



***Candidate Handbook
for the
American Association of Diabetes Educators
(AADE) Board Certified Advanced Diabetes
Management (BC-ADM) Examination***

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INTRODUCTION

The American Association of Diabetes Educators (AADE) is a multidisciplinary association of healthcare professionals dedicated to integrating self-management as a key outcome in the care of people with diabetes and related chronic conditions. We are constantly working toward our vision of optimal health and wellness for all people with diabetes and related chronic conditions. To help us reach this vision, we have created a dynamic organizational structure and a strong mission and values. Our mission: to promote healthy living through self-management of diabetes and related chronic conditions.

AADE certified members are primarily diabetes educators and focus on helping people with diabetes achieve behavior change goals which, in turn, lead to better clinical outcomes.

Board certification in advanced diabetes management indicates achievement of standards set by your peers in your area of practice, and it demonstrates commitment to yourself and your career and competence in your profession. Board certification is the process by which AADE validates, based on predetermined standards, an individual's knowledge, skills, and abilities in the area of advanced diabetes management.

AADE has partnered with Castle Worldwide, Inc. (Castle), a leading certification and licensure firm, to develop this examination.

Please use this candidate handbook to understand our processes of application and registration. If you have questions about the processes described here, please contact AADE at (800) 338-3633 or bcadm@aadenet.org or Castle at (919) 572-6880 or testing@castleworldwide.com.

CREDENTIAL DESIGNATION

Upon successful achievement of the board certification, advanced diabetes managers will be awarded the board certified-advanced diabetes management credentials of BC-ADM. Candidates may use the credentials as long as their certification is current.

EXAMINATION REGISTRATION

Eligibility

Candidates must complete the following before submitting an application. See the details following the chart for additional information.

	Registered Nurse	Registered Dietitian	Pharmacist	Physician Assistant	Physician
Licenses/Registration	Current, active RN license	Current, active dietitian registration	Current, active pharmacist registration/licensure	Current active physician assistant license	Current active MD/DO license
Advanced Degree*	Master's or higher degree in a relevant clinical, educational, or management area such as education (med), nutrition, gerontology, advanced diabetes management, or other relevant to credential				
Experience	500 clinical practice hours within 48 months prior to taking certification examination. (Clinical hours must be after relevant licensure and advanced degree has been obtained.)				
Level of Practice at Provider Level	Advanced/expert diabetes educators skillfully manage complex patient needs, assisting diabetes patients with therapeutic problem-solving, counseling, and regimen adjustments.				

* Other advanced degrees will be considered on an individual basis.

Registered Nurse Eligibility Criteria:

1. Hold a current, active RN license in a state or territory of the United States or the professional, legally-recognized equivalent in another country.
2. Hold a master's or higher degree in a relevant clinical, educational, or management area such as education (med), nutrition, gerontology, advance diabetes management, or other area relevant to the credential from an accredited school (e.g., Commission on Collegiate Nursing Education (CCNE), National League for Nursing Accrediting Commission (NLNAC), or the Higher Learning Commission (HKC)).
3. Within 48 months prior to applying for this certification exam, complete a minimum of 500 clinical practice hours in advanced diabetes management.

Registered Dietitian Eligibility Criteria:

1. Hold a current, active dietitian registration in a state or territory of the United States or the professional, legally-recognized equivalent in another country.
2. Hold a master's or higher degree from an ADA accredited school in a clinically relevant area, such as nutrition, public health, education (med), exercise, sports nutrition, counseling, or gerontology.
3. Within 48 months prior to applying for this certification exam, complete a minimum of 500 hours of clinical practice in advanced clinical diabetes management after obtaining registration as a dietitian.

Registered Pharmacist Eligibility Criteria:

1. Hold a current, active pharmacist registration in a state or territory of the United States or the professional, legally-recognized equivalent in another country.
2. Hold a master's or higher degree in pharmacy from an ACPE accredited school.
3. Within 48 months prior to applying for this certification exam, complete a minimum of 500 hours of clinical practice in advanced clinical diabetes management after obtaining registration as a pharmacist.

Physician Assistant Eligibility Criteria:

1. Hold a current, active physician assistant license in a state or territory of the United States or the professional, legally-recognized equivalent in another country.
2. Hold a master's or higher degree from an ARC-PA accredited school in a clinically relevant area, such as nutrition, public health, education (med), exercise, sports nutrition, counseling, or gerontology.
3. Within 48 months prior to applying for this certification exam, complete a minimum of 500 hours of clinical practice in advanced clinical diabetes management.

Physician Eligibility Criteria:

1. Hold a current, active MD/DO license in a state or territory of the United States or the professional, legally-recognized equivalent in another country.
2. Hold a master's or higher degree from an LCME or COCA accredited school in a clinically relevant area, such as nutrition, public health, education (med), exercise, sports nutrition, counseling, or gerontology.
3. Within 48 months prior to applying for this certification exam, complete a minimum of 500 hours of clinical practice in advanced clinical diabetes management.

All requirements must be completed prior to submitting your application for the examination.

Application Process

Applications must be submitted prior to examination registration. Note that the examination is computer-based and offered only through Castle's approved proctored testing centers.

Applications are accepted on a continual basis. The examination is offered during one-month windows following the application's approval. Please note that your application must be completed at least 30 days prior to the opening of the testing window. **Late applications are accepted up to 15 days prior to the opening of the testing window for an additional fee of \$50.** The testing appointment must be made at least seven (7) days prior to the test date during the scheduled testing window.

