

DIABETES INSIGHTS & OUTCOMES

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2008 Update

ADA Clinical Practice Recommendations

The latest evidence-based clinical practice recommendations from the American Diabetes Association (ADA) have been published. Here's a roundup of the ADA's advice.

Testing. Consider diabetes testing for adults of any age who are overweight or obese (BMI 25 kg/m₂ or higher) and have one or more additional diabetes risk factors. Otherwise, begin testing at age 45. As in earlier guidelines, the preferred test is a fasting plasma glucose test and/or a two-hour oral glucose tolerance test, not a hemoglobin A1c.

Prevention of diabetes. Patients with impaired fasting glucose or impaired glucose tolerance should be counseled to lose 5 to 10 percent of body weight and engage in moderate activity for at least 150 minutes per week. The ADA now explicitly recommends considering metformin therapy for very high-risk patients younger than age 60 who are obese. "Very high risk" is defined as having impaired fasting glucose, impaired glucose tolerance, and one or more additional risk factors.

Glycemic goals. The hemoglobin A1c goal for nonpregnant adults is lower than 7 percent. However, because further decreases in A1c appear to confer additional benefit, the goal for selected patients is "as close to normal (lower than 6 percent) as possible without significant hypoglycemia."

Blood pressure management. The blood pressure goal in patients with diabetes is lower than 130/80 mm Hg. If response to three months of lifestyle therapy is insufficient, either an angiotensin-converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB) is recommended as first-line therapy, with a thiazide diuretic (if the glomerular filtration rate [GFR] is higher than or equal to 50 ml/min per 1.73 m₂) or loop diuretic (if GFR is lower than 50 ml/min per 1.73 m₂) added if needed. Kidney function and serum potassium should be closely monitored in those receiving an ACE inhibitor or ARB.

Dyslipidemia. Lipid goals are low-density lipoprotein (LDL) cholesterol lower than 100 mg/dl (lower than 70 mg/dl in those with cardiovascular disease), triglycerides lower than 150 mg/dl, and high-density lipoprotein (HDL) cholesterol higher than 40 mg/dl in men and higher than 50 mg/dl in women. Lifestyle modification should focus on reducing saturated and trans fat and cholesterol, weight loss, and increased physical activity. Statins are the drugs of choice for treating elevated LDL cholesterol. A statin drug plus lifestyle therapy

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Cardiovascular Risk in Younger Patients

While there's no doubt that individuals with diabetes have an increased risk for cardiovascular disease (CVD), the extent of the risk for younger patients is unclear. A large epidemiological study (T.K. Schramm et al., *Circulation*, 2008) reports that diabetic individuals as young as age 30 have as high a risk for myocardial infarction (MI), stroke, and death from CVD as nondiabetic individuals who have already had an MI. The study of 3.3 million people ages 30 and older in Denmark included 71,801 individuals with diabetes and 79,575 nondiabetic individuals with a prior MI. Both groups had more than a two-fold increased risk for CVD compared to healthy individuals, regardless of sex or type of diabetes.

The researchers suggest aggressive intervention against CVD—such as aspirin, therapy to lower cholesterol, and angiotensin-converting enzyme inhibitors—should be considered for all patients receiving glucose-lowering therapy, including younger patients. They note that studies in the Framingham population found that diabetes duration impacted coronary mortality independently of other risk factors. Currently, American Diabetes Association guidelines recommend statin therapy for patients younger than age 40 only if they have overt CVD, multiple CVD risk factors, or low-density lipoprotein cholesterol above 100 mg/dl.

NEPHROPATHY

Better Screening, More Timely Referral

As the incidence of diabetes has climbed, so has the rate of diabetic nephropathy: Diabetes patients account for about half of all cases of chronic kidney disease (CKD). Yet, CKD often goes undiagnosed. More than 80 percent of Medicare patients with diabetes are not screened annually for kidney disease. Considering how easy screening is, that's a statistic that we can change. Early treatment of CKD can prevent or delay end-stage renal disease.

How often should I screen diabetes patients for CKD?

Annually, according to the National Kidney Disease Education Program (NKDEP) and the American Diabetes Association (ADA).

How should I screen for CKD?

With these two measures:

- Estimated glomerular filtration rate (eGFR), derived by applying serum creatinine to a prediction equation (see below)
- Spot urine albumin to creatinine ratio or standard dipstick albumin to assess proteinuria

While a dipstick proteinuria test has been widely accepted for screening, 20 percent of diabetes patients have severely impaired renal function without proteinuria. Neither is serum creatinine sufficient, particularly in people older than age 65 who have decreased muscle mass. The ADA and NKDEP agree that glomerular filtration rate is a better indicator than serum creatinine. But 24-hour urine collections are not necessary. Increasingly, laboratories provide a calculated GFR (order it separately) based on serum creatinine, which correlates well with direct measures. If your laboratory doesn't offer this,



a simple calculator can be accessed online or downloaded to your PDA (www.nkdep.nih.gov).

