Update on the 2020 Standards of Medical Care in Diabetes

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 Presenter Disclosure Information

In compliance with the accrediting board policies, the American Diabetes Association requires the following disclosure to the participants:

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Research Support: None
Employee: None
Board Member/Advisory Panel: None
Stock/Shareholder: None
Consultant: None
Other: Member, ADA Professional Practice Committee
Learning Objectives

This presentation will cover the following learning objectives:

1. Discuss key changes and updates to the 2020 ADA Standards of Medical Care in Diabetes; and

2. Recognize patient- and medication-specific factors to consider when selecting treatment strategies for patients with diabetes.
Standards of Medical Care in Diabetes—2020
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Improving Care and Promoting Health in Populations

- Additional information was added on the rising cost of medications – particularly insulin
- A new section “Migrant and Seasonal Agricultural Workers” was added
Migrant and Seasonal Agricultural Workers

• “Migrant and Seasonal Agricultural Workers”
  • Numerous overlapping barriers to care:
    • Migration disrupts continuity of care
    • Multiple factors prevent effective access to health care:
      • Cultural and linguistic barriers
      • Lack of transportation and money
      • Lack of available work hours
      • Unfamiliarity with new communities
      • Lack of access to resources
  • Advice for health care providers:
    • Consider appropriate referrals to social workers and community resources to assist with removing barriers to care
Classification and Diagnosis

• New recommendation (2.8) added regarding testing for prediabetes and/or type 2 diabetes in women planning pregnancy with overweight or obesity

• New section on “Pancreatic Diabetes or Diabetes in the Context of Disease of the Exocrine Pancreas” to describe this form of diabetes and its diverse set of etiologies

• The “Gestational Diabetes Mellitus” section was revised
  • The two-step approach for screening and diagnosing GDM no longer includes National Diabetes Data Group criteria
Prediabetes and Type 2 Diabetes

2.6 Screening for prediabetes and type 2 diabetes with an informal assessment of risk factors or validated tools should be considered in asymptomatic adults. B

2.7 Testing for prediabetes and/or type 2 diabetes in asymptomatic people should be considered in adults of any age with overweight or obesity (BMI $\geq 25 \text{ kg/m}^2$ or $\geq 23 \text{ kg/m}^2$ in Asian Americans) & who have one or more additional risk factors for diabetes (Table 2.3). B

2.8 Testing for prediabetes and/or type 2 diabetes should be considered in women planning pregnancy with overweight or obesity and/or who have one or more additional risk factor for diabetes (Table 2.3). C
# 2019 Standards of Care

## Table 2.6—Screening for and diagnosis of GDM

### One-step strategy

Perform a 75-g OGGT, with plasma glucose measurement when patient is fasting and at 1 and 2 h, at 24–28 weeks of gestation in women not previously diagnosed with diabetes.

The OGGT should be performed in the morning after an overnight fast of at least 8 h.

The diagnosis of GDM is made when any of the following plasma glucose values are met or exceeded:

- **Fasting**: 92 mg/dL (5.1 mmol/L)
- **1 h**: 180 mg/dL (10.0 mmol/L)
- **2 h**: 153 mg/dL (8.5 mmol/L)

### Two-step strategy

**Step 1**: Perform a 50-g GLT (nonfasting), with plasma glucose measurement at 1 h, at 24–28 weeks of gestation in women not previously diagnosed with diabetes.

If the plasma glucose level measured 1 h after the load is \( \geq \) 130 mg/dL, 135 mg/dL, or 140 mg/dL (7.2 mmol/L, 7.5 mmol/L, or 7.8 mmol/L, respectively), proceed to a 100-g OGGT.

**Step 2**: The 100-g OGGT should be performed when the patient is fasting.

The diagnosis of GDM is made if at least two* of the following four plasma glucose levels (measured fasting and 1 h, 2 h, 3 h during OGGT) are met or exceeded:

<table>
<thead>
<tr>
<th>Carpenter-Coustan (86)</th>
<th>or</th>
<th>NDDG (87)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fasting</strong></td>
<td>95 mg/dL (5.3 mmol/L)</td>
<td>105 mg/dL (5.8 mmol/L)</td>
</tr>
<tr>
<td><strong>1 h</strong></td>
<td>180 mg/dL (10.0 mmol/L)</td>
<td>190 mg/dL (10.6 mmol/L)</td>
</tr>
<tr>
<td><strong>2 h</strong></td>
<td>155 mg/dL (8.6 mmol/L)</td>
<td>165 mg/dL (9.2 mmol/L)</td>
</tr>
<tr>
<td><strong>3 h</strong></td>
<td>140 mg/dL (7.8 mmol/L)</td>
<td>145 mg/dL (8.0 mmol/L)</td>
</tr>
</tbody>
</table>

NDDG, National Diabetes Data Group. *ACOG notes that one elevated value can be used for diagnosis (82).
GDM diagnosis (Table 2.7) can be accomplished with either of two strategies:

1. The “one-step” 75-g OGTT derived from the IADPSG criteria or

2. The older “two-step” approach with a 50-g (nonfasting) screen followed by a 100-g OGTT for those who screen positive, based on the work of Carpenter and Coustan’s interpretation of the older O’Sullivan criteria.
### Table 2.7—Screening for and diagnosis of GDM

**One-step strategy**
Perform a 75-g OGTT, with plasma glucose measurement when patient is fasting and at 1 and 2 h, at 24–28 weeks of gestation in women not previously diagnosed with diabetes.  
The OGTT should be performed in the morning after an overnight fast of at least 8 h.  
The diagnosis of GDM is made when any of the following plasma glucose values are met or exceeded:
- Fasting: 92 mg/dL (5.1 mmol/L)
- 1 h: 180 mg/dL (10.0 mmol/L)
- 2 h: 153 mg/dL (8.5 mmol/L)

**Two-step strategy**

**Step 1:** Perform a 50-g GLT (nonfasting), with plasma glucose measurement at 1 h, at 24–28 weeks of gestation in women not previously diagnosed with diabetes.

If the plasma glucose level measured 1 h after the load is ≥130, 135, or 140 mg/dL (7.2, 7.5, or 7.8 mmol/L, respectively), proceed to a 100-g OGTT.

