

# The Admission Test for Dental Hygiene (ATDH) Program

ADEA Allied Dental Program Director's Conference

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Portland, Oregon

# Overview

- ATDH purpose and governance
- Why build the ATDH?
- Standards for development
- ATDH content areas and test specifications
- Administration, test security, scoring, and reporting
- Validity evidence
- Program Participation

# ATDH Purpose and Governance

- The purpose of the ATDH is to provide dental hygiene education programs with insight into applicants' potential for success in dental hygiene programs.
- The ATDH is designed to measure candidate cognitive skills in foundational knowledge and skill areas necessary for success in dental hygiene programs.
- The ATDH is overseen by the ADA's Council on Dental Licensure (CDEL).

# Why Build the ATDH?

- Over the years, many dental hygiene program directors have asked DTS to build an admission test specifically for dental hygiene.
- When candidates enter a dental hygiene program without the necessary skills, negative outcomes can occur:
  - Candidates become frustrated, fall behind in their coursework, and start to question whether dental hygiene is the right career for them.
  - Candidates may have difficulty meeting graduation requirements and may encounter difficulties when challenging the National Board Dental Hygiene Examination (NBDHE).
  - Faculty must redirect activities in class, to address student skill deficiencies.
  - Outside of class, faculty workload increases as faculty steps in to help candidates remediate in basic areas.

# Why Build the ATDH?

- ATDH results provide an objective, fair, valid, and reliable means of evaluating and comparing candidate skills.
- Programs will have information concerning the incoming class and their readiness to pursue a dental hygiene education.
- Programs will know the relevant cognitive skill levels of an incoming class before candidates begin their studies.
  - English language skills
  - Math skills
  - Spatial relationship skills
  - Basic science skills in areas measured by the ATDH

# Why Build the ADTH?

- Professionally developed tests are objective and their performance can be evaluated and scrutinized.
- There is a desire for a strong, professionally developed measure that is valid, reliable, fair, and built exclusively for dental hygiene.
- There is a desire to assess student readiness to meet the cognitive skill demands of dental hygiene programs.

# How Should the ATDH Program be Built?

Input from the dental hygiene community was critical to establishing ATDH Program, in areas such as the following:

- Content areas to be assessed
- Level of skills to be assessed
- Administration fees and relevant considerations
- Timing of administration of the examination
- Results scales for score reporting purposes
- Results reporting schedule

The ATDH Steering Committee carefully considered input from numerous sources in establishing the ATDH Program.

- Dental hygiene surveys (Department of Testing Services and ADA Health Policy Institute)
- Dental hygiene focus groups
- The experience of members of the ATDH Steering Committee (many of whom have professional experience in dental hygiene)

# ATDH Steering Committee

## Steering Committee Members

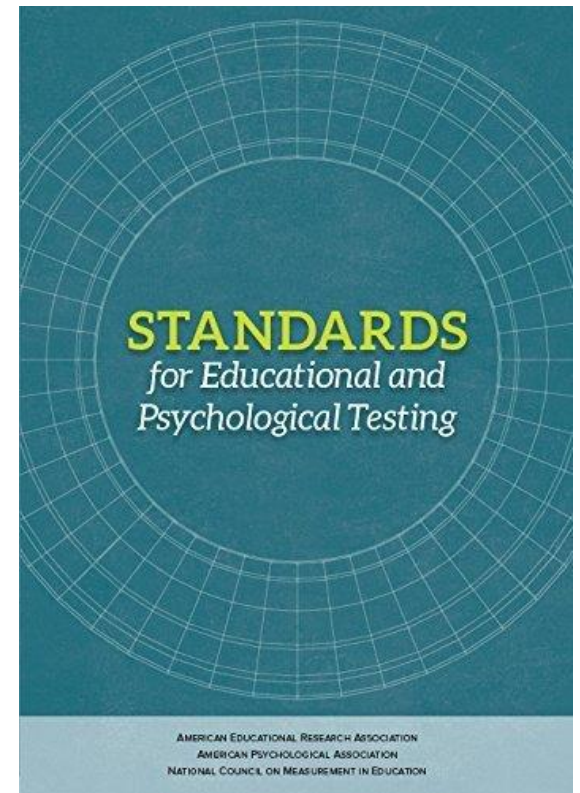
ADA Board of Trustees Member	Dr. Paul Leary (NY), Committee Chair
ADA Council on Dental Education and Licensure (CDEL) Members	Dr. Uri Hangorsky (PA) Dr. Steven Lepowsky (CT)
College or University Admission Officer	Ms. Ebony Thomas-Butler (MD)
Dental Hygiene Program Directors	Dr. Wanda Cloet (NE) Ms. Joyce Hudson (IN) Dr. Michelle Roman (NJ) Ms. Donna Warren-Morris (TX)
Ad-hoc Consultant to the Committee	Tammy R. Sanderson, RDH, MSDH

As of April 2022, governance of the ATDH was transitioned to the Council on Dental Education Licensure (CDEL).



