

Lessons in Care: Insights Into Recent Changes in the American Diabetes Association's Clinical Practice Recommendations

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In January, the American Diabetes Association (ADA) published the *Standards of Medical Care in Diabetes—2017* (1), its comprehensive evidence-based clinical practice recommendations for the care of people with or at risk for diabetes. The Standards are updated annually by the ADA's Professional Practice Committee (available at http://care.diabetesjournals.org/content/40/Supplement_1) based on the latest clinical research and are funded from the ADA's general fund without industry support. In addition, the ADA publishes occasional position statements on a range of diabetes-related topics, most recently neuropathy (2), hypoglycemia (3), and physical activity (4). Following are some highlights from the ADA's 2017 Standards and from recent position statements, tailor-made for busy point-of-care providers.

2017 Standards Highlights

Tap Into Community Resources

The latest Standards include new recommendations aimed at reducing health disparities stemming from discrimination, racism, socioeconomic status, lack of health care access, and language barriers, among other factors, by encouraging providers to refer patients to community resources. Furthermore, ADA makes the assertion, based on high-quality evidence for benefit, that patients should be provided self-management support from lay health coaches, navigators, or community health workers.

More Candidates for Metabolic Surgery

Obesity management is a treatment for type 2 diabetes, and the specific approach—lifestyle, pharmacologic, or metabolic surgery—should be individualized according to a patient's characteristics and preferences. A big change for 2017 was the expansion of the pool of patients for which metabolic surgery is an appropriate treatment. Based on the findings of an international workgroup report, ADA now suggests metabolic surgery for:

- Appropriate surgical candidates with type 2 diabetes and a BMI ≥ 40 kg/m², or ≥ 37.5 kg/m² in Asian Americans, *regardless of glycemic control.*
- Appropriate surgical candidates with type 2 diabetes, suboptimal glycemic control, and a BMI as low as 30.0 kg/m², or 27.5 kg/m² in Asian Americans.

Better Glucose-Lowering Agents for Patients With Cardiovascular Disease

Strong new evidence emerged in 2016 that, for patients with type 2 diabetes and overt cardiovascular disease, empagliflozin or liraglutide lowers the risk of death. Therefore, the 2017 Standards includes a new recommendation that these medications be considered in that specific patient population. More research is needed to see whether other agents in the same classes (sodium–glucose cotransporter 2 inhibitors and glucagon-like peptide 1 [GLP-1] receptor agonists)

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TABLE 1. Recommended Screening Criteria for Psychosocial/Emotional Disorders in People With Diabetes

Condition	Screening Criteria
Anxiety disorders	<ul style="list-style-type: none"> • Patient exhibiting anxiety regarding diabetes complications, insulin injections, medications, or hypoglycemia that affects self-management • Patient expressing fear, dread, or irrational thoughts • Patient showing anxiety symptoms (i.e., social withdrawal)
Depression	<ul style="list-style-type: none"> • Screen annually, especially in those with history or symptoms of depression • Screen at the beginning at diagnosis of complications or change in medical status
Disordered eating behavior	<ul style="list-style-type: none"> • Hyperglycemia and weight loss are unexplained based on self-reported behaviors
Serious mental illness	<ul style="list-style-type: none"> • Screen for prediabetes and diabetes annually in people prescribed atypical antipsychotics

TABLE 2. Situations That Warrant Referral of a Person With Diabetes to a Mental Health Provider for Evaluation and Treatment

• If self-care remains impaired in a person with diabetes distress after tailored diabetes education
• If a person has a positive screen on a validated screening tool for depressive symptoms
• In the presence of symptoms or suspicions of disordered eating behavior, an eating disorder, or disrupted patterns of eating
• If intentional omission of insulin or oral medication to cause weight loss is identified
• If a person has a positive screen for anxiety or fear of hypoglycemia
• If a serious mental illness is suspected
• In youth and families with behavioral self-care difficulties, repeated hospitalizations for diabetic ketoacidosis, or significant distress
• If a person screens positive for cognitive impairment
• Declining or impaired ability to perform diabetes self-care behaviors
• Before undergoing bariatric or metabolic surgery and after surgery if assessment reveals an ongoing need for adjustment support

also have this benefit or whether people at lower cardiovascular risk would similarly benefit from these agents.

Assess and Refer for Mental Health Issues

Psychological disorders, including anxiety disorders, depression, disordered eating behavior, and serious mental illness, are more common in people with diabetes than those without diabetes. Furthermore, symptoms of psychological conditions can compromise diabetes self-management and must be addressed. To tackle this critical issue and provide additional guidance, the Standards now include psychosocial disorders in their expanded list of common comorbidities of diabetes. Screening, using validated and age-appropriate measures, is recommended using the criteria shown in Table 1.

After a patient screens positive in a mental health assessment, the question becomes, what next? The Standards provides a list of situations that warrant referral to a mental health provider, preferably one with experience in diabetes who will work in conjunction with the patient's diabetes treatment team (Table 2).

First-Line Treatment Options for Hypertension Expanded

- Any of four drug classes—ACE inhibitors, angiotensin II receptor blockers (ARBs), thiazide-like diuretics, or dihydropyridine calcium channel blockers—shown to lower the risk of cardiovascular events may be used as first-line agents to treat hypertension (blood pressure >140/90 mmHg) *in people with diabetes who don't have albuminuria (urinary albu-*

min-to-creatinine ratio ≥ 30 mg/g creatinine).

- Patients with albuminuria and hypertension should be prescribed an ACE inhibitor or ARB.
- If a patient has a blood pressure >160/100 mmHg, starting with two antihypertension medications—either as two pills or as a single-pill combination therapy—is recommended.

Consider the Cost to the Patient

The 2017 Standards section on pharmacologic approaches to glycemic treatment includes two new tables (6) that provide a comparison of medication list prices with the primary goal of highlighting the importance of cost considerations when prescribing antihyperglycemic treatments.

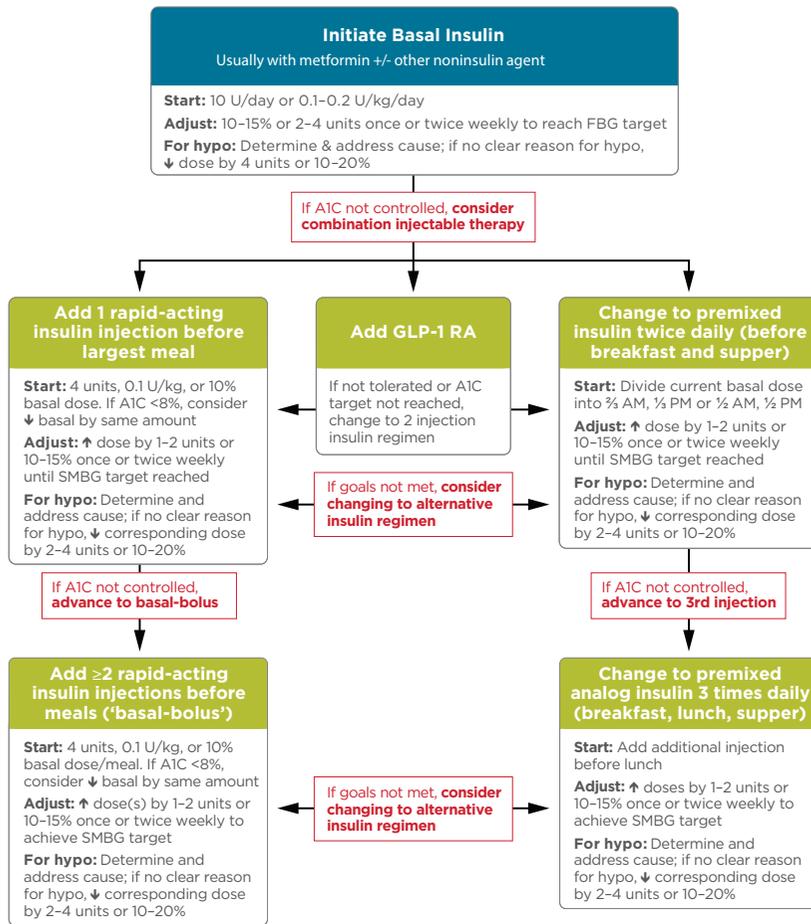


FIGURE 1. Combination injectable therapy for type 2 diabetes. FBG, fasting blood glucose; GLP-1 RA, GLP-1 receptor agonist; hypo, hypoglycemia; SMBG, self-monitoring of blood glucose. Adapted with permission from Inzucchi et al. (5).

Metformin Linked to B12 Deficiency

A new study prompted the addition of a recommendation to consider the periodic measurement of vitamin B12 levels in patients taking metformin long term due to an elevated risk for deficiency.

Additional Insulin Treatment Pathways for Type 2 Diabetes

A new insulin treatment algorithm (Figure 1) was unveiled in 2017 that gives providers and patients more options in terms of treatment strategy.

