Diabetes

Summary of the 2019 ADA Standards of Medical Care in Diabetes

Diagnosis of diabetes (pg. 23): Unless there is a clear clinical diagnosis (e.g., patient in a hyperglycemic crisis or with classic symptoms of hyperglycemia and a random plasma glucose >200 mg/dL), diagnosis requires two abnormal test results from the same sample or in two separate test samples.

Type 1 diabetes (pg. 24):

- The incidence and prevalence of type 1 diabetes is increasing. Patients with type 1 diabetes often present with acute symptoms of diabetes and markedly elevated blood glucose levels, and approximately one-third are diagnosed with life-threatening DKA.

- Plasma blood glucose rather than A1C should be used to diagnose the acute onset of type 1 diabetes in individuals with symptoms of hyperglycemia.

- Although there is currently a lack of accepted screening programs, one should consider referring relatives of those with type 1 diabetes for antibody testing for risk assessment.

- Lifestyle Interventions;
  - Nutrition (pg. 55)
    - For many individuals with diabetes, the most challenging part of the treatment plan is determining what to eat and following a meal plan.
    - Nutrition therapy has an integral role in overall diabetes management, and each person with diabetes should be actively engaged in education, self-management, and treatment planning with his or her health care team, including the collaborative development of an individualized eating plan.
    - The diabetes plate method is commonly used for providing basic meal planning guidance as it provides a visual guide showing how to control calories (by featuring a smaller plate) and carbohydrates (by limiting them to what fits in one-quarter of the plate) and puts an emphasis on low-carbohydrate (or non-starchy) vegetables.
  - Physical Activity (pg. 59)
    - Children and adolescents with type 1 or type 2 diabetes or prediabetes should engage in 60 min/day or more of moderate- or vigorous-intensity aerobic activity, with vigorous muscle-strengthening and bone-strengthening activities at least 3 days/week.
    - Most adults with type 1 and type 2 diabetes should engage in 150 min or more of moderate- to-vigorous intensity aerobic activity per week, spread over at least 3 days/week, with no more than 2 consecutive days without activity. Adults with type 1 and type 2 diabetes should engage in 2–3 sessions/week of resistance exercise on nonconsecutive days.
    - All adults, and particularly those with type 2 diabetes, should decrease the amount of time spent in daily sedentary behavior. Prolonged sitting should be interrupted every 30 min for blood glucose benefits.
Prediabetes and Type 2 diabetes (pg 25):

- Screening for prediabetes and type 2 diabetes with an informal assessment of risk factors or validated tools should be considered in asymptomatic adults.
- For all people, testing should begin at age 45 years.
- If tests are normal, repeat testing carried out at a minimum of 3-year intervals is reasonable.
- At least annual monitoring (pg. 37) for the development of type 2 diabetes in those with prediabetes is suggested.

Lifestyle Interventions (pg. 37):