# *The Standards for Educational and Psychological Testing*

- The *Standards* were developed by the American Educational Research Association (AERA), American Psychological Association (APA), and the National Council on Measurement in Education (NCME).
- The *Standards* provide considerations for developing and implementing valid examinations.
- The *Standards* and industry best practices have helped guide ATDH design, construction, and implementation.



# Compliance with CODA Standards

## Admissions

- 2-3 Admission of students must be based on specific written criteria, procedures and policies. Previous academic performance and/or performance on standardized national tests of scholastic aptitude or other predictors of scholastic aptitude and ability must be utilized as criteria in selecting students who have the potential for successfully completing the program. Applicants must be informed of the criteria and procedures for selection, goals of the program, curricular content, course transferability and the scope of practice of and employment opportunities for dental hygienists.**

### **Intent:**

*The dental hygiene education curriculum is a postsecondary scientifically-oriented program which is rigorous and intensive. Because enrollment is limited by facility capacity, special program admissions criteria and procedures are necessary to ensure that students are selected who have the potential for successfully completing the program. The program administrator and faculty, in cooperation with appropriate institutional personnel, should establish admissions procedures which are non-discriminatory and ensure the quality of the program.*

# ATDH Content Areas and Test Specifications

ATDH content areas and test specifications were established based on input from the following groups:

- **Dental hygiene program directors**
  - Survey of dental hygiene program directors (2019)
  - Focus groups with dental hygiene program directors (2019)
- **ATDH Steering Committee members**
  - Dental and dental hygiene practitioners and educators, including active Dental Hygiene program directors
- **Subject matter experts** in English Language Arts, Mathematics, Perceptual Ability, Biology, and General Chemistry
- **ADA Department of Testing Services (DTS) staff** with expertise and experience in high-stakes examination development

# ATDH Content Specifications

## The ATDH focuses on Critical Thinking.

“Critical thinking is the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action.”

**Scriven and Paul, 1987\***

## The ATDH assesses critical thinking through the evaluation of candidate knowledge and skills in six foundational areas:

- Reading Comprehension
- Language Usage
- Quantitative Reasoning
- Perceptual Ability
- Biology
- General Chemistry

\* Source: <https://www.criticalthinking.org/pages/defining-critical-thinking/766>

# ATDH Content Specifications

## **Reading Comprehension** (40 multiple choice items)

- Consists of questions pertaining to reading passages on various scientific topics
- Assesses the candidate's ability to read, understand, and analyze basic scientific information
  - e.g., identify the main idea presented in the text; determine whether a given statement is supported by the text

## **Language Usage** (40 multiple choice items)

- Assesses the candidate's ability to utilize English words, rules, structure, grammar, syntax, style, tone, spelling, and punctuation to facilitate effective written communication
  - e.g., identify and correct errors in grammar, syntax, or punctuation

# ATDH Content Specifications

## **Quantitative Reasoning (40 multiple items)**

- Assesses the candidate's ability to solve problems by applying critical thinking skills, along with knowledge of core principles in quantitative disciplines such as algebra, probability, and statistics
  - e.g., solve word problems by applying principles from algebra, probability, and statistics; understand and interpret quantitative data presented in graphs or tables.
- Targeted at the level of the college-ready high school graduate who has successfully completed courses in algebra I and algebra II

