The Advanced Dental Admission Test (ADAT) Program

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Director, ADA Department of Testing Services

ADEA Annual Session
Council of Students, Residents, and Fellows (COSRF)
Long Beach, CA
March 19, 2017
Overview

• ADAT Purpose
• Program Oversight
• Test Content, Design, and Construction
• Test Administration Schedule
• Administration, Eligibility, and Retest Policy
• Scoring, Reporting, Results Interpretation, and Norms
• ADAT Performance and Norms (2016)
• ADAT Updates for 2017
• Resources and Communication
Purpose

• The Advanced Dental Admission Test (ADAT) is a computer based examination designed to provide advanced dental education programs with insight into applicants’ potential for success in their program.

• The ADAT is a professionally developed, content valid examination containing questions written by dental subject matter experts.

• The ADAT enables programs to quantitatively compare applicants using a nationally standardized and objective test.

• The ADAT can be used in conjunction with other assessment tools to help inform program admission decisions.
ADAT Program Oversight

- The ADA’s Council on Dental Education and Licensure (CDEL) oversees ADAT policies.
- CDEL’s Committee on Dental Admission Testing (CDAT) monitors the program and makes recommendations to CDEL concerning policies.
- The ADA’s Department of Testing Services (DTS) implements the ADAT program under the direction of CDEL and its CDAT.
The ADAT is designed for administration to individuals seeking admission to advanced dental education programs:

- 3rd and 4th year dental students
- U.S. dentists interested in post-graduate training or degrees
- International dental students/graduates applying to advanced dental education programs or advanced standing in pre-doctoral programs.
ADAT content in 2016 was structured as follows:

- Critical Thinking
  - Biomedical Sciences
  - Clinical Sciences
- Data, Research Interpretation, & Evidence Based Dentistry
- Principles of Ethics & Patient Management
## Test Specifications Overview (2016)

<table>
<thead>
<tr>
<th>Number of Items per Subject</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Critical Thinking</strong></td>
<td></td>
</tr>
<tr>
<td>Biomedical Sciences</td>
<td>80</td>
</tr>
<tr>
<td>Clinical Sciences</td>
<td>60</td>
</tr>
<tr>
<td>Data, Research Interpretation, and Evidence Based Dentistry</td>
<td>30</td>
</tr>
<tr>
<td>Principles of Ethics and Patient Management</td>
<td>30</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>200</td>
</tr>
</tbody>
</table>
3. Which stratum layer of the epidermis contains stem cells undergoing mitosis?

A. Basale
B. Corneum
C. Granulosum
D. Lucidum
E. Spinosum
3. Which stratum layer of the epidermis contains stem cells undergoing mitosis?

A. Basale  
B. Corneum  
C. Granulosum  
D. Lucidum  
E. Spinosum
### Practice Test Sample Items

**Patient**

- Female, 85 years old

**Chief Complaint**

- “I don't like the way my dentures look.”

**Background and/or Patient History**

- Osteoarthritis
- Right hip replacement 10 years ago
- Moderate hypertension controlled with a calcium channel blocker
- Patient reports well-fitting dentures

**Current Findings**

- Lesion as shown in associated image
- Patient unaware lesion bleeds when manipulated, denies pain
- Lesion is attached to the palatal tissue through a 10mm pedunculated base

45. What is the first step in management of this patient?

- A. Perform an excisional biopsy
- B. Perform an incisional biopsy
- C. Perform a soft acrylic reline of the existing denture
- D. Request the patient remove the denture for two weeks and re-evaluate
### Practice Test Sample Items

<table>
<thead>
<tr>
<th>Patient</th>
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<tr>
<td>Female, 85 years old</td>
<td></td>
</tr>
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<tr>
<th>Chief Complaint</th>
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<tr>
<th>Current Findings</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Lesion as shown in associated image</td>
<td></td>
</tr>
<tr>
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<tr>
<td>Lesion is attached to the palatal tissue through a 10mm pedunculated base</td>
<td></td>
</tr>
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45. What is the first step in management of this patient?

