ADCES
Diabetes Care and Education Curriculum

Fourth Edition

Curriculum Editor

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ADCES® Association of Diabetes Care & Education Specialists

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Implementation Guide

ABOUT THIS CURRICULUM

The Association of Diabetes Care & Education Specialists' *ADCES Diabetes Care and Education Curriculum* is offered to support diabetes care and education specialists (DCES) in teaching diabetes self-management education and support (DSMES) concepts that help participants achieve the behavioral changes necessary to manage their diabetes and related conditions. Because people with diabetes and related conditions make decisions daily about their self-care that ultimately affect their clinical outcomes and overall health, self-management education is the key to their success. However, effective self-management does not just include acquiring the knowledge and skills needed, it also includes adopting behavior changes for continued success. Knowledge without behavior change is futile, and making behavior changes without knowledge is unlikely. This is why this *Curriculum* places equal emphasis on both—the content being taught and the facilitators of behavior change. This *Curriculum* is not based on one single method. Instead, its theoretical base and underlying principles are derived from a variety of sources.

AUDIENCE FOR THIS CURRICULUM

The intended audience for this *Curriculum* is any participant with prediabetes, diabetes, or diabetes-related diseases, their caregivers, family, spouse, and significant others. Participants approach self-management education with varying levels of prior knowledge and skill. The health beliefs, attitudes, and levels of readiness to learn will vary widely from participant to participant. Diabetes care and education specialists are challenged to structure their services in a way that maximizes the educational opportunity for participants. The DCES should consider individual versus group consultation; whether to group participants who are newly diagnosed with those having longstanding diabetes; and whether to separate participants with type 1 diabetes from participants with type 2 diabetes.

It is understood that participants will not be *reading* the curriculum content. When providing diabetes self-management support and training, the DCES and other health care professionals (HCPs) must *translate the written content into the spoken word*. One known barrier to health literacy is when HCPs speak at a level of language that is comfortable to them but not clear for participants. To promote participant understanding, the *Curriculum's* instructional plan content is written at an appropriate level. Diabetes care and education specialists should assess their participants' literacy levels and adjust their communication accordingly.

THE CURRICULUM'S FOUNDATION

Learning is an immediate outcome, which can be measured at the time of the educational intervention. Asking questions that probe for the participant's understanding of a concept just taught can reveal whether learning has occurred. Identifying facilitators

and barriers, as well as strategies to overcome barriers, are also immediate outcomes of learning. Probing questions are embedded throughout this *Curriculum* to help DCESs determine participants' understanding. The responses to these questions will help participants identify barriers to appropriate self-care.

Behavior change is an intermediate outcome. It requires more than a single measurement. It must be measured over time. Behavior change can be subjectively measured through the participant's self-reporting at follow-up visits (eg, *I have been monitoring my blood glucose twice a day*.). It can be objectively measured through a review of documented records (eg, *glucose logbook results, meter data*). Clinical improvement is a post-intermediate outcome, which results from the interaction of diabetes education, the participant's self-management efforts, and the health care professional's clinical management. Ideally, DSMES programs should measure all outcomes categories, but the DCESs' skills and influence most directly affect the learning and behavior change of the participants.

The *Curriculum,* built on the ADCES7 Self-Care Behaviors® framework, is your guide for implementing a DSMES program. The *Curriculum* meets the requirements of the National Standards for Diabetes Self-Management and Support and follows an evidence-based model for assessing, intervening, and evaluating people with diabetes and related cardiometabolic conditions.

In a consensus report, the American Diabetes Association (ADA), ADCES, the Academy of Nutrition and Dietetics, and several other organizations identified 4 critical times to provide and modify DSMES.

Table 1 outlines the factors that indicate when a referral for DSMES is needed.