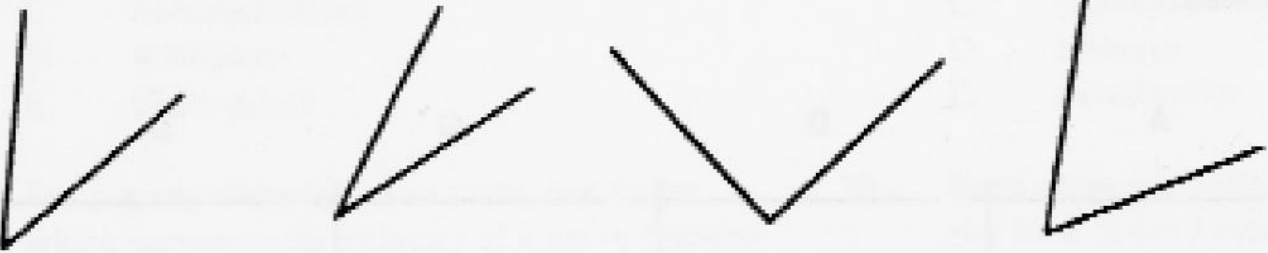
# ATDH Content Specifications

## **Perceptual Ability** (60 multiple choice items)

- Assesses the candidate's ability to accurately perceive object dimensions, and mentally manipulate objects in space.
  - e.g., differentiate among angles, imagine how three-dimensional objects appear when viewed from different angles
- Modeled after the Perceptual Ability Test (PAT) appearing on the Dental Admission Test (DAT).
  - Scores on the PAT section of the DAT have consistently demonstrated positive relationships with student grades in the first two years of dental school, particularly for pre-clinical courses (see the [2016-2018 DAT Validity Study](#))
- The PAT serves as a proxy for an assessment of hand skills.
- Based on research findings, the PAT replaced a manual dexterity test (chalk carving test) on the DAT.

# PAT Example #1: Angle Discrimination

- Examine the four interior angles and rank each in terms of degrees from SMALL to LARGE. Choose the alternative that has the correct ranking.



The image shows four interior angles labeled 1, 2, 3, and 4. Angle 1 is a small acute angle. Angle 2 is a slightly larger acute angle. Angle 3 is a wide obtuse angle. Angle 4 is a very small acute angle, similar in size to angle 1.

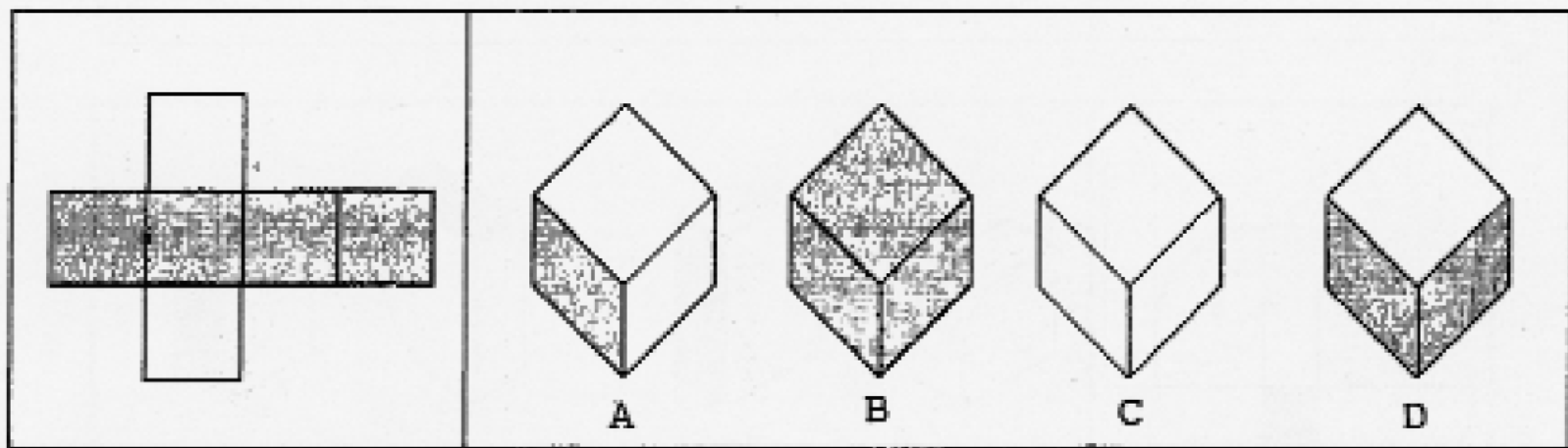
**ALTERNATIVES:**

(A.)	1 - 2 - 3 - 4
(B.)	2 - 1 - 4 - 3
(C.)	1 - 3 - 2 - 4
(D.)	3 - 4 - 1 - 2



## PAT Example #2: 3D Form Development

- A flat pattern is presented. The pattern is to be folded into a three dimensional figure. The correct figure is one of the four given to the right of the pattern. There is only one correct figure in each set. The outside of the pattern is what is seen at the left.