A. **Perform an excisional biopsy**
B. Perform an incisional biopsy
C. Perform a soft acrylic reline of the existing denture
D. Request the patient remove the denture for two weeks and re-evaluate
Administration

• Administration dates
  • April 3 through August 31 of 2017
  • Testing windows lessen the possibility and implications of test content security breaches, thereby protecting the validity of the examination.

• Retesting policy
  • Candidates may test two times per calendar year, and are limited to two testing attempts separated by a minimum of 45 days.
  • After two testing attempts, candidates must provide DTS with proof they are actively applying to advanced dental education programs.

• Program Participation
  • A list of participating advanced dental education programs is currently posted on the ADAT website.
Fees (2017)

- 2017 ADAT fees:
  - Examination fee: $350
  - Additional ADAT score reports: $36
  - Non-accredited candidate processing fee: $135

** This Score Report fee covers score report requests made after the time of application. Score reports requested at the time of application are processed at no additional charge.
2017 Results Reporting

- ADAT scores are made available through ADEA PASS, and an online score reporting portal (DTS Hub) developed by the ADA. The following reporting schedule will be in effect for 2017.

<table>
<thead>
<tr>
<th>Type of Results</th>
<th>Test Administration Period</th>
<th>Results Posted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preliminary Results (Percentiles)</td>
<td>April 3 to May 31</td>
<td>June 15</td>
</tr>
<tr>
<td></td>
<td>April 3 to July 31</td>
<td>August 10</td>
</tr>
<tr>
<td>Official Results (Scale Scores)</td>
<td>April 3 to August 31</td>
<td>September 14</td>
</tr>
</tbody>
</table>

- Preliminary score results are reported as percentiles (not scale scores). Candidates should be aware that percentiles will change with each test administration period, as the total norm group increased. Candidate percentiles will thus change at each reporting interval. Final scale scores will be reported on September 14, 2017.
## Program Participation and Results Distribution (2016)

<table>
<thead>
<tr>
<th>Program Concentration</th>
<th>Requires</th>
<th>Accepts</th>
<th>Does Not Accept</th>
<th>% of Results Sent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Education in General Dentistry</td>
<td>5</td>
<td>8</td>
<td>5</td>
<td>14%</td>
</tr>
<tr>
<td>Dental Anesthesiology</td>
<td>1</td>
<td>--</td>
<td>--</td>
<td>1%</td>
</tr>
<tr>
<td>Dental Public Education</td>
<td>--</td>
<td>--</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Endodontics</td>
<td>7</td>
<td>3</td>
<td>7</td>
<td>10%</td>
</tr>
<tr>
<td>General Practice Residency</td>
<td>12</td>
<td>23</td>
<td>15</td>
<td>16%</td>
</tr>
<tr>
<td>Misc. (oral path, oral radiology, oral med, orofac. Pain)</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>5%</td>
</tr>
<tr>
<td>Oral and Maxillofacial Surgery</td>
<td>9</td>
<td>5</td>
<td>3</td>
<td>5%</td>
</tr>
<tr>
<td>Orthodontics and Dentofacial Orthopedics</td>
<td>5</td>
<td>5</td>
<td>2</td>
<td>16%</td>
</tr>
<tr>
<td>Orthodontics/Periodontics</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>6%</td>
</tr>
<tr>
<td>Pediatric Dentistry</td>
<td>7</td>
<td>25</td>
<td>9</td>
<td>21%</td>
</tr>
<tr>
<td>Periodontics</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>3%</td>
</tr>
<tr>
<td>Prosthodontics</td>
<td>--</td>
<td>--</td>
<td>6</td>
<td>3%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>48</td>
<td>73</td>
<td>50</td>
<td>100%</td>
</tr>
</tbody>
</table>
Results Interpretation