TABLE 1 Factors Indicating Referral to DSMES Services Is Needed

When to Provide DSMES	Factors Indicating Referral to DSMES Needed
At diagnosis	• Newly diagnosed—all newly diagnosed people with type 2 diabetes should receive DSMES • Ensure that both nutrition and emotional health are appropriately addressed in education or make separate referrals
Annually and/or when not meeting treatment targets	• To review knowledge, skills, psychosocial, and behavioral outcomes, or factors that inhibit or facilitate achieving treatment targets • Long-term diabetes with limited prior education • Treatment is not effective in attaining the therapeutic target • Change in medication, activity, or nutritional intake or preferences • Maintenance of positive clinical and quality-of-life outcomes • Unexplained hypoglycemia or hyperglycemia • Support to attain or sustain improved behavioral or psychosocial outcomes
When complicating factors develop	Changes in: • Health conditions, such as renal disease and stroke, need for steroids, or complicated medication plan • Health status requiring changes in nutrition, physical activity • Planning pregnancy or pregnant • Physical limitations such as cognitive impairment, visual impairment, dexterity issues, movement restrictions • Emotional factors such as diabetes distress, anxiety, and clinical depression • Basic living needs such as access to shelter, food, health care, medicines, and financial limitations

Source: Powers MA, Bardsley JK, Cypress M, et al. Diabetes self-management education and support in adults with type 2 diabetes: A Consensus Report of the American Diabetes Association, the Association of Diabetes Care & Education Specialists, the Academy of Nutrition and Dietetics, the American Academy of Family Physicians, the American Academy of PAs, the American Association of Nurse Practitioners, and the American Pharmacists Association. *Diabetes Educ.* 2020;46(4):350-369.

TABLE 1 Factors Indicating Referral to DSMES Services Is Needed—*Continued*

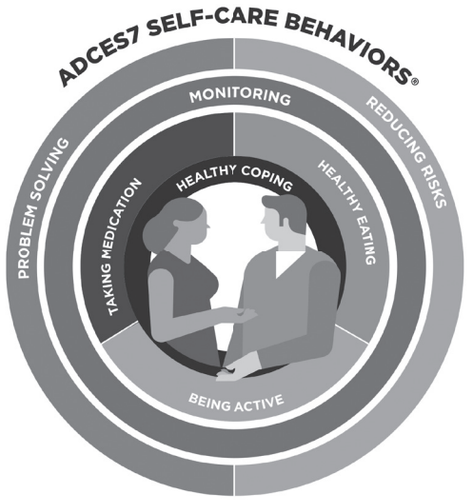
When to Provide DSMES	Factors Indicating Referral to DSMES Needed
When transitions in life and care occur	Changes in: • Living situation such as inpatient or outpatient or other change in living situation (eg, living alone, with family, assisted living) • Clinical care team • Initiation or intensification of insulin, new devices or technology, and other treatment changes • Insurance coverage that results in treatment change (eg, health care professional and/or medication coverage changed) • Age-related changes affecting cognition, vision, hearing, self-management

In 2021, ADCES revised its Position Statement* to include the updates in research and ADCES' vision and expansion beyond diabetes to refresh the ADCES7® framework. This revision reflects the perspectives of all members of the health care team as they problem solve with individuals who are at risk for or who have diabetes and related conditions to achieve healthier outcomes. The ADCES7 model guides effective person-centered collaboration and goal setting to achieve health-related outcomes and improved quality of life.

ADCES7 SELF-CARE BEHAVIORS

The revision to the ADCES Position Statement recognized the overlapping nature of the 7 behaviors, specifically the knowledge and skills needed to master them, the barriers associated with mastering these behaviors, and associated outcome measures. The following are the overarching explanations for why the ADCES7 Self-Care Behaviors are presented in this *Curriculum*.

Chapter 2, ***Healthy Coping***, because healthy coping must begin before effective learning can occur, this behavior is the central behavior that symbolizes the significance of sustaining diabetes self-management.



Chapter 3, ***Healthy Eating,*** Chapter 4, ***Being Active,*** and Chapter 5, ***Taking Medication,*** serve as the basis for care plans because they comprise what people with diabetes and related conditions undertake regularly as they self-manage their condition.

Chapter 6, ***Monitoring Glucose,*** encompasses the previous 4 Self-Care Behaviors. By collecting personalized data, *monitoring* helps convert some of the

* Association of Diabetes Care and Education Specialists; Kolb L. An effective model of diabetes care and education: The ADCES7 Self-Care Behaviors™. *Sci Diabetes Self Manag Care.* 2021;47(1):30-53.

intangible components of diabetes into perceptible ones. The knowledge gained and the ability to use the information from *monitoring* can drive behavior change.

Equally important are the less tangible Self-Care Behaviors in Chapter 7, ***Reducing Risks***, and Chapter 8, ***Problem Solving,*** which greatly influence motivation, goal setting, and the ability to transform goals into action.

TABLE 2 ADCES7 Self-Care Behaviors

	Definition of the Behavior	Behaviors of People With Diabetes that Contribute to Healthier Outcomes
Healthy Coping	*A positive attitude toward diabetes and self-management, positive relationships with others, and quality of life,* is critical for mastery of the other 6 ADCES7 Behaviors.	• Increase self-efficacy • Address cognitive impairment • Gather support
Healthy Eating	*A pattern of eating a wide variety of high-quality, nutritionally dense foods in quantities that promote optimal health and wellness.*	• Develop and use a personalized meal plan • Establish healthy eating patterns • Measure portions and monitor intake • Understand and use Nutrition Facts labels
Being Active	*Including all types, durations, and intensities of daily physical movement. Aerobic or resistance exercise training (structured or planned) as well as unstructured activities may benefit cardiometabolic health.*	Appropriate daily movement/physical activity plan • Engaging in unstructured or daily living activities • Decrease the amount of time sitting
Taking Medication	*Following the day-to-day prescribed treatment with respect to timing, dosage, and frequency, and continuing treatment for the prescribed duration.*	• Keep a current, accurate medication list and history • Fill the prescription • Take medication as prescribed and at the right time • Share medication beliefs and concerns
Monitoring	*Checking glucose levels, activity and food intake, and other key health factors from multiple sources and devices to make decisions about diabetes prevention efforts or diabetes care and self-management.*	• Track appropriate and accurate information • Maintain and share organized records • Identify trends and appropriate responses • Be empowered and engaged
Reducing Risks	*Identifying risks and implementing behaviors to minimize and/or reduce complications or adverse outcomes.*	• Act early • Participate in DSMES and ongoing education activities • Aim for adequate sleep • Plan risk-reducing activities (vaccines, tobacco cessation, screenings, exams) • Engage in health
Problem Solving	*A learned behavior that includes generating a set of potential strategies for problem resolution, selecting the most appropriate strategy, applying it and evaluating the effectiveness.*	• Ask for clarification and share challenges • Participate in shared decision making and collaborative goal setting • Create an environment that promotes health • Be a lifelong learner and learn from choices

Source: Adapted from Mensing C, Peeples M. A focus on behavioral outcomes: ADCES7® Revision. Webinar. Association of Diabetes Care & Education Specialists; 2020.

CHAPTER ORGANIZATION

The first chapter of the *Curriculum* is the *Introduction to Diabetes and Prediabetes*. This is **Chapter 1** and it focuses on the risk factors and pathophysiology of type 1 diabetes, type 2 diabetes, and prediabetes. Chapter 1 is intended to give participants a basic foundation to begin learning about the Self-Care Behaviors involved in managing and reducing the risks for diabetes.

Each of the 7 chapters that follows Chapter 1 focuses on each of the ADCES7 Self-Care Behaviors.

A Diabetes Care and Education Specialist's Overview

Systematic Review of the Literature

For each of the ADCES7, the growing body of evidence has been systematically reviewed by a team of researchers engaged by ADCES. Key points and conclusions of these reviews are summarized in this section to provide support for DSMES interventions that have been integrated into the curriculum's instructional plan.