When should I initiate a nephrology referral?

- Patients with CKD are often referred to a nephrologist too late to slow disease progression. This is especially likely to occur in African-American men.
- When feasible, get a nephrologist's opinion early in the disease process.
 - Consider referring to a physician with experience managing diabetic renal disease when the GRF is below 60 ml/min/1.73 m² or if difficult management issues arise.
 - When a patient's GFR is 30 ml/min/1.73 m² or lower, it's time to team with a nephrologist.

What about other referrals?

Patients with CKD can benefit from dietary counseling to restrict protein intake and improve glycemic control. Medical nutrition therapy for CKD is covered by Medicare.

Through consistent screening and earlier referral, health care providers can greatly improve our care of patients with CKD.



<http://care.diabetesjournals.org>
Diabetes Care

www.nkdep.nih.gov
National Kidney Disease
Education Program

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SICK DAY RX Managing Diabetes During Illness

Cold and flu season is on its way. For diabetes patients, the stress of illness and infections reduces the effectiveness of insulin and raises levels of glucagon, catecholamines, and cortisol. This makes glycemic control more difficult and can lead to serious complications such as diabetic ketoacidosis (DKA) and hyperosmolar hyperglycemic state. The elderly, who are more likely to be both dehydrated and unaware of hyperglycemia, are especially at risk. To see your patients with diabetes safely through the season, keep the following points in mind.

Monitoring. During illness, patients need to monitor glucose more frequently, perhaps four times a day for those who don’t use insulin and at least every four hours for those who do. When glucose is elevated above 300 mg/dl, patients with type 1 diabetes also need to monitor ketones.

Medication. Patients who don’t use insulin may need to use it during illness. Patients who already use insulin may need extra. As the patient recovers, the insulin dose can be gradually reduced.

Food and fluids. If mild foods aren’t tolerated, patients should consume caloric liquids, aiming for 50 grams of carbohydrate every three to four hours.

If fluids aren’t tolerated, the patient can’t be managed at home.

Review sick-day plan. Put together a sick-day plan with patients at the earliest opportunity and review it periodically. Key points to address include:

- Blood glucose goals
- How often to monitor blood glucose and when to monitor ketones
- Adequate fluid intake
- Meal plan, including sick-day foods (such as applesauce, crackers, toast, cereal, fruit-flavored yogurt, and pudding) and liquids that provide adequate carbohydrate and sodium if food is not tolerated (such as milk, juice, Gatorade, soup, regular soft drinks, and Popsicles)
- Use of insulin, including short-acting insulin. Discontinuing insulin during illness is a common precipitant of DKA, so it’s especially important to advise insulin-using patients against this.
- Sugar-free OTC medications to use for symptom relief
- When to call you

Encourage patients to be prepared before they become ill by keeping monitoring supplies, insulin, and sick-day foods on hand. With a little preparation and effective communication, your patients can weather their next illness without a crisis.

2008 Update: ADA Clinical Practice Recommendations

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is recommended for patients with overt cardiovascular disease (CVD) and patients older than age 40 with CVD risk factors. A statin drug should also be considered for lower-risk patients whose LDL remains above 100 mg/dL despite lifestyle therapy.

Energy balance. The ADA weighs in on the best approach to weight loss, concluding that either a low-carbohydrate diet or low-fat, low-calorie diet can be effective in the short term. For maintaining weight loss, both physical activity and behavioral modification are important.

Additional measures. The following screenings, tests, and procedures are recommended for adults with diabetes:

- Hemoglobin A1c measurement twice a year in patients who meet treatment goals or are stable and quarterly in others
- Annual fasting lipid profile
- Blood pressure measurement at every routine diabetes visit
- Annual evaluation of coronary heart disease risk factors and stratification of patients by 10-year risk
- Annual renal screening (urine albumin, serum creatinine, and estimated GFR based on serum creatinine)
- Annual dilated and comprehensive eye examination (Following one or more normal exams, the exam interval can be increased to every two to three years.)
- Annual comprehensive foot exam (visual examination,

palpation, and use of a monofilament and tuning fork)

- Screening for distal symmetric polyneuropathy (annually) and autonomic neuropathy
- Screening for peripheral arterial disease, beginning at diagnosis (Obtain a history for claudication, assess pedal pulses, and determine the ankle-brachial index.)
- Annual influenza vaccination and at least one lifetime pneumococcal vaccination
- Individualized screening for complications in older adults, with special attention on complications that affect functional impairment

The guidelines address other issues, including gestational diabetes, management of hypoglycemia, hypertension, and dyslipidemia; antiplatelet agents; treatment of complications; assessment of psychosocial issues; and medical nutrition therapy. To view the full guidelines, visit <http://care.diabetesjournals.org> and click on “Clinical Practice Recommendations.”