- Refer patients with prediabetes to an intensive behavioral lifestyle intervention program modeled on the Diabetes Prevention Program (DPP) to achieve and maintain 7% loss of initial body weight and increase moderate-intensity physical activity (such as brisk walking) to at least 150 min/week.
- Nutrition
  - Structured behavioral weight loss therapy, including a reduced calorie meal plan and physical activity, is of paramount importance for those at high risk for
  - Because weight loss through lifestyle changes alone can be difficult to maintain long term, people being treated with weight loss therapy should have access to ongoing support and additional therapeutic options (such as pharmacotherapy) if needed.
- Physical Activity
  - 150 min/week of moderate intensity physical activity, such as brisk walking, showed beneficial effects in those with prediabetes.
  - In addition to aerobic activity, an exercise regimen designed to prevent diabetes may include resistance training.
  - Breaking up prolonged sedentary time may also be encouraged.
- Based on patient preference, technology-assisted diabetes prevention interventions may be effective in preventing type 2 diabetes and should be considered.
- Pharmacologic Interventions (pg. 39)
  - Metformin therapy for prevention of type 2 diabetes should be considered in those with prediabetes.
- CVD and risk management (pg. 39)
  - Prediabetes is associated with heightened cardiovascular risk; therefore, screening for and treatment of modifiable risk factors for cardiovascular disease is suggested.
- Diabetes self-management education and support (pg. 40)
  - Diabetes self-management education and support programs may be appropriate venues for people with prediabetes to receive education and support to develop and maintain behaviors that can prevent or delay the development of type 2 diabetes.
- Assessment of Glycemic Control (pg. 69)
  - Glycemic management is primarily assessed with the A1C test, which reflects average glycemia over approximately 3 months.
  - Perform the A1C test at least two times a year in patients who are meeting treatment goals (and who have stable glycemic control).
- Perform the A1C test quarterly in patients whose therapy has changed or who are not meeting glycemic goals.
- Point-of-care testing for A1C provides the opportunity for more timely treatment changes.
- A1C goals (pg. 71)
  - A reasonable A1C goal for many non-pregnant adults is 7%.
  - Providers might reasonably suggest more stringent A1C goals (such as 6.5%) for selected individual patients if this can be achieved without significant hypoglycemia or other adverse effects of treatment (i.e., polypharmacy).
  - Less stringent A1C goals (such as 8%) may be appropriate for patients with a history of severe hypoglycemia, limited life expectancy, advanced microvascular or macrovascular complications, extensive comorbid conditions, or long-standing diabetes in whom the goal is difficult to achieve.
  - Older adults (pg. 148) who are otherwise healthy with few coexisting chronic illnesses and intact cognitive function and functional status should have lower glycemic goals (such as A1C 7.5%), while those with multiple coexisting chronic illnesses, cognitive impairment, or functional dependence should have less stringent glycemic goals (such as A1C 8.0–8.5%).
  - Dying patient (pg. 154): for patients with type 2 diabetes, the discontinuation of all medications may be a reasonable approach, as patients are unlikely to have any oral intake. In patients with type 1 diabetes, there is no consensus, but a small amount of basal insulin may maintain glucose levels and prevent acute hyperglycemic complications.
- Obesity Management (pg. 89)
  - There is strong and consistent evidence that obesity management can delay the progression from prediabetes to type 2 diabetes and is beneficial in the treatment of type 2 diabetes.
  - At each patient encounter, BMI should be calculated and documented in the medical record.
- Diet, physical activity, and behavioral therapy (pg. 90)
  - Diet, physical activity, and behavioral therapy designed to achieve and maintain >5% weight loss should be prescribed for patients with type 2 diabetes who are overweight or obese and ready to achieve weight loss.
  - Such interventions should be high intensity (>16 sessions in 6 months) and focus on diet, physical activity, and behavioral strategies to achieve a 500–750kcal/day energy deficit.
  - Diets should be individualized, as those that provide the same caloric restriction but differ in protein, carbohydrate, and fat content are equally effective in achieving weight loss.
  - For patients who achieve short term weight-loss goals, long-term (>1 year) comprehensive weight maintenance programs should be prescribed. Such programs should provide at least monthly contact and encourage ongoing monitoring of body weight (weekly or more frequently) and/or other self-monitoring strategies, such as tracking intake, steps, etc.;
continued consumption of a reduced-calorie diet; and participation in high levels of physical activity (200–300 min/week).

- To achieve weight loss of >5%, short-term (3-month) interventions that use very low-calorie diets (<800 kcal/day) and total meal replacements may be prescribed for carefully selected patients by trained practitioners in medical care settings with close medical monitoring. To maintain weight loss, such programs must incorporate long-term comprehensive weight-maintenance counseling.

**PHARMACOTHERAPY (pg. 91)**

- When choosing glucose-lowering medications for overweight or obese patients with type 2 diabetes, consider their effect on weight.
- Whenever possible, minimize medications for comorbid conditions that are associated with weight gain.
- Weight-loss medications are effective as adjuncts to diet, physical activity, and behavioral counseling for selected patients with type 2 diabetes and BMI >27 kg/m². Potential benefits must be weighed against the potential risks of the medications.
- If a patient’s response to weight loss medications is <5% weight loss after 3 months or if there are significant safety or tolerability issues at any time, the medication should be discontinued and alternative medications or treatment approaches should be considered.

**METABOLIC SURGERY (pg. 93)**

- Metabolic surgery should be recommended as an option to treat type 2 diabetes in appropriate surgical candidates with BMI >40 kg/m² (BMI >37.5 kg/m² in Asian Americans) and in adults with BMI 35.0–39.9 kg/m² (32.5–37.4 kg/m² in Asian Americans) who do not achieve durable weight loss and improvement in comorbidities (including hyperglycemia) with reasonable nonsurgical methods.
- Metabolic surgery may be considered as an option for adults with type 2 diabetes and BMI 30.0–34.9 kg/m² (27.5–32.4 kg/m² in Asian Americans) who do not achieve durable weight loss and improvement in comorbidities (including hyperglycemia) with reasonable nonsurgical methods.
- Metabolic surgery should be performed in high-volume centers with multidisciplinary teams that understand and are experienced in the management of diabetes and gastrointestinal surgery.
- Long-term lifestyle support and routine monitoring of micronutrient and nutritional status must be provided to patients after surgery, according to guidelines for postoperative management of metabolic surgery by national and international professional societies.
- People presenting for metabolic surgery should receive a comprehensive readiness and mental health assessment.
- People who undergo metabolic surgery should be evaluated to assess the need for ongoing mental health services to help them adjust to medical and psychosocial changes after surgery.
- The safety of metabolic surgery has improved significantly over the past two decades, with continued refinement of minimally invasive approaches (laparoscopic surgery), enhanced training and credentialing, and involvement of multidisciplinary teams.
This guideline summary is not all-inclusive of available guideline content. Please reference the full guideline for comprehensive content.