An online application is available through the AADE candidate registration system at www.castleworldwide.com/aade. You will be prompted to create an online profile that will serve as the basis for all interaction with Castle. You should record your username, password, and email address as used on the application for future reference and/or access to the system at a later time. You must register with the name that appears on the government-issued photo identification that you will use to enter the testing center to sit for your examination.

To register for the BC-ADM examination, you must submit the following application materials:

1. Completed application form, including demographic information, information associated with your 500 clinical advanced diabetes management practice hours, and attestation regarding the veracity of the information submitted
2. Electronic copy of current RN, RD, RPh, MD/DO, or PA license (or a letter from the State Board of Licensing)
3. Electronic copy of unofficial transcripts or school diploma for master's level (or higher) degree
4. Appropriate fee

Complete applications will be evaluated and candidate eligibility determined within seven (7) business days of receipt. If the application is incomplete, a notice will be issued to the candidate either by email or first-class mail. If the application is not completed within 90 days of submission, the application will be closed.

Fees

The examination fee is as follows. This fee includes the processing of the examination registration and one testing appointment.

\$600	AADE members
\$900	Non-member (membership not included)

The fee must be paid in U.S. funds to Castle by Visa or MasterCard.

Retest Fees

Candidates who fail the examination will receive information on scheduling a second testing appointment. The examination retake fee is \$220 for AADE members and \$340 for non-members. This fee must be paid before scheduling a new testing appointment.

All retest fees are non-refundable.

Deadlines

Candidates are strongly encouraged to complete their applications at least 60 days prior to their desired testing date. There are two testing windows per year – June and December. The deadline for registration for the June window is May 1 and the deadline for the December window is November 1.

Application Received By:	Application (Including \$50 Late Fee) Received By:	Testing Window:
May 1	May 15	June
November 1	November 15	December

If a candidate misses the deadline, their application is credited toward the next window.

Scheduling

As early as 30 days prior to the beginning of the testing window, Castle will send notification of eligibility to sit for the examination and will provide directions on how to schedule a testing session through Castle's online scheduling system. Most test sites will have morning and afternoon testing sessions available. Castle will do its best to accommodate the requested test site and date. Seats are filled on a first-come, first-served basis, based on test center availability.

Note that candidates who wish to test at an international test site must pay an additional scheduling fee of \$150. Payment is due at the time of scheduling.

Candidate eligibility will be valid for two consecutive testing windows, and candidates will be permitted one testing attempt per window. If a candidate does not take the examination for which he/she applied or successfully complete the application within the two consecutive testing windows, the application will be closed and the candidate must submit a new application with the required supporting documentation and "first-time" candidate fees. An email reminder will be issued to schedule testing to eligible candidates who have not yet completed test scheduling.

Candidates will receive confirmation including exact test location, date, and time via email, which must be printed and taken to the site on the test date. **The candidate must take this document to the site on the test date.**

Registration and Testing Process

1. Review this candidate handbook prior to scheduling your examination. Failure to follow the instructions can cause a delay of your examination registration. For questions regarding examination registration, contact Castle at testing@castleworldwide.com.
2. Complete the exam registration (www.castleworldwide.com/aade) and pay your testing fee. You must register with your full name as it appears on your government-issued photo identification. In order to receive important electronic correspondence about scheduling your testing session, please ensure that your email program will accept emails from ibt@castleworldwide.com.
3. Schedule a testing session. As early as 30 days prior to the testing window, Castle will send notification of eligibility to sit for the examination and will provide directions on how to schedule a testing session.

This notice will provide candidates the URL to access the online test scheduling system to select a testing session based on available seating. Candidates will select from a listing of available testing centers by geographical location and test date. Note that candidates who wish to test at an international test site must pay an additional scheduling fee of \$150. Payment is due at the time of scheduling.

Candidates must submit their test scheduling request at least seven (7) days prior to their preferred test date during the scheduled testing window.

4. You will be notified of the exact test location, date, and time via email. You must bring your printed confirmation with you to the test site.

You must also bring photo identification with signature to the test site. Acceptable forms of identification include driver's licenses, passports, and government-issued identification cards. Unacceptable forms of identification include gym memberships, warehouse memberships, school identification cards, credit cards, and identification with signature only (no photo).
5. Please plan to arrive at the testing center at least 15 minutes prior to the start of the testing session. Those who arrive late for testing sessions may not be permitted to test.
6. Sit for the examination. The examination consists of 175 multiple-choice questions. You will be given three and a half (3.5) hours to complete the examination.
7. Wait for the examination results. Examination results will be mailed approximately six (6) weeks after the close of the testing window. Examination results will be released only in writing by mail. Examination results will not be released by telephone or fax.

Eligibility Audits

Ten percent (10%) of candidate applications will be audited to ensure compliance with the eligibility criteria. Applications for audit will be selected randomly. If your application is selected for audit, you will receive a certified letter by mail and be provided with instructions on how to supply satisfactory documentation that supports your compliance with the eligibility criteria before your certificate is released.

REASONABLE ACCOMMODATIONS

Reasonable accommodations provide candidates with disabilities a fair and equal opportunity to demonstrate their knowledge and skill in the essential functions being measured by the examination. Reasonable accommodations are decided based on the individual's specific request, disability, documentation submitted, and appropriateness of the request. Reasonable accommodations do not include steps that fundamentally alter the purpose or nature of the examination.

Reasonable accommodations generally are provided for candidates who have a physical or mental impairment that substantially limits that person in one or more major life activities (e.g., walking, talking, hearing, and performing manual tasks); have a record of such physical or mental impairment; or are regarded as having a physical or mental impairment.

To apply for reasonable accommodations, the candidate must request the accommodations in the application process and provide documentation that supports reasonable accommodations provided by an appropriate licensed professional on the professional's letterhead. The documentation must include a diagnosis of the disability and specific recommendations for accommodations.

Requests for accommodations must be submitted no later than 45 days prior to opening of the candidate's preferred testing window and candidates must submit their scheduling request at least 30 days prior to their preferred test date within the testing window. It is recommended that this documentation be submitted at least 45 days prior to the preferred testing date.

For more information regarding reasonable accommodations, please contact Castle or AADE.

EXAMINATION INFORMATION

There are 175 questions on this examination. Of these, 150 are scored questions and 25 are pretest questions that are not scored. Pretest questions are used to determine how well these questions will perform before they are used on the scored portion of the examination. The pretest questions cannot be distinguished from those that will be scored, so it is important for a candidate to answer all questions. A candidate's score, however, is based solely on the 150 scored questions. Performance on pretest questions does not affect a candidate's score.

This test content outline identifies the areas that are included on the examination. The percentage and number of questions in each of the major categories of the scored portion of the examination are also shown.

Category	Domains of Practice	No. of Questions	Percent
I	Foundational Knowledge	15	10.00%
II	Assessment and Data Collection	19	12.67%
III	Diagnosis/Problem Identification	19	12.67%
IV	Planning and Intervention	45	30.00%
V	Evaluation	22	14.67%
VI	Public and Community Health	8	5.33%
VII	Quality Improvement and Research	11	7.33%
VIII	Leadership and Professional Practice	11	7.33%
	Total	150	100%

SAMPLE EXAMINATION QUESTIONS

The following questions were taken from the examination question repository and serve as samples of the question type and question content found on the certification examination. Please see the answer key in Appendix B.

1. Hyperglycemia interferes with the resolution of infections by:
 - a. Decreasing liver metabolism of infectious byproducts.
 - b. Impairing phagocytosis.
 - c. Inhibiting the growth of microorganisms.
 - d. Suppressing the stimulation of the immune response.

2. A seven-year-old child with type 1 diabetes, who is being treated with insulin injections, returns with a parent for a follow-up evaluation. The parent reports that the child does not assist with any treatment tasks. The advanced diabetes manager's next action is to:
 - a. Direct the parent to encourage the child to complete the tasks independently.
 - b. Instruct the child to keep a blood glucose log to identify patterns.
 - c. Prepare the child to give one injection per day with the parent's supervision.
 - d. Teach the child to adjust insulin doses without assistance.

3. A healthy adolescent with a two-year history of type 1 diabetes returns for a quarterly appointment. For the past month, the patient has experienced abdominal pain and diarrhea after some high carbohydrate meals. An advanced diabetes manager's first intervention is to order a:
 - a. 72-hour fecal fat collection.
 - b. Colonoscopy.
 - c. Stool sample.
 - d. Transglutaminase autoantibody test.

4. After implementing a walking program, a male patient with type 2 diabetes comes to the clinic to review blood glucose readings. The patient reports a cramping pain while he walks, which limits his ability to increase the walking distance. The patient denies swelling or warmth in either calf. What diagnostic test does the advanced diabetes manager recommend?
 - a. Ankle-brachial index
 - b. Electromyography of the lower extremities
 - c. Lumbosacral spine X-ray
 - d. Venous dopplers of the lower extremities

5. According to the American Diabetes Association's recommendations for screening for gestational diabetes, which female patient can forgo the 50-g glucose screening test procedure for women who are 24 - to 28-weeks' pregnant?
 - a. A 19-year-old African-American patient with normal body weight
 - b. A 24-year-old Caucasian patient with normal body weight
 - c. A 26-year-old Pacific Islander patient who is obese and has no family history of diabetes
 - d. A 35-year-old Hispanic patient who had a previous negative screening at 15 weeks

6. A 75-year-old patient with type 2 diabetes is admitted to the hospital with an acute myocardial infarction. In addition to elevated cardiac enzyme studies, the patient's blood glucose level is 750 mg/dL; the sodium level is 148 mEq/L; and the serum HCO₃ level is 9 mEq/L with normal plasma ketones. The patient's level of consciousness is deteriorating, and the physical examination reveals that the patient has decreased skin turgor and dry mucus membranes. This clinical picture results from:
 - a. Compensatory responses to respiratory acidosis.
 - b. Increased glomerular filtration rate and function.
 - c. Increased osmolality related to hyperglycemia and hypernatremia.
 - d. Osmotic conservation leading to cellular fluid overload.

7. A 34-year-old male patient with a body mass index of 36 has been treated for type 2 diabetes for two years. His wife reports that he snores while sleeping. Which symptom supports the presence of obstructive sleep apnea?
 - a. Headaches upon awakening
 - b. Increased mid-morning hunger
 - c. Nocturnal polyuria
 - d. Unplanned weight loss

8. The laboratory values for a 55-year-old male patient with new onset type 2 diabetes are an A1C level of 7.3%; a fasting blood glucose of 157 mg/dL; a high-density lipoprotein of 37 mg/dL; a low-density lipoprotein of 112 mg/dL; and triglycerides of 246 mg/dL. Which medication provides the greatest metabolic benefits?
 - a. Atorvastatin (Lipitor)
 - b. Ezetimibe (Zetia)
 - c. Gemfibrozil (Lopid)
 - d. Metformin (Glucophage)

9. An advanced diabetes manager plans to train a school nurse to manage a child's insulin pump therapy. To stop the insulin infusion during an emergency, the clinician recommends that the school nurse:
 - a. Clamp the tubing.
 - b. Disconnect the infusion set.
 - c. Press the "stop" button.
 - d. Program the basal rate to zero.

10. A 40-year-old female patient has a 10-year history of diabetes. The patient injects 16 units of NPH insulin and 8 units of insulin lispro (Humalog) before breakfast, and 8 units of NPH, and 4 units of insulin lispro (Humalog) before dinner. The patient's glucose pattern is: fasting blood glucose is 100 mg/dL; pre-lunch is 240 mg/dL; pre-dinner is 210 mg/dL; and bedtime is 150 mg/dL. The advanced diabetes manager recommends:
 - a. Adding 2 units of Humalog before breakfast.
 - b. Adding 4 units of Humalog before dinner.
 - c. Adding 2 units of Humalog before lunch.
 - d. Decreasing the evening NPH insulin by 2 units.

11. Which medication has been approved by the Food and Drug Administration for managing neuropathic pain in patients with diabetes?
 - a. Duloxetine (Cymbalta)
 - b. Paroxetine (Paxil)
 - c. Phenytoin (Dilantin)
 - d. Venlafaxine (Effexor)

12. A 15-year-old female patient with type 1 diabetes rarely consumes milk products. The patient's mother wants the patient to begin calcium supplementation. The advanced diabetes manager's recommendation is to:
 - a. Ingest calcium 1000 mg daily without vitamin D.
 - b. Ingest calcium-fortified food products.
 - c. Decrease the patient's use of sunscreen.
 - d. Take vitamin D 400 IU daily.

13. To achieve moderate exercise intensity for a person with hypertension and diabetes, the level of exercise is targeted at 60% to 80% of maximum heart rate. This level corresponds to what percent of maximum oxygen consumption?
- 25%
 - 30% to 40%
 - 50% to 75%
 - 80%
14. An adolescent female patient with type 1 diabetes arrives at the clinic with her mother. The patient has lost 20 lb (9.09 kg) in the last month, despite reported normal blood glucose values. The advanced diabetes manager suspects:
- A growth spurt.
 - Hormonal variability.
 - Insulin manipulation.
 - Sports training.
15. A 22-year-old patient, who has type 1 diabetes and is on an insulin pump, is scheduled for an outpatient wisdom tooth extraction in three days. Which is the most appropriate plan?
- Changing to insulin injections the day before the procedure
 - Disconnecting the pump immediately prior to the procedure
 - Infusing the pump at its normal basal rates during the procedure
 - Requesting that the dental staff check the blood glucose levels every 10 minutes during the procedure
16. An advanced diabetes manager best facilitates the learning process for adults by:
- Administering pre- and posttests.
 - Creating an environment in which the learner is an active participant.
 - Delivering content using a standardized slide presentation.
 - Insisting upon full participation.
17. An 84-year-old patient with class 2 New York heart failure was diagnosed with type 2 diabetes and started sitagliptin (Januvia) 50 mg daily one month ago. The patient's current A1C level is 7.1% and creatinine clearance is 28 mL/min. The advanced diabetes manager's recommendation is to:
- Add glyburide (Micronase).
 - Add metformin (Glucophage).
 - Increase the Januvia dose.
 - Reduce the Januvia dose.

18. A patient with type 2 diabetes recently began taking an angiotensin-converting enzyme inhibitor. Routine monitoring for this medication includes checking the patient's:
- A1C value and urine protein.
 - Serum calcium and vitamin D.
 - Serum creatinine and potassium levels.
 - Serum uric acid and total cholesterol.
19. A female patient in her 20th week of pregnancy is taking glyburide (Micronase) 10 mg daily. Her preconception A1C level was 6.8% and her current A1C level is 7.4%. For the past two weeks, the patient's blood glucose readings have been between 120 mg/dL and 140 mg/dL fasting and 120 mg/dL and 150 mg/dL one hour postprandial. The advanced diabetes manager recommends:
- Increasing the Micronase dose to 20 mg.
 - Initiating basal-bolus insulin therapy.
 - Monitoring the results of daily fetal movement.
 - Rechecking the A1C level in eight to 10 weeks.
20. A 54-year-old male patient with type 2 diabetes and asthma is obese. He has been taking glimepiride (Amaryl) 6 mg daily for a year and prednisone 15 mg daily for two weeks. The patient's fasting and postprandial blood glucose levels have increased by 70 mg/dL to 100 mg/dL since initiating prednisone. The advanced diabetes manager's most appropriate action is to recommend:
- Discontinuing the prednisone.
 - Increasing the Amaryl dose.
 - Initiating insulin therapy.
 - Rechecking the A1C level at the next visit.
21. Current recommendations for screening for diabetes and pre-diabetes in asymptomatic young adults include:
- Individuals with a high-density lipoprotein level of 52 mg/dL.
 - Individuals with a history of Addison disease.
 - Offspring of a parent with type 1 diabetes.
 - Women with polycystic ovarian syndrome.
22. Which research problem is phrased as a null hypothesis that leads to the most accurate study results?
- A diet containing 500 mg of daily calcium does not decrease the incidence of postmenopausal osteoporosis.
 - Can oral contraceptives enhance human sexuality?
 - Increasing exercise by 30 minutes a day will result in a 20% decline in the use of artificial sweeteners.
 - Which method of delivery of diabetes education is more effective, online or classroom-based?

23. An advanced diabetes manager designs a study to examine how a structured diabetes educational interaction affects hospitalized patients' scores on a validated anxiety scale. What statement about the variables in this study is accurate?
- The confounding variable is the educational interaction.
 - The dependent variable is patient anxiety score.
 - The discrete variable is hospitalization status.
 - The independent variable is the patient anxiety score.
24. An advanced diabetes manager best fulfills the advanced practice role by:
- Instructing a group of patients in the use of new blood glucose meters.
 - Participating in a partnership project with the state diabetes control program.
 - Performing foot screenings using monofilaments.
 - Providing discharge teaching to a family.
25. A 65-year-old patient, whose employer-funded insurance was recently discontinued, is prescribed several medications. What Medicare resource can assist this patient with prescription medication coverage?
- Part A
 - Part B
 - Part C
 - Part D

OTHER EXAMINATION INFORMATION

Cancellations, Rescheduling, and No-shows

You may cancel or reschedule a testing session up to four (4) business days before your testing appointment through the online scheduling system. A \$50 nonrefundable fee will apply.

Day of Testing Appointment:	Must Reschedule/Cancel By:
Monday	Tuesday of the previous week
Tuesday	Wednesday of the previous week
Wednesday	Thursday of the previous week
Thursday	Friday of the previous week
Friday	Monday of the current week
Saturday / Sunday	Tuesday of the current week

Not appearing for your testing appointment or rescheduling your exam less than four (4) business days before your testing appointment will count as your testing appointment. You will be marked as a no-show candidate and your testing fees will be forfeited.

Examination Rules

AADE and Castle follow industry standard testing rules as outlined below.

Prohibited Items

Candidates are expressly prohibited from bringing the following items to the test site:

- Cameras, cell phones, optical readers, or other electronic devices that include the ability to photograph, photocopy, or otherwise copy test materials
- Notes, books, dictionaries, or language dictionaries
- Book bags or luggage
- iPods, MP3 players, headphones, or pagers
- Calculators, computers, PDAs, or other electronic devices with one or more memories
- Personal writing utensils (i.e., pencils, pens, and highlighters)
- Watches
- Food and beverage
- Hats, hoods, or other headgear

If Castle testing personnel determine that you have brought any such items to the test site, they may be demanded and held for an indefinite period of time by Castle testing personnel. We reserve the right to review the memory of any electronic device that may be in your possession at the testing center to determine whether any test materials have been photographed or otherwise copied.

If our review determines that any test materials are in the memory of any such device, we reserve the right to delete such materials and/or retain them for subsequent disciplinary action. Upon completion of our review and any applicable deletions, we will return your device to you, but will not be responsible for the deletion of any materials that may result from our review, whether or not such materials are test materials.

By bringing any such device into the test site in contravention of our policies, you expressly waive any confidentiality or other similar rights with respect to your device, our review of the memory of your

device and/or the deletion of any materials. Castle, the examination site, and the test administration staff are not liable for lost or damaged items brought to the examination site.

Examination Scoring

Examination results will be mailed approximately six (6) weeks after the close of the testing window. Examination results will be released only in writing by mail, not by telephone or fax.

Certificates

After passing the examination, candidates will receive a personalized certificate, which is suitable for framing, and a wallet card. In the case of an eligibility audit, certificates will be held until the audit is complete.

Examination Retakes

Individuals who do not pass the certification examination may retest in the next testing window. Candidates may not take the examination more than two times in any 12-month period. Candidates who need to retest will receive a Notice to Schedule (NTS) 45 days before the next testing window. During the scheduling process, candidates will be prompted to pay the retake fee (\$220 for AADE members and \$340 for non-members). Candidates will not be officially scheduled for their retake exam until the retake fee has been paid at the end of the scheduling process.

FOR MORE PREPARATION

Demo Test

Castle offers a free online tutorial and demo test to familiarize candidates with the computer-based testing environment. The online demonstration and tutorial are accessible at any time, anywhere, through any computer with Internet access. Candidates may access the tutorial and demo on Castle's website <https://www.castleworldwide.com/castleweb/candidates/sample-tests/index.aspx>. The demo is not intended to be a review of AADE examination content.

Practice Test

A 75-item timed practice test for BC-ADM examination is available online. This practice test reflects current exam content. All items are multiple-choice format. Similar to the certification exam, this practice test includes items that reflect tasks and knowledge across the eight domain areas of advanced diabetes management. Candidates will have 90 minutes to complete the test.

The practice test is intended to supplement a candidate's overall study efforts. The total score for the practice test should not be viewed as a predictor of performance on the BC-ADM examination. Candidates are provided with an overall score plus information about their performance across each of the eight domains tested on the practice test. This test does not provide information about correct/incorrect responses at the item level.

For more information on the practice test, visit the BC-ADM page on the AADE website (<http://www.diabeteseducator.org/ProfessionalResources/Certification/BC-ADM/>).

RECERTIFICATION

Certification renewal must be completed every five (5) years to maintain your certification. Castle will send out reminders by email and U.S. mail six (6) months prior to certification expiration. It is the candidate's responsibility to update Castle with any changes in contact information.

You must submit your certification renewal application no later than 45 days prior to your certification expiration.

Recertification Requirements

Professional Development *plus* Practice Hours:

- Hold a current, active RN, RD, RPh, PA, or MD/DO license in a state or territory of the U.S. or the professional, legally-recognized equivalent in another country;
- Hold a current BC-ADM certification;
- Complete the professional development requirements for your certification specialty (must be completed within the five (5) years preceding your renewal application submission);
- Complete a minimum of 1,000 practice hours in your certification role and population/specialty (must be completed within the five (5) years preceding your renewal application submission); and
- Pay the renewal fee.

Recertification Fees

- \$500.00 - AADE members
- \$800.00 - Non AADE members

See the recertification application for more information.

Appendix A: Recommended References

ACE/AACE Statement by an American Association of Clinical Endocrinologists/American College of Endocrinology Consensus Panel on Type 2 Diabetes Mellitus: An Algorithm for Glycemic Control. *Endocrine Practice*, 2009, 15(6), 540. available at: <http://www.aace.com/pub/pdf/GlycemicControlAlgorithm.pdf>.

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Appendix B: Sample Question Answer Key

QUESTION NUMBER	CORRECT ANSWER	REFERENCE	EXPLANATION/JUSTIFICATION
1	B	Kahn RC, King GL, Smith RJ, eds. Joslin's Diabetes Mellitus. 14th ed. Philadelphia, Pa: Lippincott William & Wilkins; 2005. p. 1018.	Leukocyte phagocytosis is impaired during episodes of hyperglycemia.
2	C	Childs B, Cypress M, Spollett G, eds. Complete Nurse's Guide to Diabetes Care. Alexandria, Va: American Diabetes Association; 2005. p. 292-293, 305.	The key is correct since need to choose age-appropriate goals. Would start with self-care skills. The others are incorrect since they are not age-appropriate.
3	D	Lebovitz, Harold, ed. Therapy for Diabetes Mellitus and Related Disorders, 4th ed. American Diabetes Association, 2004, 9-10, 433.	The key is correct since celiac disease is common in type 1 diabetes and would be the first item to check when a child or adolescent presents with increase GI distress and diarrhea. The other answers are incorrect since her diagnosis is relatively new and neuropathy is a long term complication and since she is healthy and does not have diarrhea after all meals, malabsorption or parasites do not seem likely.
4	A	American Diabetes Association. Clinical Practice Recommendations. American Diabetes Association, 2009 s36-s37.	The key is correct because an ABI will determine the severity of occlusion and if further intervention is necessary. The other items are incorrect because there is no indication of a clot (doppler) or heart failure (ECHO) or nerve conduction (EMG).
5	B	ADA Clinical Practice Recommendation, 2009, Gestational Diabetes Mellitus, s16.	The American Diabetes Association recommends that pregnant women undergo screening for gestational diabetes at 24-28 weeks gestation via a 50-g 1-h oral glucose challenge. Women under 25 age years old and without risk factors may forego screening. Option A is incorrect as the patient is of ethnic origin of high risk group. Option C is incorrect as patient has two risk factors - obesity and ethnicity. Option D is incorrect as patients in high-risk categories should have screening repeated at 24-28 weeks gestation.

QUESTION NUMBER	CORRECT ANSWER	REFERENCE	EXPLANATION/JUSTIFICATION
6	C	American Association of Diabetes Educators (AADE). The Art and Science of Diabetes Self-Management Education: A Desk Reference for Healthcare Professionals. Chicago, Ill: AADE; 2006. p. 176-177.	Hyperosmolar hyperglycemic nonketotic syndrome is caused by increased osmolality occurring with hyperglycemia and hypernatremia; hyperglycemia triggered in response to MI. Option C--osmotic diuresis causes cellular fluid dehydration, not overload. Option D--decreased glomerular filtration is the hallmark of HHNS secondary to dehydration.
7	A	Fauci AS, Braunwald E, Kasper DL, Hauser SL, Longo DL, Jameson JL, Loscalzo J, eds. Harrison's Principles of Internal Medicine. 17th ed. New York, NY: McGraw-Hill; 2008.	Option A is correct because headaches upon awakening are an expected symptom of obstructive sleep apnea. Options B, C, and D are incorrect because these symptoms are not associated with obstructive sleep apnea.
8	D	White JR, Campbell RK. ADA/PDR Medications for the Treatment of Diabetes. Alexandria, Va: American Diabetes Association; 2008. p. 66.	Triglycerides are usually associated with insulin resistance. Metformin will increase insulin sensitivity, decrease glucose, and decrease triglycerides. Others will only decrease lipids.
9	B	Klingensmith G, ed. Intensive Diabetes Management. 3rd ed. Alexandria, Va: American Diabetes Association; 2003. p. 113.	During emergencies such as hypoglycemia, the infusion of insulin must be stopped. If the helper does not know how to suspend the infusion, the safest action is to disconnect the infusion set from the pump.
10	A	Klingensmith G, ed. Intensive Diabetes Management. 3rd ed. Alexandria, Va: American Diabetes Association; 2003. p. 92-95.	In this patient's BG pattern, BG levels begin to deteriorate after breakfast and hyperglycemic ranges continue throughout the day. Increasing the before breakfast rapid-acting analog (Humalog) should begin to normalize the late morning/before lunch values.
11	A	White JR, Campbell RK. ADA/PDR Medications for the Treatment of Diabetes. Alexandria, Va: American Diabetes Association; 2008. p. 411.	Of the medications listed, only Duloxetine has received regulatory approval for treating diabetic peripheral neuropathy.