• A User’s Guide was created to assist programs with results interpretation. It includes information such as the following:
  • Utilization of ADAT Results in Admission Decisions
  • Evidence Supporting Use of the ADAT
  • ADAT Content and Scales
  • Interpretation of ADAT Results
  • Guidelines for Interpreting and Applying ADAT Results
  • Scale reliabilities
  • Normative information
Additional comments (2016)

- DTS removed non-performing items from scoring as soon as they were reasonably detected.
- DTS updated the ADAT User’s Guide shortly after the close of the testing window with the following information:
  - Scale reliabilities
  - Normative information
    - Overall norms
      - Descriptive statistics
      - Histograms
      - Frequency distributions
    - Norms within specialty (where possible)
  - DTS shared ADAT results with dental schools, for students and graduates who indicated they wanted their ADAT scores sent to their dental school. Individual and average performance was provided.
As was articulated in interpretational reports issued throughout the 2016 preliminary ADAT Results Reporting cycles, DTS has strongly recommended that candidates and programs focus their attention on the ADAT Overall and Critical Thinking scales. These scales contain larger numbers of items and are therefore more reliable than scales containing fewer items. Scale reliabilities are anticipated to increase in future years, as additional performance data become available.
A total of 462 ADAT administrations occurred in 2016

<table>
<thead>
<tr>
<th>Scale Type</th>
<th>Scale</th>
<th>Mean</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composite</td>
<td>ADAT Overall (ADAT)</td>
<td>500.3</td>
<td>73.7</td>
<td>230</td>
<td>700</td>
</tr>
<tr>
<td></td>
<td>Critical Thinking (CRT)</td>
<td>500.1</td>
<td>78.9</td>
<td>220</td>
<td>720</td>
</tr>
<tr>
<td>Discipline</td>
<td>Biomedical Sciences (BIO)</td>
<td>500.2</td>
<td>98.7</td>
<td>200</td>
<td>800</td>
</tr>
<tr>
<td></td>
<td>Clinical Sciences (CLI)</td>
<td>499.8</td>
<td>98.7</td>
<td>200</td>
<td>800</td>
</tr>
<tr>
<td></td>
<td>Data, Research Interpretation, &amp; Evidence Based Dentistry (DRI)</td>
<td>499.4</td>
<td>97.8</td>
<td>200</td>
<td>800</td>
</tr>
<tr>
<td></td>
<td>Principles of Ethics &amp; Patient Management (PEPM)</td>
<td>500.0</td>
<td>99.3</td>
<td>210</td>
<td>800</td>
</tr>
</tbody>
</table>
Norms – ADAT Scale Scores (2016)

Frequency distribution for the ADAT Overall scale: 2016 (N= 462)
Frequency distribution for the ADAT Critical Thinking scale: 2016 (N= 462)
Norms – ADAT Scale Scores (2016)

Frequency distribution for the ADAT Biomedical Sciences scale: 2016 (N = 462)
Norms – ADAT Scale Scores (2016)

Frequency distribution for the ADAT Clinical Sciences scale: 2016 (N= 462)
Norms – ADAT Scale Scores (2016)

Frequency distribution for the ADAT Data, Research Interpretation, & Evidence Based Dentistry scale: 2016 (N= 462)
Norms – ADAT Scale Scores (2016)

Frequency distribution for the ADAT Principles of Ethics & Patient Management scale: 2016 (N= 462)
Reflections on 2016 ADAT performance

• Generally speaking the ADAT appears to be performing well.
• Results indicate that the ADAT can be used to discriminate among candidates with lower and higher cognitive skills.
• The ADAT Overall score in particular performed very well.
• DTS noted the following issues with regard to ADAT performance:
  – The Principles of Ethics & Patient Management scale underperformed and likely does not measure what advanced education programs would like to know (i.e., whether a candidate would behave ethically).
  – Certain scales had lower than desired reliabilities.
Reflections on 2016 ADAT performance

- Identified issues were addressed as follows for 2017:
  - The Principles of Ethics & Patient Management scale has been eliminated as a separate, reported scale. Items within these areas still appear on the exam, but a separate scale score is not reported.
  - The number of items has been increased in the following scales:
    - Clinical Sciences
    - Data, Research Interpretation, and Evidence Based Dentistry
  - The ADAT administration schedule and reported scores have been adjusted to reflect these changes. The same total administration time applies (4 ½ hours).
ADAT Content Structure and Reported Scales (2017)

ADAT
Critical thinking in dentistry.