- As before, start with basal insulin, with or without other agents.
- If the A1C target is not reached after optimally titrating basal insulin, proceed with any of three similarly effective intensification strategies:

- Add a rapid-acting insulin injection before largest meal
- Add a GLP-1 receptor agonist
- Change to premixed insulin twice daily (before breakfast and supper).
- If goals are not met, additional insulin injections (basal-bolus or three times daily premixed insulin) may be added or an alternative insulin regimen of the same intensity may be considered (e.g., switching from premixed insulin to a basal-bolus insulin regimen).

Position Statement Highlights

Neuropathy Statement

Effective Treatments for Pain
There are effective ways to treat neuropathic pain, and this position statement (1) makes a major contri-

bution in clarifying recommendations for pain management. Pregabalin or duloxetine are recommended as the initial approach to the treatment of neuropathic pain, whereas gabapentin and cyclic antidepressants may also be considered, although each has drawbacks. Tapentadol ER, a long-acting opioid analgesic, is approved by the U.S. Food and Drug Administration for the treatment of neuropathic pain; however, there is a high risk for addiction and safety concerns, so this medication is not generally recommended as a first- or second-line treatment.

Physical Activity/Exercise Statement

Vigorous Exercise Gets Nod
The core recommendations for adults with diabetes remain unchanged—150 minutes of physical activity spread over 3 or more days, with no more than 2 consecutive days without activity—but the details have changed. Whereas in previous years “moderate-intensity” exercise was recommended, ADA has now opened the door to “moderate-to-vigorous” intensity activity. Furthermore, younger or more physically fit individuals may, instead of 150 min/week, exercise for 75 min/week at a vigorous intensity.

Standing Up for Blood Glucose Benefits

Whereas previously the ADA recommended breaking up sedentary activity every 90 minutes, new evidence for blood glucose benefits prompted a change to this recommendation, which now says that prolonged sitting should be interrupted every 30 minutes.

Finding Balance in Older Adults

The position statement provides new guidance on the types of physical activity that are particularly beneficial for older adults, who are at increased risk of developing functional limitations. Flexibility and balance training, particularly yoga and tai chi, are recommended for older adults 2–3 times weekly.

TABLE 3. Classification of Hypoglycemia

Level	Glycemic Criteria	Description
Glucose alert value (level 1)	≤70 mg/dL (3.9 mmol/L)	Sufficiently low for treatment with fast-acting carbohydrate and dose adjustment of glucose-lowering therapy
Clinically significant hypoglycemia (level 2)	<54 mg/dL (3.0 mmol/L)	Sufficiently low to indicate serious, clinically important hypoglycemia
Severe hypoglycemia (level 3)	No specific glucose threshold	Hypoglycemia associated with severe cognitive impairment requiring external assistance for recovery

Hypoglycemia Statement

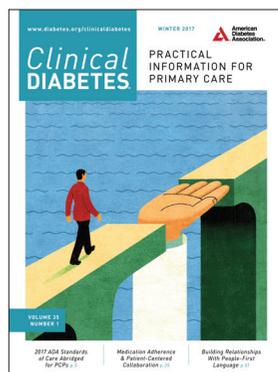
New Definitions

Although the ADA's definition of hypoglycemia has changed (Table 3) (2), characterizing blood glucose levels <54 mg/dL as "clinically significant hypoglycemia" mainly for the purposes of clinical research, the message to patients remains the same: a blood glucose ≤70 mg/dL is sufficiently low for treatment with a fast-acting carbohydrate. For providers, if a patient reports a blood glucose level ≤70 mg/dL,

dose adjustment may be warranted as well.

References

- American Diabetes Association. *Standards of Medical Care in Diabetes—2017*. *Diabetes Care* 2017;40(Suppl. 1):S1–S135
- Pop-Busui R, Boulton AJM, Feldman EL, et al. Diabetic neuropathy: a position statement by the American Diabetes Association. *Diabetes Care* 2017;40:136–154
- International Hypoglycaemia Study Group. Glucose concentrations of less than 3.0 mmol/L (54 mg/dL) should be reported in clinical trials: a joint position statement of the American Diabetes Association and the European Association for the Study of Diabetes. *Diabetes Care* 2017;40:155–157
- Colberg, SR, Sigal RJ, Yardley JE, et al. Physical activity/exercise and diabetes: a position statement of the American Diabetes Association. *Diabetes Care* 2016;39:2065–2079
- Inzucchi SE, Bergenstal RM, Buse JB, et al. Management of hyperglycemia in type 2 diabetes, 2015: a patient-centered approach: update to a position statement of the American Diabetes Association and the European Association for the Study of Diabetes. *Diabetes Care* 2015;38:140–149
- American Diabetes Association. Pharmacologic approaches to glycemic treatment. Sec. 8. In *Standards of Medical Care in Diabetes—2017*. *Diabetes Care* 2017;40(Suppl. 1):S64–S74



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