



Management of Diabetes Mellitus

The following guideline applies to patients with type 1 and type 2 diabetes mellitus. It recommends specific interventions for periodic medical assessment, laboratory tests and education to guide effective patient self-management.

Eligible Population	Key Components	Recommendation and Level of Evidence	Frequency
Patients 18-75 years of age with type 1 or type 2 diabetes mellitus	Periodic assessment	<p>Assessment should include:</p> <ul style="list-style-type: none"> Height, weight, BMI, blood pressure [A] Assess cardiovascular risks (tobacco use, hypertension, dyslipidemia, sedentary lifestyle, obesity, stress, family history, age > 40) Comprehensive foot exam (visual, monofilament, and pulses) [B] Screen for depression [D] Dilated eye exam by ophthalmologist or optometrist TBI, or if no prior retinopathy, may screen with fundal photography TBI 	<ul style="list-style-type: none"> ◆ Perform periodic assessment at least annually ◆ Record BP at every visit ◆ In the absence of retinopathy repeat retinal eye exam in 2 years ◆ A1C every 3-6 months based on individual therapeutic goal; other tests annually
	Laboratory tests	<p>Tests should include:</p> <ul style="list-style-type: none"> A1C [D] Urine microalbumin measurement [B] (unless already on ACE or ARB) Serum creatinine and calculated GFR [D] Lipid profile [B], preferably fasting Consider TSH and LFTs [D] 	
	Education, counseling and risk factor modification	<p>Comprehensive diabetes self-management education and support (DSME and DSMS) from a collaborative team or diabetic educator if available</p> <p>Education should be individualized, based on the National Standards for DSME and include:</p> <ul style="list-style-type: none"> - Importance of regular physical activity including interrupting sedentary periods at least every 90 minutes with physical activity, and a healthy diet [A], and working towards an appropriate BMI - Assessment of patient knowledge, attitudes, self-management skills and health status; strategies for making health behavior changes and addressing psychosocial concerns [C] - Description of diabetes disease process and treatment: safe and effective use of medications; prevention, detection and treatment of acute and chronic complications, including prevention and recognition of hypoglycemia - Role of self-monitoring of blood glucose in glycemic control [A] - Cardiovascular risk reduction - Tobacco cessation intervention² [B] and secondhand smoke avoidance [C] - Self-care of feet including nail and skin care and appropriate footwear [B]; preconception counseling [D]; encourage patients to receive dental care [D] 	At diagnosis and as needed
Medical recommendations	<p>Care should focus on tobacco cessation, hypertension, lipids and glycemic control:</p> <ul style="list-style-type: none"> - Medications for tobacco dependence unless contraindicated - Treatment of hypertension using up to 3-4 anti-hypertensive medications to achieve adult target of 140/90 mmHg [A] (see <i>MQIC hypertension guideline</i>). Mortality increases if diastolic is < 70. - Prescription of ACE inhibitor or angiotensin receptor blocker in patients with chronic kidney disease or albuminuria [A]³ - Moderate intensity statin^{4,5} therapy for primary prevention against macrovascular complications (e.g. simvastatin 20-40 mg, atorvastatin 10-20 mg) - For patients with overt CVD, high intensity statin (e.g. atorvastatin 40-80 mg) - Anti-platelet therapy [A]: low dose aspirin for adults with cardiovascular disease unless contraindicated. - Individualize the A1C goal⁶. Goal for most patients is 7-8%. Mortality increases when A1C is > 9% [B]. - Assurance of appropriate immunization status [Tdap or Td, influenza, pneumococcal vaccine (PCV13 and PPSV23), Hep B] [C] 	At each visit until therapeutic goals are achieved	

¹ National Standards for Diabetes Self-Management Education and Support

² There is no evidence that e-cigarettes are a healthier alternative to smoking or that e-cigarettes can facilitate smoking cessation

³ Consider referral of patients with serum creatinine value > 2.0 mg/dl (adult value) or persistent albuminuria to nephrologist for evaluation

⁴ Diabetes Care, January 2015, Cardiovascular Disease and Risk Management

⁵ 2013 ACC/AHA Blood Cholesterol Guideline Table 5. High-, Moderate-, and Low-Intensity Statin Therapy

⁶ Diabetes Care, Volume 38 Supplement 1, January 2015, S37 Table 5.2

Levels of evidence for the most significant recommendations: A = randomized controlled trials; B = controlled trials, no randomization; C = observational studies; D = opinion of expert panel

This guideline lists core management steps. It is based on the American Diabetes Association Standards of Medical Care in Diabetes - 2015; Volume 38, Supplement 1, Pages S1-S93 (<http://care.diabetesjournals.org>). Individual patient consideration; medical science may supersede or modify these recommendations.

Approved by MQIC Medical Directors June 2008, 2010, 2012, 2013, 2014, 2015

Adopted by UPHP CAC 3-10-2009; Approved 12-8-2010, 9-12-2012, 6-12-2013, 9-10-2014, 9-9-2015