QUESTION NUMBER	CORRECT ANSWER	REFERENCE	EXPLANATION/JUSTIFICATION
12	B	American Association of Diabetes Educators (AADE). The Art and Science of Diabetes Self-Management Education: A Desk Reference for Healthcare Professionals. Chicago, Ill: AADE; 2006. p. 659.	Option B is correct because teens require adequate calcium intake from calcium-rich foods. Option A is incorrect because calcium supplementation is not indicated for this age group. Option C is incorrect because sunlight may promote efficient Vitamin D metabolism, weight bearing exercise may strengthen bones but this may not correct a calcium deficient diet. Option D is incorrect because supplemental calcium in this age group with or without Vitamin D has not been proven to be effective in this age group. The RDA for calcium is not 1000mg for a 15-year-old female.
13	C	Childs B, Cypress M, Spollett G, eds. Complete Nurse's Guide to Diabetes Care. 2nd ed. Alexandria, Va: American Diabetes Association; 2008. 28.	Option C is the correct answer because this range is recommended for patients with chronic disease(s). Options A and B are incorrect because it is low intensity range and option D is incorrect because 80% is considered high intensity and can cause increased blood pressure.
14	C	Anderson, BJ and Rubin, RR eds. Practical Psychology for Diabetes Clinicians. American Diabetes Association, 2004, 241.	Eating disorders are common among adolescents, including those with diabetes. Diabulemia, or the deliberate withholding of insulin for weight loss, is an eating disorder specific to patients with diabetes. Hormonal changes and athletic training can cause great variability in blood glucose levels; however, if blood glucose levels are adequately treated, a patient's weight will remain stable. Adolescent females usually experience a growth spurt before menarche.
15	C	American Association of Diabetes Educators (AADE). The Art and Science of Diabetes Self-Management Education: A Desk Reference for Healthcare Professionals. Chicago, Ill: AADE; 2006. p. 388-389.	Key is correct because pump therapy can be safely continued with normal basal rates during outpatient procedures.
16	B	American Association of Diabetes Educators (AADE). The Art and Science of Diabetes Self-Management Education: A Desk Reference for Healthcare Professionals. Chicago, Ill: AADE; 2006. p. 601.	To engage adult learners, the environment, content, and methods must be relevant to the learner's needs, and the educational goals must be mutually agreed upon.

QUESTION NUMBER	CORRECT ANSWER	REFERENCE	EXPLANATION/JUSTIFICATION
17	D	American Association of Clinical Endocrinologists (AACE). AACE Medical Guidelines for Clinical Practice for the Management of Diabetes Mellitus.13:1:3-68; Endocrine Practice , 2007 21.	Option D is correct based on current practice guidelines to reduce to 25 mg for creatinine clearance less than 30. Option A is not correct action before decreasing Januvia dose and option B is contraindicated because of heart failure. Option C is not correct because increasing the dose is contraindicated with patient's creatinine clearance level.
18	C	White JR, Campbell RK. ADA/PDR Medications for the Treatment of Diabetes. Alexandria, Va: American Diabetes Association; 2008. p. 177.	The class of antihypertensiveness ACE inhibitors have potassium-sparing effects and may cause occasional acute decreases in renal function.
19	B	American Association of Clinical Endocrinologists (AACE). AACE Medical Guidelines for Clinical Practice for the Management of Diabetes Mellitus. Endocrine Practice 13:1:3-68, 2007 56.	Option B is correct because pregnancy hormones will continue to cause hyperglycemia and oral agents have limited effect when blood glucose levels are above 150 mg/dl. Insulin therapy will provide more ability to make changes based on the glucose trends. In addition, sulfonylureas are a Category C drug (risk cannot be ruled out) so their use should be carefully evaluated for pregnant women. Options C and D are appropriate but would not be the next plan of action to address to hyperglycemia. Option A is incorrect because once oral agent is at 50% of maximum dose its effect is at 90%. So increasing to 20 mg will not improve glycemic control and will not provide the needed flexibility required for second and third trimester of pregnancy.
20	C	White JR, Campbell RK. ADA/PDR Medications for the Treatment of Diabetes. Alexandria, Va: American Diabetes Association; 2008. p. 100-102.	Most patients will achieve maximal benefit with 1/2 to 2/3 of recommended maximum dose of a sulfonylureas (a level this patient has already exceeded). The patient's use of Prednisone has increased his insulin resistance. A further increase in the Amaryl dose will not be effective. Adding insulin, even temporarily while taking Prednisone is indicated.
21	D	American Diabetes Association. Clinical Practice Recommendations, 2009. Diabetes Care, 32:1:S1-S97; 2009. S15.	Of the choices, only option D is considered to be a risk associated with diabetes.

