

South Carolina Adult Guidelines for Diabetes Care – 2018

Key concepts: goals should be individualized; certain populations (children, pregnant women, and elderly) require special considerations; less intensive glycemic goals may be indicated in patients with severe or frequent hypoglycemia; more intensive glycemic goals may further reduce microvascular complications at the cost of increasing hypoglycemia; postprandial glucose may be targeted if A1C goals are not met despite reaching preprandial glucose goals.

Screening for Diagnosis of Diabetes

At age 45, all adults should be screened regardless of weight. To test for diabetes or to assess risk of future diabetes, either A1C, Fasting Plasma Glucose (FPG), or 2-h 75 g Oral Glucose Tolerance Test (OGTT) are appropriate. An A1C level of 5.7% to 6.4% indicates increased risk for diabetes. The presence of diabetes is indicated by: A1C level of 6.5 % or higher; FPG level of \geq 126 mg/dL; OGTT level \geq 200 mg/dL.

Prevention/delay of type 2 diabetes: refer to support program targeting weight loss of 7% of body weight and physical activity to at least 150 min/week (i.e. National Diabetes Prevention Program).

In those identified with prediabetes, identify and if appropriate, treat other CVD risk factors. Test youth who are overweight or obese and have at least one additional risk factor.

* Reference: International Diabetes Federation (IDF) Consensus Worldwide Definition of the Metabolic Syndrome

Exam/Test	Care of the Person with Type 1 Diabetes	Care of the Person with Type 2 Diabetes																																									
Complete exam	To classify the patient, detect complications, develop a management plan, and provide a basis for continuing care.																																										
Office visits	Quarterly, but dictated by severity of condition and response to treatment; if uncontrolled, visits may be more often. Inform the relatives of patients with type 1 diabetes of the opportunity to be tested for type 1 diabetes risk, but only in the setting of a clinical research study.																																										
Body Mass Index (Weight each visit; Height 1x/year)	Each visit. Diet, physical activity, and behavioral therapy to achieve > 5% weight loss should be prescribed for overweight (BMI > 25-29.9) and obese (BMI > 30) patients with type 2 DM ready to achieve weight loss. FDA approved weight loss medications are available to be used as adjuncts in patients with BMI >27 kg/m2 with one or more obesity associated comorbid conditions and in patients with BMI > 30 kg/m2 without comorbidities who are motivated to lose weight. Metabolic surgery should be recommended to treat type 2 DM in appropriate surgical candidates with BMI > 40 kg/m2 (BMI > 37.5 kg/m2 in Asian Americans), regardless of the level of glycemic control or complexity of glucose-lowering regimens, and in adults with BMI 35.0– 39.9 kg/m2 (32.5–37.4 kg/m2 in Asian Americans) when hyperglycemia is inadequately controlled despite lifestyle and optimal medical therapy.*																																										
A1C Goal: A1C < 7.0%	Quarterly, then 2x/year if meeting goal; more stringent goals (< 6.5%) may further reduce complications at the cost of increased risk of hypoglycemia and may be considered in individual patients. In older adult with hypoglycemia, goal may be 7.5-8% to avoid hypoglycemia episodes, if history of severe hypoglycemia, advanced complications or limited life expectancy. Utilize a method certified by NGSP and DCCT assay.																																										
Blood pressure Systolic < 140 mmHg; Diastolic < 90 mmHg	Each visit. Prescribe medications for BP > 140/90 mmHg along with lifestyle change. Recommended treatment: ACE-I or ARB, thiazide - like diuretics, or dihydropyridine calcium channel blockers. If using combination therapy to achieve target, then examine risks vs. benefits of goal of < 140/90 and monitor for side effects. With increased cardiovascular risk, the BP target should be < 130/80 mmHg. All hypertensive patients should monitor BP at home.																																										
Lipid profile Screening at diabetes diagnosis, initial medical evaluation, and/or at age 40. Thereafter every 5 years if not on a statin or frequently if on a statin or indicated. ** In addition to lifestyle therapy. *** ASCVD risk factors include LDL >100 mg/dL, high blood pressure, smoking, overweight, and obesity, and family history of premature ASCVD.	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">Age</th> <th style="width: 35%;">Risk Factors</th> <th style="width: 20%;">Recommended Statin Intensity**</th> <th style="width: 30%;">Monitoring</th> </tr> </thead> <tbody> <tr> <td rowspan="3" style="text-align: center;"><40</td> <td style="text-align: center;">0</td> <td style="text-align: center;">none</td> <td style="text-align: center;">Annually or as needed to check adherence</td> </tr> <tr> <td style="text-align: center;">ASCVD risk factor(s)***</td> <td style="text-align: center;">Moderate or high</td> <td></td> </tr> <tr> <td style="text-align: center;">Overt ASCVD</td> <td style="text-align: center;">High</td> <td></td> </tr> <tr> <td rowspan="4" style="text-align: center;">40 – 75</td> <td style="text-align: center;">0</td> <td style="text-align: center;">Moderate</td> <td style="text-align: center;">As needed to check adherence</td> </tr> <tr> <td style="text-align: center;">ASCVD risk factors</td> <td style="text-align: center;">high</td> <td></td> </tr> <tr> <td style="text-align: center;">Overt ASCVD</td> <td style="text-align: center;">High</td> <td></td> </tr> <tr> <td style="text-align: center;">ACS and LDL cholesterol >50mg/dL (1.3 mmol/L) in patients who cannot tolerate high-dose statins</td> <td style="text-align: center;">Moderate plus ezetimibe</td> <td></td> </tr> <tr> <td rowspan="4" style="text-align: center;">>75</td> <td style="text-align: center;">0</td> <td style="text-align: center;">Moderate</td> <td style="text-align: center;">As needed to check adherence</td> </tr> <tr> <td style="text-align: center;">ASCVD risk factors</td> <td style="text-align: center;">Moderate or high</td> <td></td> </tr> <tr> <td style="text-align: center;">Overt ASCVD</td> <td style="text-align: center;">High</td> <td></td> </tr> <tr> <td style="text-align: center;">ACS and LDL cholesterol >50mg/dL (1.3 mmol/L) in patients who cannot tolerate high-dose statins</td> <td style="text-align: center;">Moderate plus ezetimibe</td> <td></td> </tr> </tbody> </table>			Age	Risk Factors	Recommended Statin Intensity**	Monitoring	<40	0	none	Annually or as needed to check adherence	ASCVD risk factor(s)***	Moderate or high		Overt ASCVD	High		40 – 75	0	Moderate	As needed to check adherence	ASCVD risk factors	high		Overt ASCVD	High		ACS and LDL cholesterol >50mg/dL (1.3 mmol/L) in patients who cannot tolerate high-dose statins	Moderate plus ezetimibe		>75	0	Moderate	As needed to check adherence	ASCVD risk factors	Moderate or high		Overt ASCVD	High		ACS and LDL cholesterol >50mg/dL (1.3 mmol/L) in patients who cannot tolerate high-dose statins	Moderate plus ezetimibe	
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Diabetic Kidney disease Assess spot urine albumin creatinine ratio (UACR) and estimated glomerular filtration rate eGFR	In all patients with comorbid hypertension. If UACR < 30 mg/g Cr → refer to nephrologist. ACE-I or ARB recommended for treatment of microalbuminuria when 2 of 3 tests are elevated within a 6-month period.																																										
Management of CKD with calculated eGFR	Should begin after five years duration then annually At diagnosis and annually																																										
Aspirin therapy 75-162 mg/day	Yearly measurement of UACR, serum Cr, potassium; more frequent monitoring depending on the eGFR at the time.																																										
Dilated eye exam By an ophthalmologist or experienced optometrist in diabetic retinopathy	All patients with type 1 or type 2 (unless contraindicated) with increased CV risk for primary prevention, including most men and women \geq age 50 with at least one additional CVD risk factor. As secondary prevention for all with history of CVD. For patients with atherosclerotic cardiovascular disease and documented aspirin allergy, clopidogrel 75mg/d should be used.																																										
Foot examination	Within 5 years after onset of diabetes, then annually; less frequent exams (every 2 years) may be considered when eye exam normal.		At diagnosis of diabetes, then annually; less frequent exams (every 2 years) may be considered when eye exam normal.																																								
Self-monitored blood glucose (SMBG) Goals: Preprandial glucose 80-130 mg/dL Peak post-prandial glucose < 180 mg/dL Prior to driving > 90 mg/dL	Visual inspection at each visit. Comprehensive exam annually should include inspection of the skin, neurological assessment (10-g monofilament testing with at least one other assessment: pinprick, temperature, vibration, or ankle reflexes), and vascular assessment including pulses in the legs and feet, assessment of foot deformities (focal lesions, interdigital calluses, maceration, nails) musculoskeletal (ROM, foot type, digits, bony prominences). Specialized therapeutic footwear is recommended for high-risk patients with diabetes including those with severe neuropathy, foot deformities, or history of amputation.		5 years after diagnosis and at least annually thereafter. At diagnosis and at least annually thereafter.																																								
	Three or more times daily for patients using multiple insulin injections or insulin pump therapy, including before meals or snacks, and occasionally postprandial, at bedtime, and prior to exercise, if suspect low BG and critical tasks such as driving. CGM is useful to lower A1c in type 1 DM > 25 yrs.		May be helpful to guide treatment/self-management for patients using less frequent insulin injections or non-insulin therapies.																																								

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Exam/Test	Care of the Person with Type 1 Diabetes	Care of the Person with Type 2 Diabetes
Hypoglycemia	The preferred treatment is glucose (15-20 grams) for a conscious individual; any glucose containing carbohydrate is appropriate. Repeat treatment if SMBG in fifteen shows persistent hypoglycemia. When SMBG returns to normal, the person should eat a meal or snack to prevent hypoglycemia recurrence. Prescribe glucagon 1 mg SC/IM for all individuals at significant risk of severe hypoglycemia. If patient drives, assess patient's medical history for loss of consciousness and ability to drive.	
Review self-management goals	Each visit emphasizes glycemic and hypertensive control; weight loss recommended for all overweight or obese individuals at risk for or with diabetes using Mediterranean, low fat/calorie restricted or low-carbohydrate diet. At least 150 minutes per week of moderate-intensity aerobic physical activity*; if no contraindications, encourage people with type 2 DM to perform resistance training ≥ 2 times/week; review eating patterns with emphasis on carbohydrate -key strategy in glycemic control, if hypertensive- encourage DASH** style dietary pattern including reducing sodium and increasing potassium intake, and saturated fats; (should be < 7% of total calories); minimize intake of <i>trans</i> fat; substitute monounsaturated for saturated and <i>trans</i> fat (AACE). Encourage dietary fiber of 14 gm of fiber/1,000 kcal and whole grain foods Limit daily alcohol to 1 drink or less for women and 2 drinks or less for men. For lipids, increase omega 3 fats, viscous fiber, and plant stanols/sterols; reduce saturated, <i>trans</i> fat and dietary cholesterol.	
Diabetes self-management education and support (DSMS) DSMS focuses on education and the importance of support which is ongoing for people with diabetes. American Association of Diabetes Educators (AADE) Position Statement: AADE7™ Self-Care Behaviors. <i>Diabetes Educ.</i> 2008; 34: 445-449.)	Education should be individualized, based on the National Standards for DSMS and include the AADE7™: <ul style="list-style-type: none"> ○ Being Active - regular physical and working towards an appropriate BMI. ○ Problem Solving - Assessment of patient knowledge, attitudes, self-management skills and health status; strategies for making health behavior changes and addressing psychosocial concerns. ○ Taking Medication - safe and effective use of medications; prevention, detection and treatment of acute and chronic complications, including recognition of hypoglycemia. ○ Healthy Eating - Importance of nutrition management and healthy diet. ○ Monitoring - Role of self-monitoring of blood glucose in glycemic control. ○ Reducing Risks - Cardiovascular risk reduction, smoking cessation intervention and secondhand smoke avoidance, sexual dysfunction, self-care of feet, preconception counseling, dental care. ○ Healthy Coping – Set achievable behavioral goals and provide encouragement and coping strategies. Individuals with pre-diabetes or diabetes should receive individualized Medical Nutrition Therapy (MNT) by registered dietitian (RD). Type 1 DM patients should be educated how to match prandial insulin dose to carbohydrate intake, pre-meal blood glucose and anticipated activity.	
Assessment of patient's psychological & social situation	Initial and ongoing part of medical management of diabetes.	
Mental health screen: --Depression screen --Anxiety screen --Disordered eating behavior	All adult members with a diagnosis of diabetes will be screened for depression <u>using any screening method that the provider prefers</u> *** or asking the following two questions: 1. "Over the past 2 weeks have you felt down, depressed, or hopeless?" 2. "Over the past 2 weeks have you felt little interest or pleasure in doing things?" (If positive for the 2 questions, screen further for depression.) <i>Depression: Referrals for treatment of depression should be made to experienced mental health providers in conjunction with collaborative care with the patient's diabetes treatment team. Anxiety: Consider screening in people exhibiting anxiety regarding diabetes complications, insulin injections or infusion, taking medications, and/or hypoglycemia that interferes with self-management behaviors. Disordered eating behavior: Consider reevaluating the treatment regimen if patient presents with symptoms of disordered eating behavior, an eating disorder, or disrupted patterns of eating.</i> ***Zung, Beck, PHQ-9, CES-D	
Immunizations: Influenza Pneumonia: 2 pneumococcal conjugate vaccines available (PCV13 and PPSV 23) Hepatitis B	Influenza: Annually for all patients > 2 years of age. Pneumonia: All people with diabetes, 2 through 64 years of age, with pneumococcal polysaccharide vaccine (PPSV23). At age > 65 years, administer (PCV13) at least 1 year after vaccination with PPSV23, followed by another dose of vaccine PPSV23 at least 1 year after PCV13, and at least 5 years after the last dose of PPSV23. Hepatitis B: Consider administering 3-dose series of hepatitis B vaccine to unvaccinated adults with diabetes who are age > 60 years.	
Smoking cessation	Advise smoking/tobacco cessation counseling and other forms of treatment. Advise all patients not to smoke. Refer to SC Quit Line available at 1-800-QuitNow. E-cigarettes <u>SHOULD NOT</u> be used as an alternative to smoking.	
Others: Oral Health, Obstructive Sleep Apnea, Liver function tests	Consider Oral exam every 6 months, screening for OSA in symptomatic patients. LFTs annually	
Preconception and family planning counseling	Preconception counseling for all women of childbearing age. Women with gestational diabetes should be screened for diabetes 6 to 12 weeks postpartum and should have subsequent screening for the development of diabetes or prediabetes at least every 3 years.	
Autoimmune disease screening	Screen for thyroid disease (TSH), Celiac disease, Pernicious Anemia in persons with type 1 soon after diagnosis and as appropriate. TSH can be rechecked every 1-2 years or with symptoms of thyroid dysfunction. Free T4 should be measured if TSH abnormal.	

Reference unless otherwise noted:

Reference: American Diabetes Association. Standards of Medical Care in Diabetes-2018. Diabetes Care. Volume 41, Supplement 1. January 2018

http://care.diabetesjournals.org/content/41/Supplement_1

*Physical activity recommendations
http://journals.lww.com/acsm-msse/Fulltext/2010/12000/Exercise_and_Type_2_Diabetes_American_College_of.18.aspx

**Dietary approaches to Stop Hypertension Eating Plan (DASH)
<http://www.nhlbi.nih.gov/health/public/heart/hbp/dash/introduction.html>

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