**Step 2:** The 100-g OGTT should be performed when the patient is fasting.

The diagnosis of GDM is made when at least two* of the following four plasma glucose levels (measured fasting and at 1, 2, and 3 h during OGTT) are met or exceeded (Carpenter-Coustan criteria [154]):
- Fasting: 95 mg/dL (5.3 mmol/L)
- 1 h: 180 mg/dL (10.0 mmol/L)
- 2 h: 155 mg/dL (8.6 mmol/L)
- 3 h: 140 mg/dL (7.8 mmol/L)

GDM, gestational diabetes mellitus; GLT, glucose load test; OGTT, oral glucose tolerance test.

*American College of Obstetricians and Gynecologists notes that one elevated value can be used for diagnosis (150).
Prevention or Delay of Type 2 Diabetes

• Based on the new consensus report, “Nutrition Therapy for Adults with Diabetes or Prediabetes: A Consensus Report,” the “Nutrition” section was updated
  • New Recommendation (3.3) added to recognize that a variety of eating patterns are acceptable for people with prediabetes

• Additional resources and information were added on the NDPP, Medicare Diabetes Prevention Program, Medicare Diabetes Prevention Programs, and the CDC Diabetes Prevention Impact Tool Kit
Lifestyle Interventions

3.2 Refer patients with prediabetes to an intensive behavioral lifestyle intervention program modeled on the Diabetes Prevention Program (DPP) to achieve and maintain 7% loss of initial body weight and increase moderate intensity physical activity (such as brisk walking) to at least 150 min/week. A

3.3 A variety of eating patterns are acceptable for persons with prediabetes. B
Comprehensive Medical Evaluation and Assessment of Comorbidities

• The autoimmune disease recommendation was modified to split out autoimmune thyroid disease and celiac disease
• The title of the hearing impairment section was changed to “Sensory Impairment,” and information as added on impairment of smell
• The section “Psychosocial/Emotional Disorders” was moved from Section 4 to Section 5
  • Includes: anxiety disorders, depression, disordered eating behavior, and serious mental illness
Autoimmune Diseases

4.12 Patients with type 1 diabetes should be screened for autoimmune thyroid disease soon after diagnosis and periodically thereafter. B

4.13 Adult patients with type 1 diabetes should be screened for celiac disease in the presence of gastrointestinal symptoms, signs, or laboratory manifestations suggestive of celiac disease. B
COMPREHENSIVE MEDICAL EVALUATION AND ASSESSMENT OF COMORBIDITIES

DEcision Cycle for Patient-Centered Glycemic Management in Type 2 Diabetes

GOALS OF CARE
- Prevent complications
- Optimize quality of life

REVIEW AND AGREE ON MANAGEMENT PLAN
- Review management plan
- Mutual agreement on changes
- Ensure agreed modiﬁcation of therapy is implemented in a timely fashion to avoid clinical inertia
- Decision cycle undertaken regularly (at least once/twice a year)

ASSESS KEY PATIENT CHARACTERISTICS
- Current lifestyle
- Comorbidities, i.e., ASCVD, CKD, HF
- Clinical characteristics, i.e., age, HbA1c, weight
- Issues such as motivation and depression
- Cultural and socioeconomic context

ONGOING MONITORING AND SUPPORT INCLUDING:
- Emotional well-being
- Check tolerability of medication
- Monitor glycemic status
- Biofeedback including SMBG, weight, step count, HbA1c, blood pressure, lipids

IMPLEMENT MANAGEMENT PLAN
- Patients not meeting goals generally should be seen at least every 3 months as long as progress is being made; more frequent contact initially is often desirable for DSMES

AGREE ON MANAGEMENT PLAN
- Specify SMART goals:
  - Specific
  - Measurable
  - Achievable
  - Realistic
  - Time limited

CONSIDER SPECIFIC FACTORS THAT IMPACT CHOICE OF TREATMENT
- Individualized HbA1c target
- Impact on weight and hypoglycemia
- Side effect proﬁle of medication
- Complexity of regimen, i.e., frequency, mode of administration
- Choose regimen to optimize adherence and persistence
- Access, cost, and availability of medication

SHARED DECISION MAKING TO CREATE A MANAGEMENT PLAN
- Involves an educated and informed patient (and their family/caregiver)
- Seeks patient preferences
- Effective consultation includes motivational interviewing, goal setting, and shared decision making
- Empowers the patient
- Ensures access to DSMES

SCOVD = Atherosclerotic Cardiovascular Disease
CKD = Chronic Kidney Disease
HF = Heart Failure
DSMES = Diabetes Self-Management Education and Support
SMBG = Self-Monitored Blood Glucose
Facilitating Behavior Change and Well-being to Improve Health Outcomes

• Title change from previous title of “Lifestyle Management”
• The section “Nutrition Therapy” was updated to include guidance and evidence from “Nutrition Therapy for Adults With Diabetes or Prediabetes: A Consensus Report”
• Strengthened recommendations on avoiding use of e-cigarettes
• Section on “Psychosocial Issues” moved here from Section 4
Medical Nutrition Therapy

<table>
<thead>
<tr>
<th>Topic</th>
<th>Recommendation</th>
<th>Evidence rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effectiveness of nutrition therapy</td>
<td>An individualized medical nutrition therapy program as needed to achieve treatment goals, provided by a registered dietitian nutritionist (RD/RDN), preferably one who has comprehensive knowledge and experience in diabetes care, is recommended for all people with type 1 or type 2 diabetes, prediabetes, and gestational diabetes mellitus.</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>Because diabetes medical nutrition therapy can result in cost savings B and improved outcomes (e.g., A1C reduction, reduced weight, decrease in cholesterol) A, medical nutrition therapy should be adequately reimbursed by insurance and other payers. E</td>
<td>B, A, E</td>
</tr>
<tr>
<td>Energy balance</td>
<td>For all patients with overweight or obesity, lifestyle modification to achieve and maintain a minimum weight loss of 5% is recommended for all patients with diabetes and prediabetes.</td>
<td>A</td>
</tr>
<tr>
<td>Eating patterns and macronutrient distribution</td>
<td>There is no single ideal dietary distribution of calories among carbohydrates, fats, and proteins for people with diabetes; therefore, meal plans should be individualized while keeping total calorie and metabolic goals in mind.</td>
<td>E</td>
</tr>
<tr>
<td></td>
<td>A variety of eating patterns are acceptable for the management of type 2 diabetes and prediabetes.</td>
<td>B</td>
</tr>
</tbody>
</table>