Background Information and Instructions

Following the review of the literature, background information and relevant instructions are provided to prepare DCESs to instruct and counsel participants about each ADCES7 Self-Care Behavior. Diabetes care and education specialists are encouraged to read this section before using the instructional plan with participants.

Learning Outcomes

Each chapter opens with a range of measurable learning outcomes that participants should be able to understand and perform if the entire instructional plan is covered.

LEARNING OUTCOMES

After completing this chapter, diabetes self-management education and support (DSMES) participants should be able to:

- Recognize the benefits of physical activity and exercise.
- List the recommendations and potential barriers to being active.
- Describe the adjustments to consider regarding the impact of physical activity.
- Develop an individual action plan.

Before instruction, the DCES should perform an assessment to reveal which areas of self-care the participant needs to learn about. When using the empowerment approach, however, the participant's interests determine which topic areas are covered and when. There is usually a lot of information that needs to be learned, so it is not realistic to assume each participant will successfully meet every recommended learning outcome. At each encounter, the DCES and the participant will need to prioritize which learning outcomes can be met.

INSTRUCTIONAL PLAN: OVERVIEW

The instructional plan in this *Curriculum* is organized in a logical progression of information. However, is not meant to provide a static basis for lectures from start to finish within each topic area. For the information to be meaningful to participants, their queries should guide what content is delivered by the diabetes care and education specialist.

One educational approach is to deliver instructional content in a lecture format, in a set order of topics from basic to advanced level, followed by a question-and-answer period. As we have learned from experience with the participant empowerment approach, this is not necessarily the most effective method for educating adults. **Address psychosocial concerns first to stimulate participant interaction.** It shows participants that the DCES respects their experiences and perspectives. By focusing on the day-to-day challenges of living with diabetes, DCESs can then center the instruction

around the participants' interests. While this approach may require DCESs to stretch their comfort level and change their program structure, this practical approach enhances learning and promotes behavior change.

This arrangement of content, however, is not meant to provide a static basis for lecture from start to finish within each topic area. For the information to be meaningful to participants, their queries should guide what content is delivered by the DCES. So, even though the DCES may believe the participant needs to know everything in the instructional plan, *participants ultimately decide what they need to know* at that particular encounter.

FEATURES

Open-ended Questions

Each instructional plan includes *open-ended, discussion questions* throughout the chapter. These questions are designated with a question icon or a discussion icon. These questions are specifically written to help the DCES to incorporate into the plan for any of the following reasons.

- To encourage active discussion
- To elicit participants' experiences and perspectives
- To keep participants engaged
- To assess a participant's reasoning and critical thinking skills

Open-ended Questions to Ask Participants

Ask these questions in an individual or group setting to encourage active discussion and to elicit the participant's experiences and perspectives.

Questions

What do you think caused your diabetes?

What lab tests were used in diagnosing you with diabetes?

How would you explain diabetes to a friend or family member?

It is important for diabetes care and education specialists to base their teaching on participants' identified concerns. In certain cases, participants will need some direction.

They may not know what to ask because the experience of living with diabetes is so new. When participants lack the required skills and knowledge to be self-directed, DCESs should provide the appropriate information, and then allow subsequent participant questions to further drive the experience. These probing questions are intended to help DCESs to draw upon participants' experiences. With participants' permission, the DCES should encourage participants who have successfully overcome difficulties to share their experience with the group. Using these probing questions will encourage participants to develop or improve their problem-solving skills because they can draw on situations they have or are likely to encounter.

This instructional plan is flexible and is suitable in group or one-to-one settings and for delivery in classroom or via telehealth. Unlike the slide lecture format, the instructional design of this *Curriculum* lends itself especially well to DSMES delivered via telehealth. The DCES can engage in a meaningful conversation with the participant(s), using the question prompts and other features, to address their needs and concerns and answer their most pressing questions.

Important Takeways for Diabetes Care and Education Specialists

Throughout the *Curriculum*, there are pearls of knowledge to assist, remind, and help diabetes care and education specialists to incorporate the principles for adult learning. Diabetes care and education specialists and other health care professionals should remember these words of encouragement, considerations, and teaching tips during their instruction of each chapter.