Biomedical Sciences  Clinical Sciences  Data, Research Interpretation, & Evidence Based Dentistry
Test Specifications Overview (2017)

<table>
<thead>
<tr>
<th>Number of Items per Subject</th>
<th>ADAT Overall Scale (Critical Thinking in Dentistry)</th>
<th>Biomedical Sciences</th>
<th>80</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Clinical Sciences</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Data, Research Interpretation, and Evidence Based Dentistry</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>TOTAL</strong></td>
<td><strong>200</strong></td>
<td></td>
</tr>
</tbody>
</table>
# Test Specifications (2017)

<table>
<thead>
<tr>
<th>Biomedical Sciences (80)</th>
<th>Clinical Sciences (80)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Anatomic Sciences</strong></td>
<td><strong>Endodontics</strong></td>
</tr>
<tr>
<td><strong>Biochemistry-Physiology</strong></td>
<td><strong>Operative Dentistry</strong></td>
</tr>
<tr>
<td><strong>Microbiology-Pathology</strong></td>
<td><strong>Oral and Maxillofacial Surgery / Pain Control</strong></td>
</tr>
<tr>
<td><strong>Dental Anatomy-Occlusion</strong></td>
<td><strong>Oral Diagnosis</strong></td>
</tr>
<tr>
<td><strong>Data, Research Interpretation, and Evidence Based Dentistry (40)</strong></td>
<td><strong>Orthodontics / Pediatric Dentistry</strong></td>
</tr>
<tr>
<td><strong>Study Design</strong></td>
<td><strong>Periodontics</strong></td>
</tr>
<tr>
<td><strong>Data Analysis</strong></td>
<td><strong>Pharmacology</strong></td>
</tr>
<tr>
<td><strong>Result Interpretation</strong></td>
<td><strong>Prosthodontics</strong></td>
</tr>
<tr>
<td><strong>Inference and Implication</strong></td>
<td><strong>Principles of Ethics</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Patient Management</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Case-based items</strong></td>
</tr>
</tbody>
</table>
Scoring (2017)

- ADAT official scores are reported as scale scores ranging from 200 to 800, with a mean of 500 and a target standard deviation of approximately 100 for most scales. Scores are reported in increments of 10.

- In 2017, scores are reported for the following four scales:
  1. ADAT Score: an overall score that is computed based on performance on all ADAT items. This score represents “critical thinking in dentistry.”
  2. Biomedical Sciences
  3. Clinical Sciences
  4. Data and Research Interpretation.

- The number of correct responses is NOT reported for the ADAT. Examinees do NOT receive immediate feedback concerning their test results.

- Scores are reported to the programs selected by the candidate at the time of application. Additionally, if a candidate requests their results be sent to any advanced dental education program, their results will also be made available to ADEA PASS and distributed to all programs that participate in ADEA PASS.
## Test Administration Schedule (2017)

<table>
<thead>
<tr>
<th>ADAT TESTING SCHEDULE</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tutorial</td>
<td>15 min</td>
</tr>
<tr>
<td>Biomedical Sciences (80 items)</td>
<td>95 min</td>
</tr>
<tr>
<td>Break (optional)</td>
<td>10 min</td>
</tr>
<tr>
<td>Clinical Sciences (80 items)</td>
<td>90 min</td>
</tr>
<tr>
<td>Break (optional)</td>
<td>10 min</td>
</tr>
<tr>
<td>Data, Research Interpretation, and Evidence-Based Dentistry (40 items)</td>
<td>45 min</td>
</tr>
<tr>
<td>Post Test Survey (optional)</td>
<td>5 min</td>
</tr>
<tr>
<td><strong>Total Time</strong></td>
<td>4 hrs 30 min</td>
</tr>
</tbody>
</table>
Use of ADAT Results in Admission Decisions

• With respect to ADAT participation, programs require, accept, or do not accept ADAT results at their own discretion.

• Programs make their own decisions as to the use of ADAT results in admission decisions.
  – For example, those who “require” ADAT results could simply “collect and evaluate” those results.

• DTS has surveyed advanced dental education programs to understand their intended involvement in the ADAT program in 2017.

• The 2017 program participation list has been posted. Candidates should continue to monitor this list for changes, and can contact programs directly to understand their participation status.

• Admission decisions should consider available validity evidence that supports current admission tools, as well as evidence supporting use of the ADAT.

• Programs should base their decisions on the tools that have the greatest validity in supporting admission decisions.
ADAT Content Validity Evidence

• The ADAT relies on content validity evidence (appropriateness and relevance of content). Current evidence includes the following:
  • Overall test specification content areas based on findings from an ADA Task Force and ADEA/FADEA survey on advanced dental education.
  • Clinical science test specifications were based on the practice analysis that supports National Board Dental Examination (NBDE) Part II.
  • Biomedical science test specifications similarly based on NBDE Part I.
  • CDEL reviewed and approved the test specifications and TCC members provide additional input; adjustments were made in 2017 in accordance with psychometric considerations and TCC input, in keeping with the examination purpose.
  • TCC members are dental & biomedical subject matter experts who receive extensive item writing training; many have years of experience writing National Board items.
  • The ADAT is administered under controlled, standardized testing conditions.
  • Window testing and delayed scoring is employed; any non-performing items will be eliminated prior to final scoring.
  • Test development, administration, scoring, and reporting occurs by a professionally trained staff, many of whom hold advanced degrees in testing.
  • DTS staff have years of experience in high stakes testing (e.g., NBDE, NBDHE)
ADAT Communications

• **Website**  [www.ada.org/adat](http://www.ada.org/adat)

Examination Guide, User’s Guide, Practice Test, FAQs, past presentations, program tracker spreadsheet, test specifications, reference texts, link to ADA/ADEA PASS video, Volunteer Test Constructor application, etc.

• **Presentations**

American Dental Education Association (ADEA)(3/15; 10/16); ADEA Council of Hospitals and Advanced Education Programs (COHAEP) (3/15); American Academy of Pediatric Dentistry (AAPD) (10/15); American Student Dental Association (ASDA) (1/16); ADEA Council of Students Residents and Fellows (3/16; 10/16); ADEA (3/16); American College of Prosthodontics (4/16); American Association of Orthodontists (4/16); AAPD (5/16), ADA/ASDA Board Meeting (7/16)

• **Email**  [adat@ada.org](mailto:adat@ada.org)
Two-way Communication: Listening to Students and Programs

The ADA listened to feedback from students and advanced educational programs, and took steps to facilitate the transition to the ADAT Program.

- Reduced exam fees in 2016 (from $350 to $250)
- Widened the test administration window to make it easier for candidates to test
- Provided a 100-item practice test booklet online, free of charge
- Posted an online, updated “program tracker” sheet that showed which advanced dental education programs would “require,” “accept,” or “not accept” ADAT results
- Provided preliminary results reporting to candidates and programs, to help inform decision making
- Provided programs with a user’s guide to help inform interpretation of the ADAT
- Collaborated with ADEA PASS to develop an online video involving the ADAT ([http://www.adea.org/PASSapp/2017_ADEA_PASS.aspx](http://www.adea.org/PASSapp/2017_ADEA_PASS.aspx))
- Widened the test administration window to make it easier for candidates to test

The ADA and the ADAT Program will continue to consider feedback from stakeholders and communities of interest in 2017 and beyond, in support of this examination program
Contact Information

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Questions?
Thank You