Approximately 30% of adults in the United States are deemed obese. Considering the prevalence of obesity and its associated comorbidities (i.e. cardiovascular disease, hypertension, osteoarthritis, etc.), the economic burden is substantial. Furthermore, individuals who are obese have 27% more physician visits and outpatient costs, 46% increased inpatient costs and 80% increased spending on prescription drugs.

Obesity has been a major contributor to the type 2 diabetes epidemic where nearly 80% of those with type 2 diabetes are considered overweight or obese. Undeniably, the prevention or delay of type 2 diabetes can be achieved through the adoption and maintenance of healthy lifestyle behaviors, like those described in the National Diabetes Prevention Program. Similarly, findings from the Action for Health in Diabetes (Look AHEAD) trial demonstrated that weight loss and physical activity corresponded to a marked decline in A1C and improvements in cardiovascular disease (CVD) risk factors. Moreover, those who lost weight and were physically active took less medication for hyperglycemia, hypertension and hyperlipidemia compared to usual care, correlating with a monthly cost reduction near $50 (median costs $177 vs. $128, respectively). These reports show promise toward both primary and secondary prevention measures.

Effective education and counseling by diabetes educators as part of the comprehensive healthcare team can yield important clinical benefits while improving cost savings to both the individual and the healthcare system. The American Medical Association
recently recognized obesity as a disease that requires a range of medical interventions for treatment and prevention. Diabetes educators are in a unique position to provide continued support for lifestyle changes in obese persons with diabetes. Therefore, this practice advisory was designed to provide guidance for the diabetes educator regarding the obese individual.

**Management of Obesity in the Person with Diabetes**

*Diabetes Self-Management Education and Support (DSMES)*

It is important for the diabetes educator to address obesity as a comorbidity to diabetes through self-management and behavior change. Tools such as the AADE7 Self-Care Behaviors™ can be beneficial in helping persons diagnosed with diabetes to manage weight. For instance, promoting healthy eating and being active are two self-care behaviors that can help achieve weight loss, and should be used as a first-line treatment strategy for obese patients during DSMES. The patient and educator can collaboratively develop strategies for achieving behavior change through appropriate goal setting based on the patient’s readiness to change and current abilities. Success should not only be measured in the weight loss achieved through this process, but more importantly in gradual improvements in health and well-being.

**Healthy Eating**

The National Standards for Diabetes Self-Management Education and Support includes a nutrition education component. Diabetes educators can assist people with diabetes in gaining knowledge about the effect of food on blood glucose; sources of carbohydrates, protein, and fat; and appropriate meal planning and resources to assist in making healthy food choices. Diabetes educators also help people understand portion sizes, read food labels, plan and prepare meals, recognize that the best times to eat are central to managing diabetes, and address barriers to healthy eating. Medical Nutrition Therapy (MNT) provided by registered dietitians (RDs), in combination with DSMES may further benefit the obese patient with prediabetes or diabetes. MNT
involves a comprehensive nutrition assessment and addresses individualized plans regarding comorbidities, personal food preferences, eating habits, and cultural environment all aimed to achieve the patient’s desired clinical outcomes. Diabetes educators who are not RDs should consider recommending physician referrals to MNT and adding RDs to their diabetes care team.

Physical Activity
Increased energy expenditure through physical activity is essential for weight management and overall health. Benefits may include preserving fat-free mass during weight loss and enhanced fitness along with improvements in insulin sensitivity, cardiovascular disease risk factors, and quality of life. While all patients should strive for the accumulation of 150 minutes/week of moderate-intensity physical activity (equivalent to a brisk walk) to improve chronic conditions, educators must recognize that these amounts alone may result in minimal weight loss (~2-3kg). Indeed, exercise for a longer time can provide clinically significant weight loss or minimize weight regain long-term (i.e. 200-300 min/week) and may be recommended. However, matching physical activity to patient’s abilities, interests, resources and health status are important considerations when working with patients ready to change their activity behavior. For in-depth physical activity prescription or advanced exercise considerations, consulting with an exercise physiologist can help the diabetes educator safely and effectively prescribe exercise for the obese patient with prediabetes or diabetes.

Pharmacotherapy
Diabetes educators can play an important role in evidence-based medication management. Therefore, in addition to glycemic control, educators should work with providers when considering the effects of various therapeutic options on bodyweight and when advising treatment strategies. For instance, intensive glycemic control through pharmacotherapy (i.e. sulfonylureas, TZDs, insulin, etc.) has been linked to weight gain in both type 1 and type 2 diabetes. This weight gain can promote hyperglycemia (through insulin resistance), hypertension, hyperlipidemia and additional
cardiac risk factors and comorbid conditions. Hence, treating diabetes in the obese patient with medications that are weight neutral, induce weight loss or minimize weight gain should be advised when appropriate.

As noted, the importance of promoting and maintaining healthy eating patterns and physical activity in obese persons with diabetes are paramount, and should always be encouraged. However, for patients assessed as “high risk” and for whom nutrition and physical activity therapy has not been successful, treatment options may also include pharmacologic interventions specific to weight loss. Indications for this therapy include a BMI >30 or BMI >27 with concomitant obesity related risk factors or disease. Current FDA approved therapy includes Orlistat (Xenical and Alli), Belviq (locaserin hydrochloride) and Qsymia (phentermine and toprianiate extended release). The pharmacological actions of these medications vary and require the patient to deliberately and consciously alter their behavior for significant weight loss to occur.

**Surgical Considerations:**
Surgical interventions for obesity are an option for select patients with a BMI of > 40 kg/m² or BMI >35 kg/m² with associated comorbid conditions. Surgical treatment is typically used when all other attempts of weight loss are unsuccessful. These procedures have shown major benefits to health, survival and quality of life, primarily through its impressive weight loss outcomes reporting reductions as great as 30-40 kg. While the complete effects of bariatric surgery on diabetes are yet to be elucidated, reports have indicated the remission of type 2 diabetes following surgery. Still, educators should express to patients that this procedure requires lifelong counseling, monitoring, and nutrient supplementation, in order to prevent nutritional deficiencies or a relapse into diabetes.

**Role of the Diabetes Educator**
Diabetes educators should address obesity as a component of diabetes self-management with the goal of empowering patients to adopt appropriate lifestyle changes. The most effective behavioral weight loss treatment is in-person, high-
intensity (i.e., ≥14 sessions in 6 months) comprehensive weight loss interventions provided in individual or group sessions.\textsuperscript{20} A brief list of recommendations within this advisory has been composed to help guide the diabetes educator during such counseling of the obese patient with or without diabetes.

- Establish a positive patient-centered partnership using empathetic communication and counseling strategies.
- Individualize nutrition-related goals.
- Tailor education on healthy eating habits to the individual religious and cultural preferences of patients.
- Express nonjudgmental bias against overweight and obese individuals.
- Acknowledge that weight management is a challenge and that weight loss requires realistic and sustainable treatment options.
- Encourage appropriate intake and portions.
- Encourage physical activity and act as a resource for physical activity opportunities within the community.
- Communicate with physicians to consider diabetes medications that are weight neutral or may favorably impact weight loss.
- Create a support system by communicating with physicians and other practitioners to encourage and support lifestyle change in obese patients with or at risk for diabetes.
- Promote the availability of affordable, healthy food and beverages.

Acknowledgements:
Michael See, MS, RCEP, CDE, CES, CPHWC; Robert O. Powell, MS, CDE, ACSM-CES; Kati Konersman MS, RD, CDE

References:


