

OPPORTUNITY	PROCESS	MEASUREMENT/VALUE	COMMON APPROPRIATE INTERVENTIONS	SUGGESTED FOLLOW-UP																		
Screening for and Diagnosis of Diabetes Mellitus (DM) ^{1,2}	<ul style="list-style-type: none"> All adults 45 years or older. Screening should be considered at a younger age or more frequently in individuals with BMI ≥25 Kg/m², or additional risk factors. Screen overweight children and adolescents with risk factors. 	<ul style="list-style-type: none"> Symptoms of DM and a casual glucose ≥ 200 mg/dL. FPG ≥ 126 mg/dL. 2-h PG ≥ 200 mg/dL during a 75 gm OGTT. In the absence of unequivocal hyperglycemia with acute metabolic decompensation, these criteria should be confirmed by retesting on a different day. FPG ≥ 100 & <126 mg/dL=Impaired Fasting Glucose (IFG). 2-h PG ≥140 & <200 mg/dL=Impaired Glucose Tolerance (IGT). 	<ul style="list-style-type: none"> If abnormal, follow guideline. 	<ul style="list-style-type: none"> If normal, repeat at least every three years. For high-risk patients, repeat annually. 																		
Monitoring for Glucose Control ^{2,12,13}	<p>A1C:</p> <ul style="list-style-type: none"> Meeting treatment goals: every six months. Not controlled, or change in therapy: every three months. 	<p>Goal:</p> <ul style="list-style-type: none"> A1C < 7.0%. A1C < 6% can be considered in individual patients. 	<ul style="list-style-type: none"> If above goal of <7.0%, follow guideline for non-pharmacologic and pharmacologic treatment. Education as indicated. 	<ul style="list-style-type: none"> Repeat every three months until goal is reached. Repeat every six months if meeting treatment goal. 																		
Self-Monitoring of Blood Glucose for Glucose Control (SMBG) ²	<ul style="list-style-type: none"> Insulin-using: Three or more times per day. Non-insulin-using: As needed to reach glucose goals and for sick-day management. 	<p>Goal:</p> <table border="1"> <tr> <td>Value</td> <td>WholeBlood</td> <td>Plasma</td> </tr> <tr> <td>Preprandial</td> <td>80-120 mg/dL</td> <td>90-130 mg/dL</td> </tr> <tr> <td>Postprandial</td> <td>< 170 mg/dL</td> <td>< 180 mg/dL</td> </tr> </table> <p>Additional Action Parameters:</p> <table border="1"> <tr> <td>Value</td> <td>Whole Blood</td> <td>Plasma</td> </tr> <tr> <td>Preprandial</td> <td>< 80 or >140 mg/dL</td> <td>< 90 or > 150 mg/dL</td> </tr> <tr> <td>Postprandial</td> <td><100 or >160 mg/dL</td> <td>< 110 or > 180 mg/dL</td> </tr> </table>	Value	WholeBlood	Plasma	Preprandial	80-120 mg/dL	90-130 mg/dL	Postprandial	< 170 mg/dL	< 180 mg/dL	Value	Whole Blood	Plasma	Preprandial	< 80 or >140 mg/dL	< 90 or > 150 mg/dL	Postprandial	<100 or >160 mg/dL	< 110 or > 180 mg/dL	<ul style="list-style-type: none"> Adjust therapies based on results of SMBG. <p>Note: Most SMBG monitors reflect plasma values. Check monitor to see whether it measures whole blood or plasma values.</p>	<ul style="list-style-type: none"> Self-management at home, based on results.
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Foot and Neuropathy Evaluation ^{2,3}	<ul style="list-style-type: none"> Inspection of feet at each office visit. Initial screening should include a claudication history and assessment of pedal pulses. Yearly sensory testing with 5.07 microns (10 gm) nylon monofilament. 	<ul style="list-style-type: none"> Document foot inspection at each visit. Document full foot exam each year – foot structure, vascular status and skin integrity. Consider obtaining an Ankle Brachial Index (ABI). Examination for protective sensation. 	<ul style="list-style-type: none"> Refer to foot care specialist is high-risk (peripheral neuropathy with loss of sensation, altered biomechanics, peripheral vascular disease and/or bone deformities) Evaluate for appropriate footwear prescription or referral if abnormal Repeat basic foot-care education. 	<ul style="list-style-type: none"> Inspection at each visit. Repeat sensory exam at least yearly. 																		
Retinopathy Evaluation ^{2,11}	<ul style="list-style-type: none"> Yearly dilated retinal eye examination. 	<ul style="list-style-type: none"> Retinal examination yearly. <p>Initial Exam:</p> <ul style="list-style-type: none"> Under age 10: Based on clinical judgment. Type 1: Within three to five years after diagnosis of diabetes. Type 2: At time of diagnosis of diabetes. 	<ul style="list-style-type: none"> Ophthalmology guidelines for abnormal examination. 	<ul style="list-style-type: none"> Yearly routine examination and more frequently if retinopathy is progressing. Less frequent exams (every two to three years) may be considered in the setting of a normal eye with the advice of an eye care professional. 																		
Nephropathy Evaluation ^{2,4}	<ul style="list-style-type: none"> In the absence of previously documented proteinuria, screen annually for microalbuminuria.** 	<p>Test annually for one of the following:</p> <ul style="list-style-type: none"> Albumin/creatinine ratio in random spot urine is preferred. 24 hour urine collection for albumin and creatinine clearance. Four-hour or overnight timed urine collection for albumin. 	<ul style="list-style-type: none"> Confirm with repeat test and rule out other causes (infection). Therapy with ACE inhibitors and/or ARBs to treat proteinuria, including microalbuminuria if not contraindicated.***/+ Non-dihydropyridine CCB may be beneficial. Consider statin therapy. 	<ul style="list-style-type: none"> Repeat at least annually. Check more frequently (every two to three months) if positive result obtained. Monitor K⁺ and Cr if on ACE inhibitor or ARB. Refer to endocrinologist or nephrologist if deterioration occurs. 																		
Blood Pressure Monitoring ^{2,6,14}	<ul style="list-style-type: none"> Measurement at each visit. 	<p>Goal:</p> <ul style="list-style-type: none"> Adults: <130/80 mmHg. Children: <90th percentile of age-adjusted values. 	<ul style="list-style-type: none"> BP ≤ 130 -139 TLC. If goal not reached, begin appropriate pharmacologic intervention. BP > 140/90 initiate TLC and pharmacologic intervention. ACE inhibitors, ARBs, Beta-blockers and/or diuretics are suggested as first-line pharmacologic intervention if not contraindicated.***/+ > With microalbuminuria, consider ACE inhibitor or ARB. > With history of MI or LV dysfunction, initiate Beta-blocker. 	<ul style="list-style-type: none"> Measure and evaluate at each visit. Check more frequently (every two to three months) on ACE inhibitor or ARB. <p>Note: ARB may be drug of choice in patients with type 2 DM, hypertension and microalbuminuria.</p>																		
Lipid Evaluation ^{2,5,7}	<p>Preventive/Surveillance:</p> <ul style="list-style-type: none"> Adults: Annually for adults 20 years of age and over: re-evaluate following macrovascular event. Children: Lipid profile performed on children over two years old after diagnosis of diabetes and when glucose control has been established. If values are considered low-risk, repeat every two to five years, based on CVD risk. <p>Treatment:</p> <ul style="list-style-type: none"> Adults: At clinical discretion while titrating to desired or achievable end point. At steady state at least annually. Children: Follow the National Cholesterol Education Program recommendations for children and adolescents. 	<p>Goal:</p> <ul style="list-style-type: none"> Adults: <ul style="list-style-type: none"> > LDL Cholesterol: <100 mg/dL > HDL Cholesterol: <ul style="list-style-type: none"> Male: >40 mg/dL Female: >50 mg/dL > Triglycerides: <150 mg/dL If TGs >200, non-HDL cholesterol should be <130 mg/dL Children: <ul style="list-style-type: none"> > LDL Cholesterol: <110 mg/dL 	<ul style="list-style-type: none"> TLC. Blood glucose control. Weight loss if overweight. Exercise. Medical nutrition therapy – focusing on the reduction of saturated fat and cholesterol intake and fiber supplementation. Pharmaceutical agents – statins should be used as first-line therapy for lowering LDL. People with DM ≥ 40 years of age with TC ≥ 135 mg/dL consider statin therapy to achieve LDL reduction of ~30% regardless of baseline. 	<ul style="list-style-type: none"> Repeat every three months until goal is reached, then yearly. Monitor liver function per safety guidelines. Monitor CPK in patients with muscle discomfort. 																		
