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## Best Approach to the Prevention and Treatment of Diabetes Mellitus Type 2

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### Editorial

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### INTRODUCTION

Diabetes mellitus is a chronic disease that affects an estimated 23.6 million people in the United States. Of those, 17.9 million are diagnosed and 5.7 million are undiagnosed. Ninety to 95 percent of people with diabetes mellitus have type 2 <sup>[1]</sup>. Diabetes is the 7<sup>th</sup> leading cause of death in the United States <sup>[1]</sup>. In addition to these human costs, the estimated total financial cost of DM in the United States in 2007 was \$174 billion, which includes the costs of medical care, disability, and premature death. According to healthy People 2020 <sup>[2]</sup>, there is growing concern about the increase in the number of persons with diabetes mellitus type 2 and the resulting impact on existing healthcare systems. One objective of Healthy People 2020 <sup>2</sup> is to reduce the annual number of new cases of diabetes diagnosed in the U.S. population. Any efforts to reduce the incidence of diabetes mellitus type 2 must include a focus on diet and physical activity.

Lifestyle change is effective in preventing or delaying the onset of type 2 diabetes in high risk individuals. In the Diabetes Prevention Program (DPP) <sup>[3]</sup> participants were divided into 3 treatment groups. The first group, called the lifestyle intervention group, received intensive training in diet, physical activity, and behavior modification. By eating less fat and fewer calories and exercising for a total of 150 minutes a week, the aim was for participants in the first group to lose 7 percent of their body weight and maintain that loss.

The DPP<sup>3</sup> results indicate that millions of high-risk people can delay or avoid developing diabetes mellitus type 2 by losing weight through regular activity and a diet low in fat and calories. Weight loss and physical activity lower the risk of diabetes by improving the body's ability to use insulin and process glucose. Participants in the lifestyle intervention group reduced their risk of developing diabetes by 58 percent. This finding was true across all participating ethnic groups and for both men and women. Approximately 5 percent of the lifestyle intervention group developed diabetes each year during the study period, compared with 11 percent of those in the placebo group. Participants taking metformin reduced their risk of developing diabetes by 31 percent. About 7.8 percent of the metformin group developed diabetes. Metformin was effective for both men and women, but it was least effective in people aged 45 and older.

Despite the evidence on effective interventions to prevent or delay the development of diabetes mellitus type 2, prevalence and incidence of diabetes mellitus type 2 continues to increase. Healthcare providers are responsible for properly educating patients on how to lower their risk for the development of diabetes mellitus type 2. The best practice is for healthcare providers to work in partnership with their patients to make healthy lifestyle choices <sup>[4]</sup>. Nurses are uniquely positioned to provide patient education to those at risk for the development of diabetes mellitus type 2. Personal, social, economic, and environmental factors all play a role in physical activity levels among youth, adults, and older adults. Understanding the barriers to and facilitators of physical activity is important to ensure the effectiveness of interventions to improve levels of physical activity <sup>[2]</sup>. The goal of promoting healthful diets and healthy weight encompasses increasing household food security and eliminating hunger <sup>[2]</sup>. Individuals with a healthful diet consume a variety of nutrient-dense foods within and across the food groups, especially whole

grains, fruits, vegetables, low-fat or fat free dairy products, and lean meats and other protein sources<sup>[2]</sup>. Limitation of saturated and trans fat intake is also important in maintaining a healthful diet. In addition, simple sugars, sodium, and alcohol should be consumed in moderation<sup>[2]</sup>. Nurses should take every opportunity provided during patient interaction to educate individuals on lifestyle behaviors known to reduce the health and economic burden of diabetes mellitus

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