Knowledge

This feature appears throughout the *Curriculum* where appropriate to remind you, the DCES, to highlight specific information, or teaching tips. Unlike the other features, this feature is not boxed. It will appear within the running text where appropriate to assist you with important points to be sure to mention to particpants.


Knowledge

Point out to participants that ***glucose is the correct term*** and not blood sugar or sugar. Do not assume participants know that these terms are synonymous.

Survival Skills

Opinions may vary on what topics to include as survival skills, as well as the depth of instruction. Most DCESs agree that at the very least, survival skills should include prevention, recognition, and treatment of hypoglycemia for at-risk persons (eg, those taking insulin or oral insulin secretagogues); recognition and treatment of hyperglycemia; how to safely take prescribed diabetes medication, and recognition of side effects that should be reported; healthy food choices and basic meal planning; glucose monitoring and proper care of testing supplies; target glucose; and when to call the health care team for help

Meal/Snack Timing and Frequency


Survival Skill

The timing and spacing of meals and snacks are important to consider as part of the eating plan. They can aid in improved glycemia and promote more success with portion management strategies by preventing excessive hunger. Considering only the content of meals and snacks in the eating plan without discussing timing and frequency may be a barrier to meeting glucose targets.

Advanced Detail

Various aspects of self-care topics are expanded upon in specific chapters of the *Curriculum*. Diabetes care and education specialists should use these as needed, depending upon participants' level of interest, the complexity of their self-care, and the DCES's preference.

Reality Scenarios

People with diabetes face an unlimited number of barriers when trying to successfully carry out ADCES7 Self-Care Behaviors. The barriers for each participant will differ based on their situation. Diabetes care and education specialists should encourage participants to identify barriers that will likely disrupt their self-care. To help activate this process, **Chapter 4,** *Being Active,* **Chapter 6,** *Monitoring,* **Chapter 5,** *Taking Medication*, and **Chapter 8,** *Problem Solving*, include a section at the end of the chapter on common barriers to self-care, and some possible solutions. This section allows DCES to open discussions with participants about these barriers. Diabetes care and education specialists are also encouraged to challenge participants to actively engage in the problem-solving process. Also look for **discussion questions** and **interactive activities** to engage and facilitate conversations with participants. The *Reality Scenario*s are not intended to apply or be useful for every participant. In group education sessions, invite participants to brainstorm together and learn from each other's experiences in *their own words.*

Keep in mind that while you may be fascinated by the science of diabetes, participants want to learn about how it will affect their lives from day to day. Ensure you devote some time to teaching the *basic* pathophysiology of diabetes. Participants will appreciate an opportunity to grasp the rationale for the importance of self-care. However, the majority of your time with participants should be spent discussing the emotional, relational, and physical challenges *and successes* involved in living with diabetes.

This *Curriculum* emphasizes applying the content to everyday living with diabetes while translating knowledge of the topic into a behavioral action.

Identifying Facilitators

As important as it is to identify barriers, DCESs often forget about the facilitators to self-care, and the potential positives in the situation. This section calls attention to the facilitators, the people, resources, and activities that can help participants maintain participation in their self-care plan. Diabetes care and education specialists can help participants identify the people in their lives who may be supportive of their efforts, and how to maximize that support.

Setting a SMART Goal

Each chapter in the *Curriculum* includes a section entitled *Setting a SMART Goal*. In *Setting a SMART Goal*, the DCES is prompted to help the participant develop an individual goal for behavior change. In keeping with principles of adult learning, the participant should be involved in selecting their goals, but only after the participant is at a point of readiness to attempt the change in behavior.

You may find it tempting, in the interest of time, to set goals for the participant. However, this approach may not be successful if it is not participant-driven. Goals should be determined based on what the participant feels is important and needed. They must understand what is needed to make the change in their behavior, have the confidence to do it, and believe that it will lead to improved health and quality of life. A date should be set for follow-up, to evaluate progress with the selected behavior change.