Women's Health ²	<ul style="list-style-type: none"> Pre-pregnancy counseling. 	<ul style="list-style-type: none"> Documentation of counseling in all potentially fertile women to include a recommendation for dilated retinal eye examination. 	<ul style="list-style-type: none"> Discuss and prescribe appropriate birth control. If pregnancy desired, achieve A1C < 1% above upper limits of normal. Counsel fertile women on medications contraindicated during pregnancy. Oral antidiabetic agents, ACE inhibitors, statins and ARBs should be discontinued before pregnancy. Note: ACE inhibitors and ARBs are contraindicated in pregnancy. 	<ul style="list-style-type: none"> If woman is fertile, review each visit. 																		
Tobacco Cessation	<ul style="list-style-type: none"> Tobacco use. 	<ul style="list-style-type: none"> Document patient's tobacco use patterns. 	<ul style="list-style-type: none"> Recommend appropriate lifestyle changes (e.g., referral to smoking cessation program, etc.). 	<ul style="list-style-type: none"> Re-evaluation each visit. 																		
Selected Preventive Health Measures ^{2,8,9,10}	<ul style="list-style-type: none"> Substance Abuse. Pneumococcal vaccination. Influenza vaccination. Aspirin therapy. Coronary Heart Disease (CHD). Weight management. 	<ul style="list-style-type: none"> Document patient's use patterns. Document each patient has had a vaccination. Document patient has a vaccination each year and document if adverse event occurs. May be omitted if previous significant adverse effect is documented. Document appropriate patients on aspirin. Abnormal ECG. Document review of high-risk indicators, such as microalbuminuria, hypertension or dyslipidemia, in patients with no prior history of a CHD event or symptoms suggesting strong family history of CHD. Calculate BMI and measure waist: <ul style="list-style-type: none"> > BMI Target: 18.5-24.9 kg/m² > Waist Target: ≤ 35 inches for females ≤ 40 inches for males 	<ul style="list-style-type: none"> Recommend appropriate lifestyle changes (e.g., and/or referral to appropriate substance abuse program.). Administer vaccination to all patients with diabetes age ≥6 months. A one-time revaccination is recommended for individuals >64 who were previously immunized when they were <65 and more than five years have elapsed. Administer vaccination to all patients with diabetes age ≥6 months beginning each September. Administer aspirin in doses of 75-162 mg a day. People <30 years of age have generally not been studied. Aspirin therapy not recommended for patients under 21. Administer appropriate cardiac testing and/or referral to cardiologist based on: <ul style="list-style-type: none"> > Severity of underlying or suspected CHD. > Sedentary lifestyle age >35 starting exercise program. > If over 55 with cardiovascular disease, consider ACE inhibitor. Start weight management and physical activity. 	<ul style="list-style-type: none"> Re-evaluation each visit. Document for each patient. Yearly. Yearly. Re-evaluation yearly. Monitor progress at each visit. 																		
Education and Counseling ²	<ul style="list-style-type: none"> All patients receive education at diagnosis of prediabetes or DM until educational goals are achieved. If control deteriorates, education is restarted. Ongoing education, as indicated. 	<ul style="list-style-type: none"> Patients receiving education by provider or referred to an education program and seen by a nurse and/or dietitian. 	<ul style="list-style-type: none"> TLC, exercise techniques, medical nutrition therapy, risk factor modification, alcohol moderation, smoking cessation, self-management training, sick-day education, avoidance of hyperosmolar states and ketoacidosis, psychosocial evaluation. 	<ul style="list-style-type: none"> If control deteriorates or a sentinel event such as hospitalization occurs, repeat education as needed Repeat FPG annually for people with prediabetes. 																		
Consider Specialty Referral ^{2,3,4}	<ul style="list-style-type: none"> Cardiology. Endocrinology. Nephrology. Podiatry. Optometry/Ophthalmology. OB/GYN. 	<ul style="list-style-type: none"> Suspected CAD or HF. Patient with advanced needs, complications, or persistent, suboptimal control. GFR < 60mL mn 1.73m² or Scr > 1.5 mg/dL. Abnormal foot exam or peripheral neuropathy. Dilated retinal exam and ophthalmologic treatment. Pregnancy in the diabetic. 	<ul style="list-style-type: none"> Testing and/or therapy as needed. Type 1 diabetes: treatment of complications, advanced technologies. Evaluation of renal function. Evaluation, treatment for prevention of foot lesions. Dilated retinal eye exam and treatment for macular edema and retinopathy. 	<ul style="list-style-type: none"> As needed by patient. As needed to achieve or maintain control, or to manage complications. As needed by patient. As needed by patient. As needed by patient. As needed by patient. 																		
Depression Screening ¹⁷	<ul style="list-style-type: none"> Screen for symptoms of depression. 	<ul style="list-style-type: none"> Document that each patient has been screened for symptoms of major depression over two weeks preceding the visit. Coordinate care with psychiatrist or psychotherapist if involved in your patient's treatment. Consider using a patient self-rating depression scale such as the Beck Depression Inventory or Zung Self-Rating Depression Scale.® 	<ul style="list-style-type: none"> Administer treatment and/or refer patients who meet criteria for depression to a behavioral specialist. Administer pharmacologic interventions as indicated. <ul style="list-style-type: none"> > SSRI's do not have the adverse cardiovascular effects commonly seen with tricyclic antidepressants. 	<ul style="list-style-type: none"> Screening is suggested at subsequent visits. Evaluate response to depression treatment with three follow-up contacts in 12 weeks and adjust meds as indicated and/or confer with appropriate treating mental health specialists. 																		

ACTION	FREQUENCY
SCREENING FOR DIAGNOSIS OF DM	ANNUALLY FOR HIGH-RISK, EVERY THREE YEARS IF NORMAL
MONITORING GLUCOSE CONTROL	EVERY THREE MONTHS UNTIL GOAL IS REACHED, EVERY SIX MONTHS IF GOAL IS MET
NEUROPATHY	SENSORY EXAMINATION ANNUALLY, FOOT INSPECTION EACH VISIT
RETINOPATHY	AT LEAST ANNUALLY UNLESS OTHERWISE ADVISED BY EYE-CARE PROFESSIONAL
NEPHROPATHY	AT LEAST ANNUALLY
BLOOD PRESSURE	EACH VISIT
LIPID EVALUATION	AT LEAST ANNUALLY
FLU AND PNEUMONIA VACCINE	ANNUALLY/INITIALLY
SMOKING CESSATION COUNSELING	EACH VISIT
DEPRESSION SCREENING	AT LEAST ANNUALLY



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- American Diabetes Association: Screening for Diabetes. *Diabetes Care* 27 (Suppl.1) S11-S14, 2004.
- American Diabetes Association: Standards of Medical Care for Patients with Diabetes. *Diabetes Care* 27 (Suppl. 1), 2004: S15-S35.
- American Diabetes Association: Preventive Foot Care in People with Diabetes (Position Statement). *Diabetes Care* 27(Suppl. 1), 2004.
- American Diabetes Association: Diabetic Nephropathy (Position Statement). *Diabetes Care* 27 (Suppl. 1), 2004: S79-S83.
- American Diabetes Association: Management of Dyslipidemia in Adults with Diabetes. *Diabetes Care* 27 (Suppl. 1), 2004: S68-S71.
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- Heart Protection Study of cholesterol lowering with simvastatin in 20,536 high-risk individuals: a randomized placebo-controlled trial. *Lancet*. July 6, 2002. Vol 360, 7-22.
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- American Diabetes Association: Immunization and the Prevention of Influenza and Pneumococcal Disease in People with Diabetes (Position Statement). *Diabetes Care* 27 (Suppl. 1), 2004: S111-S113.
- American Diabetes Association: Diabetic Retinopathy (Position Statement). *Diabetes Care* 27(Suppl. 1), 2004: S84-S87.
- UK Prospective Diabetes Study Group. Intensive blood-glucose control with sulfonylureas or insulin compared with conventional treatment and risk of complications in patients with type 2 diabetes (UKPDS 33). *Lancet*. 1998; 352: 837-853.
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- American Diabetes Association: Treatment of Hypertension in Adults with Diabetes. *Diabetes Care* 27(Suppl.1), 2004: S65-S67.
- Heart Outcomes Prevention Evaluation Study. *NEJM*, vol. 342:145-153, (January 20, 2000).
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- U.S. Preventive Services Task Force. Guide to Clinical Preventive Services. Depression. Third Edition, 2000-2003.

This guide does not intend to address all issues that the treating physician may find relevant and appropriate for the care of a particular patient. We encourage physicians to discuss the most appropriate treatment plan with each patient.



Care Guide for *Diabetes*

These guidelines are intended as an educational reference and do not supercede the clinical judgment of the treating physician with respect to appropriate and necessary care for a particular patient. The clinical references from which these guidelines are taken are listed at the end of this document.