# ATDH Content Specifications

## **Biology** (30 multiple choice items)

- Assesses the candidate's ability to understand, apply, and integrate introductory concepts in biology that are relevant to the health sciences
- Targeted at the level of the college-ready high school graduate who has successfully completed a high school course in biology
- Assumes no prior education or training in the field of Dental Hygiene

# ATDH Content Specifications

## **General Chemistry** (30 multiple choice items)

- Assesses the candidate's ability to understand, apply, and integrate introductory concepts in general chemistry that are relevant to the health sciences
- Targeted at the level of the college-ready high school graduate who has successfully completed a high school course in chemistry
- Assumes no prior education or training in the field of Dental Hygiene

# Level of Skills Assessed

- The ATDH measures cognitive skills across the range of skill levels present for dental hygiene program applicants.
- The ATDH accurately measures the level of skills currently demonstrated by the candidate.

## Excerpt from Survey Results (December 2020)

Table 2

What is the minimum educational requirement for enrollment into your program? (n=135)

Response	Freq.	%
GED/High school diploma	26	19.3%
Less than 1 year of college	16	11.9%
1 year of college	39	28.9%
2 years of college	31	23.0%
Other (please specify)	23	17.0%

# Application and Administration

- The ATDH contains 240 questions and requires 4 hours and 50 minutes to administer.

## ATDH Administration Schedule

Section	Items	Minutes
Introduction and Tutorial		15
<b>Reading Comprehension</b>	40	50
<b>Language Usage</b>	40	30
Break		15
<b>Quantitative Reasoning</b>	40	45
<b>Perceptual Ability</b>	60	45
Break		15
<b>Biology</b>	30	30
<b>General Chemistry</b>	30	30
Post Examination Survey		15

# Administration

The ATDH is administered in fixed administration windows at Prometric professional level testing centers in the US.

Testing Type	First Day of Testing	Last Day of Testing	Candidates and dental hygiene programs receive examination results no later than:
Regular	March 30, 2022	May 31, 2022	July 1, 2022
Retakes Only*	July 19, 2022	Aug 16, 2022	4 wks after candidate attempts exam
Regular	Sep 1, 2022	Oct 31, 2022	Dec 1, 2022
Retakes Only*	Dec 15, 2022	Jan 18, 2023	4 wks after candidate attempts exam

*\*The "retakes only" window is available only to candidates who have attempted the ATDH previously. First-time candidates must complete the ATDH in a "regular" testing window.*

- Future testing windows will be identified based on when dental hygiene programs review candidate applications and make their admissions decisions.

# Administration and Security

- The ATDH is administered by Prometric at test centers in the United States and its territories (including Guam, Puerto Rico and the Virgin Islands).
- Prometric test center staff observe candidates at all times during a testing appointment; this observation includes staff walking through the secure testing lab, as well as video recording of the examination session. Test center staff are required to report behavior that might represent a violation of the rules and regulations.
- Rigorous procedures are in place to handle irregularities and appeals.
  - ATDH irregularity and appeal procedures mirror procedures in place for other examination programs implemented by DTS (e.g., NBDHE, DAT).

# Retesting Policy

- Candidates are limited to one testing attempt per administration window.
- Candidates who have had three (3) or more ATDH attempts must apply to the ATDH Program for permission to test again. From that point forward, they may retest only once per 12-month period.
- Candidates who are requesting additional testing beyond 3 attempts must submit their request in writing and must include evidence of their demonstrated intent to apply to a dental hygiene education program.



# Fees

- The ATDH Steering Committee carefully considered survey respondents' concerns about testing fees, in light of many candidates' limited resources.
- 2022 Fees
  - Exam administration fee: \$140\*
  - Additional ATDH score reports: \$50
  - Score audit (optional): \$65
  - There is no fee to dental hygiene programs, to use the ATDH.

\* Includes results reporting to all score recipients designated by the candidate at the time of application.