Facilitating Behavior Change and Well-being to Improve Health Outcomes: Standards of Medical Care in Diabetes - 2020. Diabetes Care 2020;43(Suppl. 1):S48-S65
Medical Nutrition Therapy (continued)

| Carbohydrates | 5.11 Carbohydrate intake should emphasize nutrient-dense carbohydrate sources that are high in fiber and minimally processed. Eating plans should emphasize nonstarchy vegetables, minimal added sugars, fruits, whole grains, as well as dairy products. | B |
| 5.12 Reducing overall carbohydrate intake for individuals with diabetes has demonstrated the most evidence for improving glycemia and may be applied in a variety of eating patterns that meet individual needs and preferences. | B |
| 5.13 For people with diabetes who are prescribed a flexible insulin therapy program, education on how to use carbohydrate counting A and on dosing for fat and protein content B should be used to determine mealtime insulin dosing. | A, B |
| 5.14 For adults using fixed insulin doses, consistent pattern of carbohydrate intake with respect to time and amount, while considering the insulin action time, can result in improved glycemia and reduce the risk for hypoglycemia. | B |
| 5.15 People with diabetes and those at risk are advised to replace sugar-sweetened beverages (including fruit juices) with water as much as possible in order to control glycemia and weight and reduce their risk for cardiovascular disease and fatty liver B and should minimize the consumption of foods with added sugar that have the capacity to displace healthier, more nutrient-dense food choices. A | B, A |

| Protein | 5.16 In individuals with type 2 diabetes, ingested protein appears to increase insulin response without increasing plasma glucose concentrations. Therefore, carbohydrate sources high in protein should be avoided when trying to treat or prevent hypoglycemia. | B |
# Medical Nutrition Therapy (continued)

<table>
<thead>
<tr>
<th>Dietary Fat</th>
<th>5.17 An eating plan emphasizing elements of a Mediterranean-style eating pattern rich in monounsaturated and polyunsaturated fats may be considered to improve glucose metabolism and lower cardiovascular disease risk.</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5.18 Eating foods rich in long-chain n-3 fatty acids, such as fatty fish (EPA and DHA) and nuts and seeds (ALA), is recommended to prevent or treat cardiovascular disease B; however, evidence does not support a beneficial role for the routine use of n-3 dietary supplements. A</td>
<td>B, A</td>
</tr>
<tr>
<td>Micronutrients and herbal supplements</td>
<td>5.19 There is no clear evidence that dietary supplementation with vitamins, minerals (such as chromium and vitamin D), herbs, or spices (such as cinnamon or aloe vera) can improve outcomes in people with diabetes who do not have underlying deficiencies, and they are not generally recommended for glycemic control.</td>
<td>C</td>
</tr>
<tr>
<td>Alcohol</td>
<td>5.20 Adults with diabetes who drink alcohol should do so in moderation (no more than one drink per day for adult women and no more than two drinks per day for adult men).</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td>5.21 Educating people with diabetes about the signs, symptoms, and self-management of delayed hypoglycemia after drinking alcohol, especially when using insulin or insulin secretagogues, is recommended. The importance of glucose monitoring after drinking alcoholic beverages to reduce hypoglycemia risk should be emphasized.</td>
<td>B</td>
</tr>
<tr>
<td>Sodium</td>
<td>5.22 As for the general population, people with diabetes and prediabetes should limit sodium consumption to &lt;2,300 mg/day.</td>
<td>B</td>
</tr>
<tr>
<td>Nonnutritive sweeteners</td>
<td>5.23 The use of nonnutritive sweeteners may have the potential to reduce overall calorie and carbohydrate intake if substituted for caloric (sugar) sweeteners and without compensation by intake of additional calories from other food sources. For those who consume sugar-sweetened beverages regularly, a low-calorie or nonnutritive-sweetened beverage may serve as a short-term replacement strategy, but overall, people are encouraged to decrease both sweetened and nonnutritive-sweetened beverages and use other alternatives, with an emphasis on water intake.</td>
<td>B</td>
</tr>
</tbody>
</table>
Smoking Cessation: Tobacco & E-cigarettes

5.29 Advise all patients not to use cigarettes and other tobacco products or e-cigarettes. A

5.30 After identification of tobacco or e-cigarette use, include smoking cessation counseling and other forms of treatment as a routine component of diabetes care. A
Glycemic Targets

- New recommendations added on use of the ambulatory glucose profile (AGP) report and time in range (TIR) for assessment of glycemic management
- Table 6.1 was replaced with a simplified estimated average glucose table
- A new recommendation was added on screening patients taking medications that can contribute to hypoglycemia for hypoglycemia unawareness
- Intranasal glucagon and glucagon solution for subcutaneous injection were added to the section on “Hypoglycemia”
Glucose Assessment

6.4 Standardized, single-page glucose reports with visual cues such as the Ambulatory Glucose Profile (AGP) should be considered as a standard printout for all CGM devices. E

6.5 Time in range (TIR) is associated with the risk of microvascular complications and should be an acceptable end point for clinical trials and can be used for assessment of glycemic control. Additionally, time below target (<70 and <54 mg/dL [3.9 and 3.0 mmol/L]) and time above target (>180 mg/dL [10.0 mmol/L]) are useful parameters for reevaluation of the treatment regimen. E
GLYCEMIC TARGETS

AGP Report

GLUCOSE STATISTICS AND TARGETS

<table>
<thead>
<tr>
<th>Date Range</th>
<th>% Time CGM is Active</th>
</tr>
</thead>
<tbody>
<tr>
<td>26 Feb 2019-10 Mar 2019</td>
<td>13 days 99.9%</td>
</tr>
</tbody>
</table>

Glucose Ranges

<table>
<thead>
<tr>
<th>Range</th>
<th>Targets [% of Readings (Time/Day)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target Range 70–180 mg/dL</td>
<td>Greater than 70% (16h 48min)</td>
</tr>
<tr>
<td>Below 70 mg/dL</td>
<td>Less than 4% (58min)</td>
</tr>
<tr>
<td>Below 54 mg/dL</td>
<td>Less than 1% (14min)</td>
</tr>
<tr>
<td>Above 180 mg/dL</td>
<td>Less than 25% (6h)</td>
</tr>
<tr>
<td>Above 250 mg/dL</td>
<td>Less than 5% (1h 12min)</td>
</tr>
</tbody>
</table>

Each 5% increase in time in range (70–180 mg/dL) is clinically beneficial.

Average Glucose 173 mg/dL
Glucose Management Indicator (GMI) 7.6%
Glucose Variability 49.5%
Defined as percent coefficient of variation (%CV); target ≤36%

Name
MRN

TIME IN RANGES

- Very High (>250 mg/dL) 20% (4h 48min)
- High (181–250 mg/dL) 23% (5h 31min)
- Target Range (70–180 mg/dL) 47% (11h 17min)
- Low (54–69 mg/dL) 4% (58min)
- Very Low (<54 mg/dL) 6% (1h 26min)

Glycemic Targets:
Standards of Medical Care in Diabetes - 2020. Diabetes Care 2020;43(Suppl. 1):S66-S76
Table 6.1—Mean glucose levels for specified A1C levels (6,7)

<table>
<thead>
<tr>
<th>A1C</th>
<th>Mean plasma glucose*</th>
<th>Mean fasting glucose</th>
<th>Mean premeal glucose</th>
<th>Mean postmeal glucose</th>
<th>Mean bedtime glucose</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% (mmol/mol)</td>
<td>mg/dL</td>
<td>mmol/L</td>
<td>mg/dL</td>
<td>mmol/L</td>
</tr>
<tr>
<td>6 (42)</td>
<td>126 (100–152)</td>
<td>7.0 (5.5–8.5)</td>
<td>122 (117–127)</td>
<td>6.8 (6.5–7.0)</td>
<td>118 (115–121)</td>
</tr>
<tr>
<td>5.5–6.49 (37–47)</td>
<td>142 (135–150)</td>
<td>7.9 (7.5–8.3)</td>
<td>139 (134–144)</td>
<td>7.7 (7.4–8.0)</td>
<td>164 (159–169)</td>
</tr>
<tr>
<td>6.5–6.99 (47–53)</td>
<td>154 (123–185)</td>
<td>8.6 (6.8–10.3)</td>
<td>152 (143–162)</td>
<td>8.4 (7.9–9.0)</td>
<td>152 (147–157)</td>
</tr>
<tr>
<td>7 (53)</td>
<td>167 (157–177)</td>
<td>9.3 (8.7–9.8)</td>
<td>155 (148–161)</td>
<td>8.6 (8.2–8.9)</td>
<td>189 (180–197)</td>
</tr>
<tr>
<td>7.0–7.49 (53–58)</td>
<td>183 (147–217)</td>
<td>10.2 (8.1–12.1)</td>
<td>178 (164–192)</td>
<td>9.9 (9.1–10.7)</td>
<td>179 (167–191)</td>
</tr>
<tr>
<td>7.5–7.99 (58–64)</td>
<td>212 (170–249)</td>
<td>11.8 (9.4–13.9)</td>
<td>240 (193–282)</td>
<td>13.4 (10.7–15.7)</td>
<td></td>
</tr>
<tr>
<td>8 (64)</td>
<td>269 (217–314)</td>
<td>14.9 (12.0–17.5)</td>
<td>298 (240–347)</td>
<td>16.5 (13.3–19.3)</td>
<td></td>
</tr>
</tbody>
</table>

*Data in parentheses represent 95% CI, unless otherwise noted. A calculator for converting A1C results into eAG, in either mg/dL or mmol/L, is available at http://professional.diabetes.org/eAG. *These estimates are based on ADAG data of ~2,700 glucose measurements over 3 months per A1C measurement in 507 adults with type 1, type 2, and no diabetes. The correlation between A1C and average glucose was 0.92 (6).
## Estimated Average Glucose

<table>
<thead>
<tr>
<th>A1C (%)</th>
<th>mg/dL*</th>
<th>mmol/L</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>97 (76–120)</td>
<td>5.4 (4.2–6.7)</td>
</tr>
<tr>
<td>6</td>
<td>126 (100–152)</td>
<td>7.0 (5.5–8.5)</td>
</tr>
<tr>
<td>7</td>
<td>154 (123–185)</td>
<td>8.6 (6.8–10.3)</td>
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Data in parentheses are 95% CI. A calculator for converting A1C results into eAG, in either mg/dL or mmol/L, is available at professional.diabetes.org/eAG. *These estimates are based on ADAG data of ~2,700 glucose measurements over 3 months per A1C measurement in 507 adults with type 1, type 2, or no diabetes. The correlation between A1C and average glucose was 0.92 (6,7). Adapted from Nathan et al. (6).
### Table 6.3—Summary of glycemic recommendations for many nonpregnant adults with diabetes

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A1C</strong></td>
<td>&lt;7.0% (53 mmol/mol)*</td>
</tr>
<tr>
<td><strong>Preprandial capillary plasma glucose</strong></td>
<td>80–130 mg/dL* (4.4–7.2 mmol/L)</td>
</tr>
<tr>
<td><strong>Peak postprandial capillary plasma glucose†</strong></td>
<td>&lt;180 mg/dL* (10.0 mmol/L)</td>
</tr>
</tbody>
</table>

*More or less stringent glycemic goals may be appropriate for individual patients. Goals should be individualized based on duration of diabetes, age/life expectancy, comorbid conditions, known CVD or advanced microvascular complications, hypoglycemia unawareness, and individual patient considerations. †Postprandial glucose may be targeted if A1C goals are not met despite reaching preprandial glucose goals. Postprandial glucose measurements should be made 1–2 h after the beginning of the meal, generally peak levels in patients with diabetes.*
Hypoglycemia

6.10 Individuals at risk for hypoglycemia should be asked about symptomatic and asymptomatic hypoglycemia at each encounter. C

6.11 In patients taking medication that can lead to hypoglycemia, investigate, screen, and assess risk for or occurrence of unrecognized hypoglycemia, considering that patients may have hypoglycemia unawareness. C

6.12 Glucose (15–20 g) is the preferred treatment for the conscious individual with blood glucose <70 mg/dL [3.9 mmol/L]), although any form of carbohydrate that contains glucose may be used. Fifteen minutes after treatment, if SMBG shows continued hypoglycemia, the treatment should be repeated. Once SMBG returns to normal, the individual should consume a meal or snack to prevent recurrence of hypoglycemia. B
Diabetes Technology

• This section, which was new in 2019, has been reorganized and updated
  • Now organized into 3 main sections:
    • “Self-Monitoring of Blood Glucose”
    • “Continuous Glucose Monitors”
    • “Insulin Delivery”
  • Increased emphasis that there is no “one-size-fits-all” approach to technology in people with diabetes
Overall Statement

7.1 Use of technology should be individualized based on a patient’s needs, desires, skill level, and availability of devices. Nonprofit websites can offer advice for providers and patients to determine the suitability of various options.
Obesity Management for the Treatment of Type 2 Diabetes

• The BMI calculation recommendation was updated to recommend annual BMI calculations rather than at every patient encounter
  • More discussion on how providers measure and record patient weight, including recommendations on how to manage these encounters to maximize patient comfort and engagement

• Additional considerations, such as access to food and motivation levels, added to the section on “Lifestyle Interventions”
Assessment

8.1 Measure height and weight and calculate BMI at annual visits or more frequently. E

8.2 Based on clinical considerations, such as the presence of comorbid heart failure or significant unexplained weight gain or loss, weight may need to be monitored and evaluated more frequently. B If deterioration of medical status is associated with significant weight gain or loss, inpatient evaluation should be considered, specifically focused on the association between medication use, food intake, and glycemic status. E

8.3 For patients with a high level of weight-related distress, special accommodations should be made to ensure privacy during weighing. E
Pharmacologic Approaches to Glycemic Treatment

• Discussion added on access to analog insulins and how there are multiple approaches to insulin treatment

• New evidence and a recommendation on early combination therapy in type 2 diabetes to extend the time to treatment failure was added

• Figure 9.1 has been revised as have recommendations for glucose-lowering therapy use based on key comorbidities

• Figure 9.2 has been simplified
Metformin is the preferred initial pharmacologic agent for the treatment of type 2 diabetes. A

Once initiated, metformin should be continued as long as it is tolerated and not contraindicated; other agents, including insulin, should be added to metformin. A

Early combination therapy can be considered in some patients at treatment initiation to extend the time to treatment failure. A

The early introduction of insulin should be considered if there is evidence of ongoing catabolism (weight loss), if symptoms of hyperglycemia are present, or when A1C levels (>10% [86 mmol/mol]) or blood glucose levels (≥300 mg/dL [16.7 mmol/L]) are very high. E
Pharmacologic Therapy for Type 2 Diabetes (continued)

9.8 A patient-centered approach should be used to guide the choice of pharmacologic agents. Considerations include cardiovascular comorbidities, hypoglycemia risk, impact on weight, cost, risk for side effects, and patient preferences (Table 9.2 and Figure 9.1). E

9.9 Among patients with type 2 diabetes who have established atherosclerotic cardiovascular disease or indicators of high risk, established kidney disease, or heart failure, an SGLT2 inhibitor or GLP-1 receptor agonist with demonstrated cardiovascular disease benefit (Table 9.1, Table 10.3B, Table 10.3C) is recommended as part of the glucose-lowering regimen independent of A1C and in consideration of patient-specific factors (Figure 9.1). A
## Glucose-lowering Medication in Type 2 Diabetes: Overall Approach

### Pharmacologic Approaches to Glycemic Management: Standards of Medical Care in Diabetes - 2020. *Diabetes Care* 2020;43(Suppl. 1):S98-S110

### INDICATORS OF HIGH-RISK OR ESTABLISHED ASCVD, CKD, OR HF

* Consider independently of baseline A1C or individualized A1C target.

### NO

### CONSIDER INDEPENDENTLY OF BASELINE A1C OR INDIVIDUALIZED A1C TARGET

#### ASCVD PREDOMINATES
- Established ASCVD
- Indicators of high ASCVD risk (age ≥55 years with coronary, carotid or lower extremity artery stenosis >50%, or LVEF ≤35%)

#### HF OR CKD PREDOMINATES
- Particularly HF/EF (LVEF ≤35%)
- CKD: Specifically eGFR 30-60 mL/min/1.73 m² or UACR >30 mg/g, particularly UACR >300 mg/g

### IF A1C ABOVE INDIVIDUALIZED TARGET PROCEED AS BELOW

#### PREFERABLY
- GLP-1 RA with proven CV benefit
  - OR
  - SGLT2i with proven CV benefit

#### IF A1C above target

### COMPELLING NEED TO MINIMIZE HYPOGLYCEMIA

<table>
<thead>
<tr>
<th>Compelling Need</th>
<th>Drug</th>
<th>Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td>GLP-1 RA</td>
<td>GLP-1 RA</td>
<td>GLP-1 RA with good efficacy for weight loss&lt;sup&gt;2&lt;/sup&gt;</td>
</tr>
<tr>
<td>SGLT2i</td>
<td>SGLT2i</td>
<td>SGLT2i with good efficacy for weight loss&lt;sup&gt;2&lt;/sup&gt;</td>
</tr>
<tr>
<td>TZD</td>
<td>TZD</td>
<td>TZD with good efficacy for weight loss&lt;sup&gt;2&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

#### IF A1C above target

### IF A1C above target

#### COMPENSATING NEED TO MINIMIZE WEIGHT GAIN OR PROMOTE WEIGHT LOSS

<table>
<thead>
<tr>
<th>Compensating Need</th>
<th>Drug</th>
<th>Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td>GLP-1 RA</td>
<td>GLP-1 RA</td>
<td>GLP-1 RA with good efficacy for weight loss&lt;sup&gt;2&lt;/sup&gt;</td>
</tr>
<tr>
<td>DPP-4i</td>
<td>DPP-4i</td>
<td>DPP-4i with good efficacy for weight loss&lt;sup&gt;2&lt;/sup&gt;</td>
</tr>
<tr>
<td>SGLT2i</td>
<td>SGLT2i</td>
<td>SGLT2i with good efficacy for weight loss&lt;sup&gt;2&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

#### IF A1C above target

### COST IS A MAJOR ISSUE<sup>3</sup>

<table>
<thead>
<tr>
<th>Cost</th>
<th>Drug</th>
</tr>
</thead>
<tbody>
<tr>
<td>SU&lt;sup&gt;2&lt;/sup&gt;</td>
<td>SU&lt;sup&gt;2&lt;/sup&gt;</td>
</tr>
<tr>
<td>TZD&lt;sup&gt;3&lt;/sup&gt;</td>
<td>TZD&lt;sup&gt;3&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

### IF A1C above target

#### If quadruple therapy required, or SGLT2i and/or GLP-1 RA not tolerated or contraindicated, consider regimen with lowest risk of weight gain

<table>
<thead>
<tr>
<th>Regimen</th>
<th>Drug</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic insulin</td>
<td>Basic insulin</td>
</tr>
</tbody>
</table>

### IF A1C above target

#### If quadruple therapy required, or SGLT2i and/or GLP-1 RA not tolerated or contraindicated, consider regimen with lowest risk of weight gain

<table>
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<th>Drug</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic insulin</td>
<td>Basic insulin</td>
</tr>
</tbody>
</table>

###トルマス

1. Proven CV benefit means it has labeled indication of reducing CV events
2. Be aware that SGLT2i labeling varies by region and individual agent with respect to indicated level of eGFR for initiation and continued use
3. Grouping of HFrEF, HFrEF and diabetes has shown reduction in HF and to reduce CKD progression in CVDs. Groupings has primary renal outcome data from CREDENCE. Dapagliflozin has primary renal outcome data from DAPA-HF
4. Degludec or U246 glargine have demonstrated CV safety
5. Low dose may be better tolerated though less well studied for CV effects

**References:**

- **1.** Proven CV benefit means it has labeled indication of reducing CV events
- **2.** Be aware that SGLT2i labeling varies by region and individual agent with respect to indicated level of eGFR for initiation and continued use
- **3.** Grouping of HFrEF, HFrEF and diabetes has shown reduction in HF and to reduce CKD progression in CVDs. Groupings has primary renal outcome data from CREDENCE. Dapagliflozin has primary renal outcome data from DAPA-HF
- **4.** Degludec or U246 glargine have demonstrated CV safety
- **5.** Low dose may be better tolerated though less well studied for CV effects
<table>
<thead>
<tr>
<th>Medications</th>
<th>Effect</th>
<th>Hypoglycemia</th>
<th>Weight Change</th>
<th>CV effects</th>
<th>Cost</th>
<th>Oral/Insulin</th>
<th>Renal effects</th>
<th>Additional considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metformin</td>
<td>High</td>
<td>No</td>
<td>Neutral</td>
<td>CV benefit</td>
<td>High</td>
<td>Oral</td>
<td>No change</td>
<td>Must be used with caution</td>
</tr>
<tr>
<td>SGLT2 inhibitors</td>
<td>Intermediate</td>
<td>No</td>
<td>Increase</td>
<td>CV benefit</td>
<td>High</td>
<td>Oral</td>
<td>Low</td>
<td>None or minor in small doses; increased risk of acute kidney injury</td>
</tr>
<tr>
<td>GLP-1 RAs</td>
<td>High</td>
<td>No</td>
<td>Neutral</td>
<td>Renal benefit</td>
<td>High</td>
<td>Oral</td>
<td>Neutral</td>
<td>Renal dose adjustment required, nausea, vomiting</td>
</tr>
<tr>
<td>DPP-4 inhibitors</td>
<td>Intermediate</td>
<td>No</td>
<td>No change</td>
<td>Potential benefit</td>
<td>High</td>
<td>Oral</td>
<td>Neutral</td>
<td>No signs or symptoms of acute pancreatitis</td>
</tr>
<tr>
<td>TLR agonists</td>
<td>High</td>
<td>No</td>
<td>Gain</td>
<td>Increased risk</td>
<td>Low</td>
<td>Oral</td>
<td>Neutral</td>
<td>No dose adjustment required, genitourinary symptoms, metabolic acidosis</td>
</tr>
<tr>
<td>Sodium glucose cotransporter 2 inhibitors</td>
<td>High</td>
<td>Yes</td>
<td>Gain</td>
<td>Neutral</td>
<td>Low</td>
<td>SGLT2 inhibitor</td>
<td>Neutral</td>
<td>Glucose not recommended, may cause hypoglycemia</td>
</tr>
<tr>
<td>GLP-1 RAs</td>
<td>High</td>
<td>Yes</td>
<td>Gain</td>
<td>Neutral</td>
<td>Low</td>
<td>SGLT2 inhibitor</td>
<td>Neutral</td>
<td>None, increased risk of hyperglycemia, anemia</td>
</tr>
</tbody>
</table>

*For agent-specific dosing recommendations, please refer to the manufacturers’ prescribing information. FDA approved for CV benefit. FDA approved for heart failure indication. FDA approved for CVD indication. CV: cardiovascular; GLP-4: dipeptidyl peptidase 4; OMS: diabetic ketoacidosis; DMS: diabetic kidney disease; GLP-3 RA: glucose-like peptide 3 receptor agonists; HR: Heart Failure; NASH: nonalcoholic steatohepatitis; SGLT2, sodium-glucose cotransporter 2; SGLT: subcutaneous; T2DM, type 2 diabetes.
Intensifying to injectable therapies (1 of 2)

Use Principles in Figure 9.1, including reinforcement of behavioral interventions (weight management and physical activity) and provision of DSMES to meet individualized treatment goals.

If injectable therapy is needed to reduce A1C:

1. Consider GLP-1 RA in most patients prior to insulin:
   - INITIATION: Initiate appropriate starting dose for agent selected (varies within class)
   - TITRATION: Gradual titration to maintenance dose (varies within class)

2. If above A1C target:

   Add basal insulin:
   - Choice of basal insulin should be based on patient-specific considerations, including cost. Refer to Table 9.3 for insulin cost information.

   Add basal analog or bedtime NPH insulin:
   - INITIATION: Start 10 IU a day OR 0.1-0.2 IU/kg a day
   - TITRATION:
     - Set FPG target (see Section 6: Glycemic Targets)
     - Choose evidence-based titration algorithm, e.g., increase 2 units every 3 days to reach FPG target without hypoglycemia
     - For hypoglycemia determine cause, if no clear reason lower dose by 10-20%
Intensifying to injectable therapies (2 of 2)

1. Consider insulin as the first injectable. If evidence of hypoglycemia is absent, consider adding an injectable glucose-lowering agent, such as metformin, sulfonylureas, or GLP-1 receptor agonists.
2. If insulin is added, consider starting with a basal insulin agent to help maintain glycemic control.
3. Consider adding additional insulin injections as needed to achieve target HbA1c levels.
4. Use continuous glucose monitoring (CGM) to track glucose levels and adjust insulin dosages accordingly.
5. Monitor for side effects and adjust the dose of insulin as needed to minimize hyperglycemia.

For more detailed information, refer to the Standards of Medical Care in Diabetes - 2020. Diabetes Care 2020;43(Suppl. 1):S98-S110.
Intensifying to Injectable Therapies: Important Footnotes

1. Consider insulin as the first injectable if evidence of ongoing catabolism, symptoms of hyperglycemia are present, when A1C levels (>10%) or blood glucose levels (≥300 mg/dL) are very high, or a diagnosis of type 1 diabetes is a possibility.

2. When selecting GLP-1 RA, consider: patient preference, A1C lowering, weight-lowering effect, or frequency of injection. If CVD, consider GLP-1 RA with proven CVD benefit.

3. For patients on GLP-1 RA and basal insulin combination, consider use of a fixed-ratio combination product (iDegLira or iGlarLixi).

4. Consider switching from evening NPH to a basal analog if the patient develops hypoglycemia and/or frequently forgets to administer NPH in the evening and would be better managed with an AM dose of a long-acting basal insulin.

5. If adding prandial insulin to NPH, consider initiation of a self-mixed or premixed insulin regimen to decrease the number of injections required.
Cardiovascular Disease and Risk Management

- Again endorsed by American College of Cardiology (ACC)
- Blood pressure targets for pregnant patients with pre-existing hypertension have been updated
- Lipid treatment have been updated to align with the “2018 Guideline on the Management of Blood Cholesterol: Executive Summary: A Report of the ACC/AHA Task Force on Clinical Practice Guidelines”
- New recommendation for use of icosapent ethyl based on the REDUCE-IT trial
- Updated recommendations on use of glucose-lowering therapies based on ASCVD, risk of ASCVD, DKD and HF
Treatment of Other Lipoprotein Fractions or Targets

10.29 For patients with fasting triglyceride levels ≥500 mg/dL, evaluate for secondary causes of hypertriglyceridemia and consider medical therapy to reduce the risk of pancreatitis. C

10.30 In adults with moderate hypertriglyceridemia (fasting or non-fasting triglycerides 175–499 mg/dL), clinicians should address and treat lifestyle factors (obesity and metabolic syndrome), secondary factors (diabetes, chronic liver or kidney disease and/or nephrotic syndrome, hypothyroidism), and medications that raise triglycerides. C

10.31 In patients with atherosclerotic cardiovascular disease or other cardiovascular risk factors on a statin with controlled LDL cholesterol but elevated triglycerides (135–499 mg/dL), the addition of icosapent ethyl can be considered to reduce cardiovascular risk. A
Among patients with type 2 diabetes who have established ASCVD or established kidney disease, a SGLT2 inhibitor or GLP-1 receptor agonist with demonstrated cardiovascular disease benefit (Table 10.3B and Table 10.3C) is recommended as part of the glucose-lowering regimen.
Cardiovascular Disease—Treatment (continued)

10.43a In patients with type 2 diabetes and established ASCVD, multiple ASCVD risk factors, or diabetic kidney disease, a sodium–glucose cotransporter 2 inhibitor with demonstrated cardiovascular benefit is recommended to reduce the risk of major adverse cardiovascular events and heart failure hospitalization. A

10.43b In patients with type 2 diabetes and established ASCVD or multiple risk factors for ASCVD, a glucagon-like peptide 1 receptor agonist with demonstrated cardiovascular benefit is recommended to reduce the risk of major adverse cardiovascular events. A

10.43c In patients with type 2 diabetes and established heart failure, a sodium–glucose cotransporter 2 inhibitor may be considered to reduce risk of heart failure hospitalization. C
Microvascular Complications and Foot Care

- Recommendation for screening of CKD has been updated to include twice-yearly screening for certain patients
- Recommendation for use of SGLT-2 inhibitors and GLP-1 RAs in CKD was updated
- A new recommendation was added about avoiding discontinuation of RAS blockade in response to minor increases in serum creatinine in the absence of volume depletion
- New Figure 11.1 added
Chronic Kidney Disease—Treatment

11.2 Optimize glucose control to reduce the risk or slow the progression of chronic kidney disease. A

11.3 For patients with type 2 diabetes and diabetic kidney disease, consider use of a sodium–glucose cotransporter 2 inhibitor in patients with an estimated glomerular filtration rate ≥30 mL/min/1.73 m² and urinary albumin >30 mg/g creatinine, particularly in those with urinary albumin ≥300 mg/g creatinine, to reduce risk of chronic kidney disease (CKD) progression, cardiovascular events, or both. A In patients with CKD who are at increased risk for cardiovascular events, use of a glucagon-like peptide 1 receptor agonist may reduce risk of progression of albuminuria, cardiovascular events, or both (Table 9.1). C
Chronic Kidney Disease—Treatment (continued)

11.4 Optimize blood pressure control to reduce the risk or slow the progression of chronic kidney disease. A

11.5 Do not discontinue renin-angiotensin system blockade for minor increases in serum creatinine (<30%) in the absence of volume depletion. B

11.6 For people with non-dialysis dependent chronic kidney disease, dietary protein intake should be approximately 0.8 g/kg body weight per day (the recommended daily allowance). A For patients on dialysis, higher levels of dietary protein intake should be considered, since malnutrition is a major problem in some dialysis patients. B
### CKD Classification and Albuminuria Categories

<table>
<thead>
<tr>
<th>CKD</th>
<th>Albuminuria Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1: Normal or high</td>
<td></td>
</tr>
<tr>
<td></td>
<td>250 mg/dL or higher</td>
</tr>
<tr>
<td>G2: Mildly decreased</td>
<td>60-89 mg/dL</td>
</tr>
<tr>
<td>G3a: Mildly to moderately decreased</td>
<td>45-59 mg/dL</td>
</tr>
<tr>
<td>G3b: Moderately to severely decreased</td>
<td>20-44 mg/dL</td>
</tr>
<tr>
<td>G4: Severely decreased</td>
<td>15-29 mg/dL</td>
</tr>
<tr>
<td>G5: Kidney failure</td>
<td>&lt;15 mg/dL</td>
</tr>
</tbody>
</table>

### Risk of Chronic Kidney Disease (CKD) Progression

The risk of CKD progression is influenced by glomerular filtration rate (GFR) and albuminuria. The GFR and albuminuria grid helps in assessing the risk of progression, morbidity, and mortality. Green indicates a low risk, yellow a moderate risk, and red a high risk. The numbers in the boxes are guides to the frequency of visits. Lower eGFR and albumin-to-creatinine ratio indicate a higher risk of other markers of kidney damage, such as imaging showing polycystic kidney disease or kidney biopsy abnormalities. Follow-up measurements are recommended. "Refer" indicates that nephrology services are recommended. "Referring clinicians may wish to discuss with their nephrology service, depending on local arrangements regarding treating or referring." Reprinted with permission from Vassalotti et al. (188).
Older Adults

- Additional narrative and evidence added to the “Neurocognitive Function” section on the importance of assessment for cognitive decline and impairment
- A new recommendation urging providers to consider cost of care and insurance coverage when prescribing medications to older adults
- A new section titled “Special Considerations for Older Adults with Type 1 Diabetes” to address the treatment of this growing population
Children and Adolescents

• Revised recommendations to allow for individualization of glycemic targets (13.21-13.24)
• Updated recommendations on the screening and treatment of hypertension (13.31-13.35)
• Modification of the recommendation on dyslipidemia testing (13.36)
• Retinopathy screening recommendation has been revised based on new evidence supporting a lower frequency of eye examinations than previously recommended (13.46)
• New recommendation added for use of liraglutide in children 10 years of age or older (13.67)
• New recommendation on pharmacologic treatment of hypertension in type 2 diabetes (13.76)
Management of Diabetes in Pregnancy

- Greater emphasis in this section on preconception care for women with diabetes
  - New recommendation (14.5) focusing on nutrition, diabetes education, and screening for diabetes-related complications
  - New Table 14.1
- New recommendations on use of CGM in pregnancy (14.9-14.12)
- The section “Postpartum Care” was expanded to include recommendations (14.16-14.22) on postpartum insulin requirements, management of women with a history of GDM, and psychosocial assessment
<table>
<thead>
<tr>
<th>Table 14.1—Checklist for preconception care for women with diabetes (15,17)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Preconception education should include:</strong></td>
</tr>
<tr>
<td>□ Comprehensive nutrition assessment and recommendations for:</td>
</tr>
<tr>
<td>• Overweight/obesity or underweight</td>
</tr>
<tr>
<td>• Meal planning</td>
</tr>
<tr>
<td>• Correction of dietary nutritional deficiencies</td>
</tr>
<tr>
<td>• Caffeine intake</td>
</tr>
<tr>
<td>• Safe food preparation technique</td>
</tr>
<tr>
<td>□ Lifestyle recommendations for:</td>
</tr>
<tr>
<td>• Regular moderate exercise</td>
</tr>
<tr>
<td>• Avoidance of hyperthermia (hot tubs)</td>
</tr>
<tr>
<td>• Adequate sleep</td>
</tr>
<tr>
<td>□ Comprehensive diabetes self-management education</td>
</tr>
<tr>
<td>□ Counseling on diabetes in pregnancy per current standards, including: natural history of insulin resistance in pregnancy and postpartum; preconception glycemic targets; avoidance of DKA/severe hyperglycemia; avoidance of severe hypoglycemia; progression of retinopathy; PCOS (if applicable); fertility in patients with diabetes; genetics of diabetes; risks to pregnancy including miscarriage, still birth, congenital malformations, macrosomia, preterm labor and delivery, hypertensive disorders in pregnancy, etc.</td>
</tr>
<tr>
<td>□ Supplementation</td>
</tr>
<tr>
<td>• Folic acid supplement (400 µg routine)</td>
</tr>
<tr>
<td>• Appropriate use of over-the-counter medications and supplements</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Medical assessment and plan should include:</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ General evaluation of overall health</td>
</tr>
<tr>
<td>□ Evaluation of diabetes and its comorbidities and complications, including: DKA/severe hyperglycemia; severe hypoglycemia/hypoglycemic unawareness; barriers to care; comorbidities such as hyperlipidemia, hypertension, NAFLD, PCOS, and thyroid dysfunction; complications such as macrovascular disease, nephropathy, neuropathy (including autonomic bowel and bladder dysfunction), and retinopathy</td>
</tr>
<tr>
<td>□ Evaluation of obstetric/gynecologic history, including history of: cesarean section, congenital malformations or fetal loss, current methods of contraception, hypertensive disorders of pregnancy, postpartum hemorrhage, preterm delivery, previous macrosomia, Rh incompatibility, and thrombotic events (DVT/PE)</td>
</tr>
<tr>
<td>□ Review of current medications and appropriateness during pregnancy</td>
</tr>
</tbody>
</table>
Screening should include:

- Diabetes complications and comorbidities, including: comprehensive foot exam; comprehensive ophthalmologic exam; ECG in women starting at age 35 years who have cardiac signs/symptoms or risk factors, and if abnormal, further evaluation; lipid panel; serum creatinine; TSH; and urine protein-to-creatinine ratio
- Anemia
- Genetic carrier status (based on history):
  - Cystic fibrosis
  - Sickle cell anemia
  - Tay-Sachs disease
  - Thalassemia
  - Others if indicated
- Infectious disease
  - Neisseria gonorrhoea/Chlamydia trachomatis
  - Hepatitis C
  - HIV
  - Pap smear
  - Syphilis

Immunizations should include:

- Rubella
- Varicella
- Hepatitis B
- Influenza
- Others if indicated

Preconception plan should include:

- Nutrition and medication plan to achieve glycemic targets prior to conception, including appropriate implementation of monitoring, continuous glucose monitoring, and pump technology
- Contraceptive plan to prevent pregnancy until glycemic targets are achieved
- Management plan for general health, gynecologic concerns, comorbid conditions, or complications, if present, including: hypertension, nephropathy, retinopathy; Rh incompatibility; and thyroid dysfunction

DKA, diabetic ketoacidosis; DVT/PE, deep vein thrombosis/pulmonary embolism; ECG, electrocardiogram; NAFLD, nonalcoholic fatty liver disease; PCOS, polycystic ovary syndrome; TSH, thyroid-stimulating hormone.
Diabetes Care in the Hospital

• Discussion of new studies supporting use of closed-loop insulin delivery with linked pump/sensor devices in patients with type 1 diabetes

• Additional evidence added to the section on “Preventing Admissions and Readmissions”
• Beginning with the 2018 ADA Standards of Medical Care in Diabetes, the Standards document became a “living” document where notable updates are incorporated into the Standards
• Updates will be made in response to important events inclusive of, but not limited to:
  • Approval of new treatments (medications or devices) with the potential to impact patient care;
  • Publication of new findings that support a change to a recommendation and/or evidence level of a recommendation; or
  • Publication of a consensus document endorsed by ADA that necessitates an update of the Standards to align content of the documents

Living Standards Updates Available at: http://care.diabetesjournals.org/living-standards
• Full version of SOC available
• Abridged version for PCPs
• Standards of Care slide deck
• Free app, with interactive tools
• Pocket cards with key figures
• Free webcast for continuing education credit

Professional.Diabetes.org/SOC
Thank you