Advanced Dental Admission Test (ADAT) Program Update

AAPD Joint Academic Day
National Harbor, Maryland
May 25, 2017

Nicholas Hussong, Manager, Test Administration
Matt Grady, PhD, Senior Psychometrician
Overview

• ADAT Purpose
• Testing 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)
• 2017 ADAT Updates
• Resources
Purpose of the Advanced Dental Admission Test

• Provides advanced dental education programs with insight into applicants’ potential for success in their program.

• Professionally developed, content valid examination with questions written by dental subject matter experts.

• Programs can quantitatively compare applicants using a nationally standardized and objective test.

• Used in conjunction with other assessment tools to help inform program admission decisions.
ADAT Program Oversight

Council on Dental Education and Licensure (CDEL)
- Oversees testing program activities and policies

Committee on Dental Admission Testing (CDAT)
- Monitors program; makes policy recommendations

Department of Testing Services (DTS)
- Implements testing program under the direction of CDEL
ADAT vs. NBDEs

Key issues:

• Criterion referenced vs. norm referenced

• Admission vs. licensure

• Mission of the Joint Commission on National Dental Examinations
Candidates

Individuals seeking admission to advanced dental education programs:

- dental students
  - 3rd and 4th year

- Licensed U.S. dentists
  - applying to post-graduate programs

- International dental students/graduates
  - applying to advanced dental education programs
  - advanced standing in pre-doctoral programs.
ADAT Content Validity Evidence

ADAT relies on content validity evidence (appropriateness and relevance of content), including:

- 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 based on the practice analysis that supports NBDE Part II.

- Biomedical science test specifications similarly based on NBDE Part I.

- CDEL reviewed/approved test specifications and TCC members provide additional input; adjustments 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.

- 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 Content Structure 2016

ADAT content in 2016

ADAT

Critical Thinking

Biomedical Sciences

Clinical Sciences

Data, Research Interpretation, & Evidence Based Dentistry

Principles of Ethics & Patient Management
Critical thinking in dentistry.

ADAT

Biomedical Sciences
Clinical Sciences
Data, Research Interpretation, & Evidence Based Dentistry
### Test Specifications 2016 -2017

#### Number of Items per Subject (2016)

<table>
<thead>
<tr>
<th>Critical Thinking</th>
<th>Biomedical Sciences</th>
<th>80</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Clinical Sciences</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>Data, Research</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Interpretation, and</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Evidence Based Dentistry</td>
<td>30</td>
</tr>
<tr>
<td>Principles of Ethics and Patient Management</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td>200</td>
</tr>
</tbody>
</table>

#### Number of Items per Subject (2017)

<table>
<thead>
<tr>
<th>ADAT (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>
</tr>
<tr>
<td></td>
<td>Data, Research</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Interpretation, and</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Evidence Based Dentistry</td>
<td>40</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td>200</td>
</tr>
</tbody>
</table>
## Test Specifications 2017

### Biomedical Sciences (80)
- Anatomic Sciences
- Biochemistry-Physiology
- Microbiology-Pathology
- Dental Anatomy-Occlusion

### Data, Research Interpretation, and Evidence Based Dentistry (40)
- Study Design
- Data Analysis
- Result Interpretation
- Inference and Implication

### Clinical Sciences (80)
- Endodontics
- Operative Dentistry
- Oral and Maxillofacial Surgery / Pain Control
- Oral Diagnosis
- Orthodontics / Pediatric Dentistry
- Periodontics
- Pharmacology
- Prosthodontics

**Principles of Ethics**

**Patient Management**

**Case-based items**
2017 Administration

Administration dates: April 3 - August 31, 2017

Why testing windows?
- lessens the possibility/implication of test content security breaches
- protects the validity of the examination

Retesting policy
- Two times per calendar year; separated by minimum of 45 days
- After two testing attempts, must provide proof of applying to advanced dental education programs

Program Participation
- List of participating advanced dental education programs posted on the ADAT website
## Fees

<table>
<thead>
<tr>
<th>Service</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Examination fee</td>
<td>$350</td>
</tr>
<tr>
<td>Additional ADAT score reports</td>
<td>$36*</td>
</tr>
<tr>
<td>Non-accredited candidate processing fee</td>
<td>$135</td>
</tr>
</tbody>
</table>

* Covers score report requests made after the time of application. Score reports requested at the time of application are processed at no additional charge.
## Test Administration Schedule 2017

<table>
<thead>
<tr>
<th>Testing Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tutorial</strong></td>
</tr>
<tr>
<td><strong>Biomedical Sciences (80 items)</strong></td>
</tr>
<tr>
<td><strong>Break (optional)</strong></td>
</tr>
<tr>
<td><strong>Clinical Sciences (80 items)</strong></td>
</tr>
<tr>
<td><strong>Break (optional)</strong></td>
</tr>
<tr>
<td><strong>Data, Research Interpretation, and Evidence-Based Dentistry (40 items)</strong></td>
</tr>
<tr>
<td><strong>Post Test Survey (optional)</strong></td>
</tr>
<tr>
<td><strong>Total Time</strong></td>
</tr>
</tbody>
</table>
Participating Programs as of March 2017

- Require: 31 (10%)
- Accept, not require: 165 (54%)
- Neither: 111 (36%)