# Partial Fee Waiver

- Available on a per calendar year basis (January through December) for ATDH candidates experiencing severe financial hardship.
- Covers 50% of the ATDH fee, which includes the fee for the test and any official score reports requested at the time of application.
- Fifty (50) partial fee waivers are available annually. Granted on a first-come, first-served basis at the beginning of each calendar year.
- To qualify for a partial fee waiver candidates must:
  - Demonstrate financial hardship
  - Taking the ATDH for the first time
  - U.S. citizen or resident alien
  - Received financial aid from their educational institution
- The ATDH governing body will review the number of available waivers on an annual basis.

# Score Reporting

- ATDH candidates receive numeric scores in the following areas:
  - **Reading Comprehension**
  - **Language Usage**
  - **Quantitative Reasoning**
  - **Perceptual Ability**
  - **Biology**
  - **Chemistry**
  - **ATDH Overall Score (Critical Thinking in foundational skill areas)**
    - A composite score that summarizes the candidate's overall performance across the six ATDH topic areas
  - **English Language Skills**
    - A composite score that summarizes the candidate's overall performance in Reading Comprehension and Language Usage

# Score Reporting

- ATDH results are distributed through the ADEA Dental Hygiene Centralized Application Service (DHCAS) and through the Department of Testing Services (DTS) Hub.
- Results are made available simultaneously to both the candidate and dental hygiene programs indicated on the application.

# Interpreting ATDH Results

- The ADA Department of Testing Services provides programs with an ATDH User's Guide, to help them interpret and use ATDH results to inform admission decisions.
- The ATDH User's Guide contains information such as:
  - Information about ATDH content areas
  - The percentiles associated with different ATDH scores
  - Descriptive statistics associated with ATDH scores

# How have ATDH candidates performed?

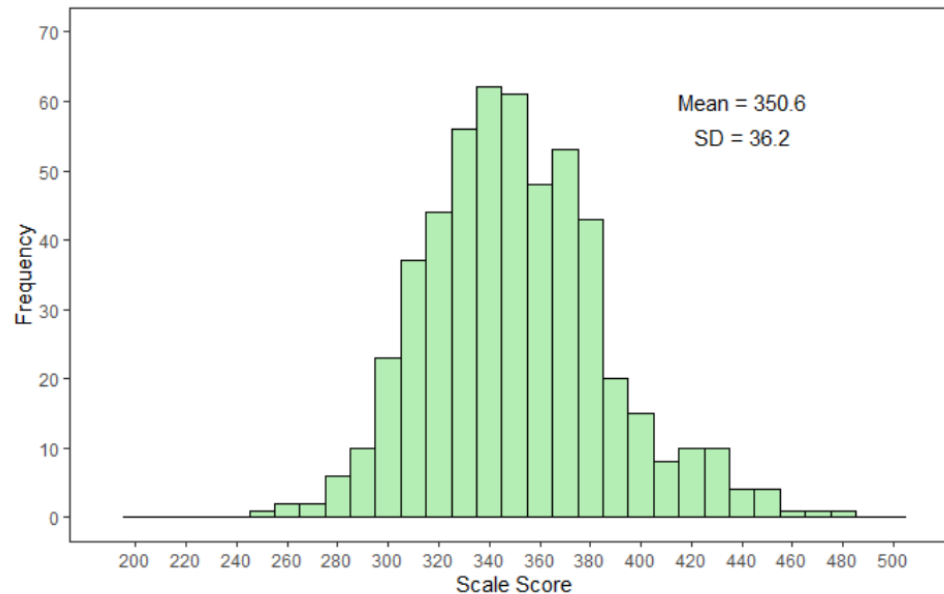
**Table 3**  
**Descriptive Statistics for ATDH Scale Scores: 2021**  
**(522 administrations)**

Scale Type	Scale	Mean	SD	Min	Max
Composite	ATDH Overall	350.6	36.2	250	480
	English Language Skills	351.9	42.8	210	500
Discipline	Reading Comprehension	349.6	48.0	200	500
	Language Usage	349.8	50.0	210	490
	Quantitative Reasoning	349.5	48.4	230	500
	Perceptual Ability	350.0	49.6	200	500
	Biology	349.5	48.2	200	500
	General Chemistry	349.0	46.8	200	500

Source: [Using the Admission Test for Dental Hygiene \(ATDH\) for Admission Purposes: A Guide for Dental Hygiene Education Programs \(2021\)](#).

