34.2 million Americans (1 in 10) have diabetes, 20% of whom do not know they have it.[1]

88M 88 million American adults (33%) have prediabetes, 80% of whom do not know they have it.[2]

60% Adults with diabetes have a 60% higher risk of early death than adults without diabetes.[3]

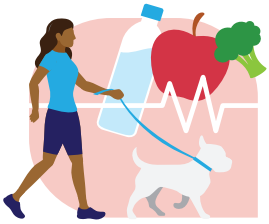
People with diabetes are at increased risk for serious comorbidities, including the following:

- Heart disease
- Stroke
- Kidney failure
- Depression and anxiety
- Diabetic retinopathy/blindness
- Amputation of toes, feet, or legs

BSSR Health Impacts

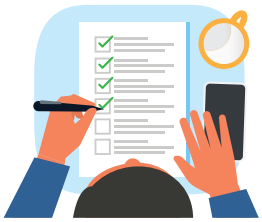
Diabetes Prevention Program

Evidence shows that lifestyle-focused BSSR initiatives such as the Diabetes Prevention Program (DPP)—which apply behavioral interventions, including increased physical activity, healthier eating, and counseling—can mitigate one's risk of developing Type 2 diabetes and can improve outcomes for those who have already been diagnosed with it. DPP is currently the gold standard for diabetes management.[4, 5]



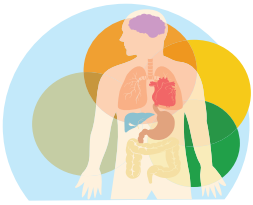
Diabetes Self-Management Education and Support

Diabetes self-management education and support (DSMES) is an evidence-based approach for helping people with diabetes to identify and implement effective self-management strategies that enable them to cope with diabetes on an ongoing basis. DSMES is widely implemented in diabetes care and is associated with reduced hemoglobin A1C levels,[6] improved quality of life, reduced all-cause mortality risk, and reduced health care costs.[7]



Integrated Care Models

Because people with diabetes have higher overall rates of psychiatric diagnoses and symptoms, integrated care models that address medical and psychological outcomes have been found to improve both disease control and well-being in clinical trials, and should be more widely implemented in standard clinical practice.[8]



Family Approach to Diabetes Management

BSSR emphasizes the importance of socially rooted programs, such as the Family Approach to Diabetes Management, which assists adolescents and their families in managing Type 1 diabetes. This program distinguishes patterns of family communication that either hinder or support positive clinical outcomes.[9]

Telehealth and eMedicine

Because Type 2 diabetes relates to lifestyle (e.g., diet and exercise), patient self-management is crucial to prevent)—and mitigate complications of)—the disease. BSSR randomized controlled trials indicate that new technologies (e.g., smartphone applications and telemedicine) can be used to increase efficiency in diabetes self-care and management and improve clinical outcomes.[10, 11]

Information on this fact sheet reflects both NIH- and non-NIH-funded research.

References and Definitions

1 Centers for Disease Control and Prevention. (2020). A Snapshot: Diabetes In The United States. [Back]

2 Centers for Disease Control and Prevention. (2020). A Snapshot: Diabetes In The United States. [Back]

3 Centers for Disease Control and Prevention. (2020). A Snapshot: Diabetes In The United States. [Back]

4 Gruss, S., Nhim, K., Gregg, E., Bell, M., Luman, E. & Albright, A. (2017). Public health approaches to type 2 diabetes prevention: the US National Diabetes Prevention Program and beyond. *Current Diabetes Epidemiology,* 19(78). [Back]

5 Ely, E., Gruss, S., Luman, E., Gregg, E., Ali, M., Nhim, K., Rolka, D., Albright, A., (2017). A national effort to prevent Type 2 diabetes: participant-level evaluation of CDC's National Diabetes Prevention Program. *Diabetes Care,* 40(10). [Back]

6 Hemoglobin A1C is a blood test that measures average blood glucose levels over 3 months. It is used to test for Type 2 diabetes and prediabetes.

– Definition adapted from the U.S. National Library of Medicine [Back]

7 American Diabetes Association. (2021). Facilitating behavior change and well-being to improve health outcomes: Standards of medical care in diabetes—2021. *Diabetes Care, 44*(supplement 1). [Back]

8 American Diabetes Association. (2021). Facilitating behavior change and well-being to improve health outcomes: Standards of medical care in diabetes—2021. *Diabetes Care,* 44(supplement 1). [Back]

9 Solowiejczyk, J. (2004). The family approach to diabetes management: Theory into practice toward the development of a new paradigm. *Diabetes Spectrum, 17*(1). [Back]

10 Ashrafzadeh, S. & Hamdy, O. (2019). Patient-driven diabetes care of the future in the technology era. *Cell Metabolism,* 29(3). [Back]

11 Pal, K., Eastwood, S., Michie, S., Farmer, A., Barnard, M., Peacock, R., Wood, B., Inniss, J., & Murray, E. (2013). Computer-based diabetes self-management interventions for adults with Type 2 diabetes mellitus. *Cochrane Database of Systematic Reviews*. [Back]

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