

## Adult Diabetes Care

### Purpose

To identify and promote the most important contributors to improved clinical outcomes for adult diabetics in the outpatient setting.

### Major Recommendations

- Educate patients on the ABC's of Diabetes Care (A1C, Blood Pressure, Cholesterol)
- A reasonable A1C goal for many nonpregnant adults is <7% (53 mmol/mol). (A)
- 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 or extensive comorbid conditions. (B)
- In patients with known CVD, consider ACE inhibitor therapy (C) and use aspirin and statin therapy (A) (if not contraindicated) to reduce the risk of cardiovascular events. In patients with a prior myocardial infarction, beta blockers should be continued for at least 2 years after the event. (B)
- Weight loss is recommended for all overweight or obese individuals who have or are at risk for diabetes (A) If lifestyle modification implementation is not successful, then pharmacological or surgical intervention should be considered.
- Most patients with diabetes and hypertension should be treated to a systolic blood pressure goal of <140 mmHg and a diastolic blood pressure goal of 90 mmHg. (A)
- For typical patients with Type 2 Diabetes ages 40-75, a moderate dose statin is recommended. (A) For people with other forms of diabetes, given the high risk of CAD, use of a statin often makes sense, but currently no strong data exist.

### To Achieve These Goals:

- Individuals who have diabetes should receive individualized medical nutrition therapy (MNT), preferably provided by a registered dietitian. (A)
- People with diabetes should receive diabetes self-management education (DSME) and diabetes self-management support (DSMS). (B)
- Adults with diabetes should be advised to perform at least 150 min/week of moderate-intensity aerobic physical activity (50-70% of maximum heart rate), spread over at least 3 days/week with no more than 2 consecutive days without exercise. In the absence of contraindications, adults with type 2 diabetes should be encouraged to perform resistance training at least twice per week. (A) All adults, and particularly those with type 2 diabetes, should decrease the amount of time spent in daily sedentary behavior. (B) Prolonged sitting should be interrupted every 30 minutes for blood glucose benefits, particularly in adults with type 2 diabetes. (C)
- Advise all patients not to smoke or use tobacco products. (A)
- Patients with type 2 diabetes should have an initial dilated and comprehensive eye examination by an ophthalmologist or optometrist shortly after the diagnosis of diabetes. (B)
- High intensity statin therapy (e.g., atorvastatin 40-80 mg or equivalent) should be added to lifestyle therapy for all patients of all ages with diabetes and overt CVD/ASCVD. (A) If intolerant to statins, consider PCSK9 therapy. (E)
- Consider using moderate intensity statin therapy in addition to lifestyle therapy for patients with diabetes > 75 years old without overt CVD/ASCVD. (B).
- Metabolic surgery should be recommended to treat type 2 diabetes in appropriate surgical candidates with a BMI  $\geq 40$  kg/m<sup>2</sup> (BMI  $\geq 37.5$  kg/m<sup>2</sup> in Asian Americans) regardless of the level of glycemic control or complexity of glucose-lowering regimens and in adults with a BMI of 35.0-39.9 kg/m<sup>2</sup> (32.5-37.4 kg/m<sup>2</sup> in Asian Americans) when hyperglycemia is inadequately controlled despite lifestyle and optimal medical therapy. (A)
- In patients with known CVD, use aspirin and statin therapy (if not contraindicated) to reduce the risk of cardiovascular events. (A)

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- Metformin, if not contraindicated and if tolerated, is the preferred initial pharmacological agent for type 2 diabetes. Alternate therapy, intensification of therapy or when to begin with combination therapy is well described in treatment algorithms written by the ADA or AACE. (A) The value of continuous blood glucose monitoring is expanding and should be considered in appropriate patients.

### Other Recommendations

- Either an ACE inhibitor or ARB (but not both in combination) is suggested for the treatment of the non-pregnant patient with modestly elevated urinary microalbumin excretion (30–299 mg/day) (B) and is recommended for those with urinary microalbumin excretion 300 mg/day. (A)\*
- Optimize glucose and blood pressure control to reduce the risk or slow the progression of nephropathy and retinopathy. (A)
- At least once a year, assess urinary albumin (e.g., spot UACR) and (eGFR in patients with type 1 diabetes with a duration of  $\geq 5$  years, in all patient with type 2 diabetes, and in all patients with comorbid hypertension. (B)
- Eye examinations for type 1 and type 2 diabetic patients should be repeated annually by an ophthalmologist or optometrist. Less frequent exams (up to every two 2 years) may be considered following one or more normal eye exams. Examinations will be required more frequently if retinopathy is progressing. (B)
- Most people with type 1 diabetes should be treated with multiple dose insulin injections (three to four injections per day of basal and prandial insulin) or continuous subcutaneous insulin infusion (CSII) using insulin analogs to reduce hypoglycemic risk. (A) Appropriate use of self blood glucose testing in patients receiving basal bolus insulin therapy should be encouraged. Selection of an appropriate basal insulin needs to be made by the provider since they may not all be equivalent, including different rates of hypoglycemia.
- Insulin-treated patients with hypoglycemia unawareness or an episode of severe hypoglycemia should be advised to raise their glycemic targets to strictly avoid further hypoglycemia for at least several weeks, to partially reverse hypoglycemia unawareness, and to reduce risk of future episodes. (A) If this does not succeed, real time blood glucose monitoring is advisable. (A)
- Treatment for hypertension should include drug classes demonstrated to reduce cardiovascular events in patients with diabetes (ACE inhibitors, angiotensin receptor blockers, thiazide-like diuretics, or dihydropyridine calcium channel blockers). Multiple drug therapy is generally required to achieve blood pressure targets (but not a combination of ACE inhibitors and angiotensin receptor blockers). (A) An ACE inhibitor or angiotensin receptor blocker, at the maximum tolerated dose indicated for blood pressure treatment, is the recommended first-line treatment for hypertension in patients with diabetes and urinary albumin-to-creatinine ratio 300 mg/g creatinine (A) or 30-299 mg/g creatinine (B). If one class is not tolerated, the other should be substituted. (B)

### Measures Commonly Used by National Organizations

- Hemoglobin A1c Poor Control: Percentage of patients 18-75 years of age who had hemoglobin A1c  $> 9.0\%$  during the measurement period (MIPS) **OR** Percentage of patients aged 18 -75 years with diabetes mellitus who had most recent hemoglobin A1c greater than 9.0% (PQRS)
- High Blood Pressure Control: Percentage of patients aged 18 through 75 years with diabetes mellitus who had most recent blood pressure in control (less than 140/90 mmHg) (PQRS)

### High Risk Populations/Disparities

- Type 2 Diabetes develops more frequently in women with prior gestational diabetes mellitus and in certain racial/ethnic groups (African American, Native American, Hispanic/Latino, and Asian American). Women with diabetes are also at great risk of coronary heart disease than men with diabetes.
- Providers should assess social context, including potential food insecurity, housing stability, and financial barriers, and apply that information to treatment decisions. (A)