# How have ATDH candidates performed?

**Appendix B1 – Frequency Distribution for ATDH Overall Scores: 2021**  
(522 Administrations)



Source: [Using the Admission Test for Dental Hygiene \(ATDH\) for Admission Purposes: A Guide for Dental Hygiene Education Programs \(2021\)](#).

# How have ATDH candidates performed?

The user's guide for dental hygiene programs provides the percentiles associated with ATDH scores:

[Using the Admission Test for Dental Hygiene \(ATDH\) for Admission Purposes: A Guide for Dental Hygiene Education Programs \(2021\).](#)

**Appendix A – Percentiles Associated with ATDH Scale Scores: 2021**  
(522 Administrations)

ATDH = ATDH Overall; ELS = English Language Skills; RCT = Reading Comprehension;  
LU = Language Usage; QRT = Quantitative Reasoning; PAT = Perceptual Ability;  
BIO = Biology; GEN = General Chemistry

Scale Score	ATDH	ELS	RCT	LU	QRT	PAT	BIO	GEN
500		99	99		99	99	99	99
490		99	99	99	99	99	99	99
480	99	99	98	99	99	99	98	99
470	99	99	98	99	99	99	98	98
460	99	99	98	99	99	99	98	98
450	99	98	98	99	99	98	96	97
440	99	97	97	99	95	96	96	97
430	98	96	96	97	95	94	95	96
420	96	95	94	97	93	93	93	94
410	94	93	92	97	90	90	92	93
400	93	89	89	89	88	88	89	89
390	90	85	86	85	84	82	87	85
380	86	81	79	85	80	78	82	80
370	78	72	71	75	77	69	76	77
360	67	64	67	65	67	65	68	69
350	58	55	59	59	61	57	57	61
340	47	47	46	49	54	46	47	50
330	35	35	37	43	43	39	37	40
320	24	26	30	31	35	31	30	30
310	16	18	25	22	26	22	23	20
300	8	13	17	19	15	19	18	15
290	4	8	11	14	9	14	11	10
280	2	4	7	7	5	9	7	6
270	1	2	5	4	3	6	4	6
260	1	1	3	3	1	3	3	3
250	1	1	2	1	1	2	1	3
240		1	1	1	1	1	1	2
230		1	1	1	1	1	1	2
220		1	1	1		1	1	2
210		1	1	1		1	1	2
200			1			1	1	1



# How reliable are ATDH scores?

**Table 2**  
**Reliability Coefficients for ATDH Scores: 2021**  
**(522 administrations)**

ATDH Scale	Reliability
ATDH Overall	.89 to .90
English Language Skills	.76 to .83
Reading Comprehension	.70 to .82
Language Usage	.63 to .67
Quantitative Reasoning	.86
Perceptual Ability	.74 to .81
Biology	.71 to .76
General Chemistry	.65 to .72

The ATDH Overall score is a highly reliable indicator of a candidate's overall critical thinking skills with respect to the foundation skill areas covered on the examination

Source: [Using the Admission Test for Dental Hygiene \(ATDH\) for Admission Purposes: A Guide for Dental Hygiene Education Programs \(2021\)](#).

# ATDH Resources

- ATDH website ([www.ada.org/atdh](http://www.ada.org/atdh))
- ATDH Candidate Guide
- ATDH User's Guide
- Sample questions
- FAQs
- Webinars
- Test specifications
- Volunteer Test Constructor application

# Validity Evidence

- The ATDH is supported based on content validity arguments.
- The ATDH is administered under controlled, standardized testing conditions.
- ADTH items are written by subject matter experts who are trained in item writing.
- The content areas covered on the ATDH are based on findings from a survey of Dental Hygiene program directors.
- CDEL and its Dental Admission Testing committee reviews and approves the test specifications and Test Constructors provide additional input.

# Program Participation

- The success of the ATDH Program and the positive outcomes it can help bring about are dependent on programs' willingness to step forward to use the examination.
- **The CDEL and its Dental Admission Testing Committee invites your program to require candidates to use the ATDH.**
- The more Dental Hygiene programs that participate, the stronger the examination and the better information it can provide (e.g., due to improvements in score precision).

# Concluding Thoughts

- The ATDH provides dental hygiene programs with a fair and objective tool to identify candidates who have the greatest likelihood of success.
- The ATDH is a valid measurement tool, with validity evidence to support its use.
- Each dental hygiene program will make its own decisions as to how to use the ATDH.

# Thank you!

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