QUESTION NUMBER	CORRECT ANSWER	REFERENCE	EXPLANATION/JUSTIFICATION
22	A	Polit DF, Beck CT. Nursing Research: Generating and Assessing Evidence for Nursing Practice. 8th ed. Philadelphia, Pa: Lippincott Williams & Wilkins; 2008. p. 587.	The null hypothesis states that there is no relationship between variables. Of the choices, only option A is framed as a null hypothesis.
23	B	Polit DF, Beck CT. Nursing Research: Generating and Assessing Evidence for Nursing Practice. 8th ed. Philadelphia, Pa: Lippincott Williams & Wilkins; 2008. p. 58.	In a research study, "the presumed cause is the independent variable, and the presumed effect is the dependent variable." In this question, the education is the independent variable and the resulting anxiety score the dependent variable.
24	B	American Nurses Association, American Association of Diabetes Educators. Diabetes Nursing: Scope and Standards of Practice. 2nd ed. Silver Spring, Md: Nursesbooks.org; 2003. 38-39. Kulkarni K, Boucher J, Daly A, et al. American Dietetic Association: Standards of Practice and Standards of Professional Performance for Registered Dietitians (Generalist, Specialist, and Advanced) in Diabetes Care. Journal of the American Dietetic Association, 105: 819; 2005. p. 824.20.	The advanced practice diabetes professional analyzes organizational systems for barriers, promotes interdisciplinary processes, and works on influencing policy making bodies to improve patient care. Options A, C, and D address generalist activities. The CNS could engage in all of the activities, but only response B demonstrates a need for comprehensive understanding of services, systems, consumers, non-nurse groups and the possible influences on the community.
25	D	Cleverley WO, Cameron AE. Essentials of Health Care Finance. 6th ed. Sudbury, Mass: Jones & Bartlett Publishers; 2007. p. 41.	Option D is correct because Medicare coverage is for seniors at/over age 65 and is for RX coverage. Options A, B, and C are incorrect because Part A covers hospital/hospice/SNF, Part B is specific coverage for supplies and equipment, and Part C is incorrect because while it offers programs in managed care at least equal to Part A and B, the patient still must enroll in D.

Appendix C: Exam Preparation Tips

How to Study

AADE encourages candidates to prepare for the examination by using resources such as those listed in this handbook. (*A list of recommended references can be found in Appendix A.*)

Plan your review methods well in advance of the examination. Think about the study method that is best for you (e.g., individual review, study group, class) and the types of materials that are most helpful (e.g., textbooks, audio or video programs, outlines, memory aids). It may also be helpful to use materials given to you during training activities related to your work.

Managing Test Anxiety

A little anxiety regarding test taking can be helpful because it stimulates and motivates you to perform at your best; however, severe anxiety can hinder test performance. If you know that you frequently experience severe test anxiety, consider preparing yourself for the examination by developing coping mechanisms to make your tension work for you. In addition, an online demonstration and tutorial are available at <https://www.castleworldwide.com/cww/take-a-sample-test>. The demonstration and tutorial will familiarize you with the testing environment. They are not intended to be a review of AADE examination content.

Before the day of the examination, visualize and rehearse the testing situation. Imagine yourself taking the examination with a positive attitude and focused, but calm, behavior.

Take measures to reduce your stress during the examination. Use deep-breathing techniques, and be sure to stretch your muscles periodically. Such exercises can reduce both physical and mental stress. If necessary, take a few minutes to imagine a calm, pleasant scene, and repeat positive phrases.

Do not let the comments or behavior of testing personnel or other examinees make you anxious. As examinees are taking different versions of the examination, examinees will finish at different times – some finishing very early, others taking the full three and a half (3.5) hours. Examinees who finish more quickly than you may not perform any better than you. Everyone works at his or her own speed. Some of the best test performers routinely use the total allocated time. Remember that (a) there is no limit to the number of examinees who can receive passing scores, (b) there is no bonus for completing the examination early, and (c) you are not competing with anyone else.

Eating well, avoiding too much alcohol, and maintaining a regular sleep pattern for several days before the examination will help you to be physically prepared. Also, on the day before you take the test, collect all the supplies you will need and choose comfortable clothing. Knowing that you are prepared for the test will help to reduce your anxiety.

Finally, your best method for controlling your anxiety is to feel prepared for the test. Designing a study plan well in advance will help you get ready.

Tips for Taking the Examination

- Budget your time well. Because you will have three and a half (3.5) hours to complete 175 questions, you will want to complete more than half (87) in less than half the time. This is because you will want extra time after completing the full examination to review questions you

either skipped or questions you may have marked for review. Also, allow time so that every hour you can take a minute or so to relax your eyes and stretch your neck and hand muscles.

- Read each question carefully, focusing on what is being asked. If you are uncertain about the answer but nevertheless want to give a tentative response at the time, mark the test question to indicate that you want to review the test question and your answer if time allows. Go back to questions marked in this manner after completing the entire test.
- Read all options before selecting your answer. Always select the best choice.
- Do not overanalyze or try to “read into” a question. Questions are not written to be tricky. Do not assume additional information beyond what is given in the test question. All information necessary to answer the question will be given in the text of the question or scenario.
- Remember that this is an international test. The questions will be based upon an accepted knowledge base. Choose options that you know to be correct in any setting.
- If there are questions including the words “not,” “except,” or “least,” answer with particular care because you will be looking for the exception. These questions involve a reversal of your usual thought patterns.
- Pay close attention to key words such as “best,” “most,” “primary,” or “usually.” These words indicate that other options may at times be correct, but given the wording or situation in the test question, you must judge which option is the best.
- Skip difficult questions and come back to them later. Questions on the test are not ordered by difficulty (i.e., they do not go from easiest to hardest). Also, content areas (the domains) and topics are addressed randomly in questions throughout the test.
- When guessing, use the process of elimination. Treat each option as a true or false statement, and eliminate those that you would not select. Narrow your choices and then make an educated guess.
- Answer every question, because there is no penalty for guessing. Go through the entire test, answering the questions you believe you know and skipping the ones you do not. Leave time at the end of the testing period to go back to the questions you skipped or want to review. If you are running out of time, leave a minute or so at the end to complete all of the blank questions randomly. Remember, you have a 25% probability of answering a question correctly by chance alone, so don’t miss any!
- If reading English is difficult for you because English is not your primary language, maximize your time by reading and answering all the shorter questions first. After completing all of the short questions, go back and attempt to answer the longer questions.
- Review the suggested resources listed in this handbook.