Documentation of behavior change goals represents standard practice and is a requirement for program accreditation. Diabetes care and education specialists can develop tools for documenting the setting of goals.

Collaborate with your participant to set behavior change goals *after* instruction. Diabetes care and education specialists are prompted **to use the SMART acronym** as a guide to help participants set goals. *Reminder:* Goals should meet the following criteria:

- **S**—Specific; type of food, amount, timing
- **M**—Measurable; how much, when
- **A**—Achievable; challenging but within reach
- **R**—Realistic; ie, considering the participant's situation, can it be done
- **T**—Timely; short term; over the next 2 to 4 weeks

Outcomes Measurement

An ADCES Self-Care Behaviors outcomes measurement process is included in appropriate chapters.

Learning–acquiring knowledge and skills–is an immediate outcome measure, meaning that it can be measured immediately after the education session. Learning outcomes should be measured at follow-up encounters. This provides you an opportunity to assess gaps in knowledge and skills and educate accordingly.

As an intermediate outcome, behavior change requires measurement over at least 2 points in time. The status of the behavior is measured at baseline (after the education session) and again after the participant has had time to implement the new behavior.

DSMES Core Outcome Measures (ADCES7 Self-Care Behaviors)	Outcomes Measurement Process			
	Measurement/Assessment		Monitoring	Management
	Immediate Outcome Learning and Barrier Resolution	Intermediate Outcome/Behavior	Recommended Interval Between Measurement	Outcomes Information Used to Drive Decision Making and the Delivery of Care
Monitoring	**Knowledge** • Monitoring plan/schedule (structured, episodic, continuous) • Appropriate behavior data to track • Target values • Safety issues including disposal of lancets • Using data for decision making • Awareness of body's symptoms (eg, blurred vision, shortness of breath) and/or physical changes (eg, teeth, skin, gums) **Skills** • Equipment use and technical care	**Measures** • Frequency of self-monitoring • Schedule of monitoring • Unscheduled monitoring (triggered by symptoms) • Number of devices/apps used to support monitoring • Blood glucose values • Time in range (TIR) • Glucose management indicator (GMI) • Blood pressure values	**Learning outcomes** • Evaluate with each encounter (Review of automated data provides insights into knowledge and use of monitoring device(s)) **Behavioral outcomes** • Baseline • 2 to 4 weeks	**Behavior** (minimal blood glucose monitoring [BGM]) Tyler shares his blood glucose records with his DCES. The DCES identifies sporadic monitoring on weekdays. **Barrier identification** (treatment burden) The DCES praises Tyler for his recordkeeping and asks about the gaps. Tyler reports that he avoids checking blood glucose at work. **Barrier resolution** (use of continuous glucose monitoring [CGM]) The DCES reviews other options to capture blood glucose with Tyler. Tyler is curious about the continuous glucose monitor and agrees to try it. **Behavior change** (obtaining blood glucose data through BGM and CGM) After instruction on the equipment and

RESOURCES

There are recommended resources at the end of each chapter. These resources will range from websites and diabetes technology to videos and publications. The ADCES website at www.adces.org has a wealth of handouts and other resources including clinical management tools and many other resources for people living with diabetes. These resources may be downloaded and shared with participants. New resources are added to the adces.org/practice website throughout the year.

RESOURCES

Visit **adces.org/practice** for taking medication handouts and other participant handouts. Many of the handout resources from the Association of Diabetes Care & Education Specialists (ADCES) are available in multiple languages.

landscape of diabetes technology by providing learning and assessment tools, device training, professional education, and more. Visit danatech at adces.org/danatech

REFERENCES

The self-management and self-care recommendations throughout the *Curriculum* are supported by the ***Standards of Care*** and other available research and evidence. All references, regardless of copyright year, represent the most current and/or the most comprehensive research on the subject at the time this publication was printed.

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