- [www.ada.org/adat](http://www.ada.org/adat)
# 2016 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

• User’s Guide created to assist with results interpretation, includes:
  
  • 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
## 2016 Norms – ADAT Scale Scores

### ADAT Scale Score Descriptive statistics (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>

A total of 462 ADAT administrations occurred in 2016
Frequency distribution for the ADAT Overall scale: 2016 (N= 462)
Frequency distribution for the ADAT Critical Thinking scale: 2016 (N= 462)
2016 Norms – ADAT Scale Scores

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

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

Frequency distribution for the ADAT Data, Research Interpretation, & Evidence Based Dentistry scale: 2016 (N= 462)
Frequency distribution for the ADAT Principles of Ethics & Patient Management scale: 2016 (N= 462)
2016 reports issued in preliminary results reporting cycles, DTS strongly recommended that candidates/programs focus on ADAT Overall and Critical Thinking scales. These scales contain larger numbers of items and are more reliable than scales containing fewer items.

Scale reliabilities are anticipated to increase in future years, as additional performance data become available.
Listening to Students and Programs

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

- Widened test administration window; expanded testing opportunity for candidates
- Provided 100-item practice test, free of charge
- Posted updated program participation list identifying programs who would “require,” “accept,” or “not accept” ADAT results
- Provided preliminary result reports to candidates/programs, to help inform decision making
- Provided User’s Guide to help inform interpretation of the ADAT
- Collaborated with ADEA PASS on an online ADAT video (http://www.adea.org/PASSapp/2017_ADEA_PASS.aspx)

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.
DTS actions after administration (2016)

✓ Removed non-performing items from scoring as soon as they were reasonably detected.

✓ Updated the 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)

✓ Shared ADAT results with dental schools (students/graduates who indicated they wanted their ADAT scores sent to their dental school). Individual and average performance was provided.
Reflections on 2016 ADAT performance

• ADAT appears to be performing well.

• Results indicate that the ADAT can be used to discriminate among candidates with lower and higher cognitive skills.

• ADAT Overall score performed very well.

• DTS noted the following issues:
  – 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.
2017 Modifications due to 2016 performance

• 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:
  o Clinical Sciences
  o Data, Research Interpretation, and Evidence Based Dentistry

• ADAT administration schedule and reported scores have been adjusted to reflect these changes. The same total administration time applies (4.5 hours).
2017 Scoring

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.
2017 Results Reporting

- Scores available through ADEA PASS and DTS Hub (ADA online score reporting portal)

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

- Preliminary score results are reported as percentiles (not scale scores).
- Percentiles will change with each test administration period, as the total norm group increased. Candidate percentiles will change at each reporting interval.
- Final scale scores will be reported on September 14, 2017.
Use of ADAT Results in Admission Decisions

• 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.

• Advanced dental education programs were surveyed to understand their intended involvement in the 2017 ADAT program.

• Program participation list is posted at www.ada.org/adat. Continue to monitor this list for changes, and 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.
<table>
<thead>
<tr>
<th>Website</th>
<th><a href="http://www.ada.org/adat">www.ada.org/adat</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Presentations</td>
<td></td>
</tr>
<tr>
<td>Examination Guide</td>
<td>Program participation list</td>
</tr>
<tr>
<td>User’s Guide</td>
<td>Test specifications</td>
</tr>
<tr>
<td>Practice Test</td>
<td>Reference texts</td>
</tr>
<tr>
<td>FAQs</td>
<td>ADA/ADEA PASS video</td>
</tr>
<tr>
<td>PPT presentations</td>
<td>Volunteer test constructor application</td>
</tr>
</tbody>
</table>

**Email**: adat@ada.org
# Contact Information

## Department of Testing Services

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>David M. Waldschmidt, PhD</td>
<td>Secretary, JCNDE and Director Department of Testing Services</td>
<td><a href="mailto:waldschmidtd@ada.org">waldschmidtd@ada.org</a></td>
</tr>
<tr>
<td>Kathleen J. Hinshaw, LDH, EdD</td>
<td>Senior Manager, Operations/DTS</td>
<td><a href="mailto:hinshawk@ada.org">hinshawk@ada.org</a></td>
</tr>
<tr>
<td>Nicholas B. Hussong, BA</td>
<td>Manager, Test Administration</td>
<td><a href="mailto:hussongn@ada.org">hussongn@ada.org</a></td>
</tr>
<tr>
<td>Terrence Wright, MA</td>
<td>Manager, Test Development</td>
<td><a href="mailto:wright@ada.org">wright@ada.org</a></td>
</tr>
<tr>
<td>Chien-Lin Yang, PhD</td>
<td>Manager, Research and Development/Psychometrics</td>
<td><a href="mailto:yangc@ada.org">yangc@ada.org</a></td>
</tr>
<tr>
<td>Ellen J. Ryske, MBA, PMP</td>
<td>Manager, Client Services &amp; Special Projects</td>
<td><a href="mailto:ryskee@ada.org">ryskee@ada.org</a></td>
</tr>
<tr>
<td>Bryan Svendby, MA, SSCP</td>
<td>Manager, Test Security and Fraud Prevention</td>
<td></td>
</tr>
</tbody>
</table>
Questions?