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# Dental Admission Test (DAT) 2021 Validity Study (2018-2020 Data)



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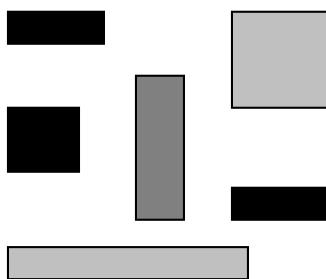
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Dental  
Admission  
Testing  
Program

Report 1  
2022

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## **Dental Admission Test (DAT) Validity Study, 2018-2020 Data**



Any suggestions concerning other ways in which these validation studies can better serve the dental education community are most welcome. Please send your comments and/or suggestions to:

Dental Admission Testing Program  
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## **Introduction**

Validity is the most important consideration for any testing program. Validity refers to the degree to which logic and evidence support the use of test scores for making decisions (e.g., pass/fail, admission, placement, grouping, etc.) concerning examinees.

This report presents the relationship among pre-dental science and pre-dental total grade point averages (GPAs), DAT scores, and academic and preclinical achievements for a sample of students during their first- and second-year in United States dental schools. Correlation coefficients were used to understand the relationship between admission selection criteria (such as GPAs and DAT scores) and success in students' first two years of dental education.

The Dental Admission Test Program recognizes the importance placed upon the validity of the DAT. The value of a report of this nature is enhanced when the sample of study participants is large and representative of the population under study. In contrast, the value is diminished by low participation and low representativeness. In past reports, participating schools were identified by name. Beginning with the 2002 report, each school is identified by a code number.

## **Data**

A total of 66 United States dental schools were eligible to participate in this study. In order for school data to be included in all analyses, schools needed to provide grades in every area that was requested (i.e., dental school GPAs and pre-dental GPAs). For the first-year class, 18 of the eligible schools did not provide grades in the areas requested, three (3) schools provided incomplete data, and 45 schools provided comprehensive data in all areas requested. Thus a total of 48 schools participated with respect to this class. However, six (6) of the 45 schools utilized the pass-fail grading system and were excluded from the analysis. For the second-year class, 18 of the eligible schools did not provide grades in the areas requested, 14 schools provided incomplete data, and 34 schools provided comprehensive data in all areas requested. Thus a total of 48 schools participated with respect to the second-year class. However, seven (7) schools utilized the pass-fail grading system and were excluded from the analysis.

The report presents findings involving first- and second-year grades in biomedical sciences and pre-clinical dental technique, and first- and second-year grade point averages (GPAs). Students' grades in the first or second year of dental school during the 2018-2019 and 2019-2020 academic years, and students' undergraduate science GPA and pre-dental GPA were submitted by the dental schools participating in this study.

The following instructions describe how schools were asked to report undergraduate and first- and second-year dental school grades:

### Pre-dental Course Grades

**Pre-dental Total GPA (4.0 Scale):** The grade point average calculated for all courses taken by the student during his/her undergraduate years. The official final recorded Pre-dental Total GPA that the dental school has for the student.

**Pre-dental Science GPA** (4.0 Scale): The grade point average calculated for all science courses taken by the student during his/her undergraduate years. The official final recorded Pre-dental Science GPA that the dental school has for the student.

#### Method for Calculating GPAs

The recommended method for calculating GPAs (e.g., 1<sup>st</sup> Year Biomedical Science GPA, Preclinical Dental Technique Total GPA, 1<sup>st</sup> Year Overall Dental GPA) is as follows:

1. Sum the number of course credits taken by the student in the category indicated (e.g., 1<sup>st</sup> Year Biomedical Science). This yields a number we will call “Sum of Credits.”
2. For each course, take the student’s grade in that course (e.g., 4.0) and multiply it by the number of credits associated with that course (e.g., 3). This yields a number we will call “Cred\_x\_Grade” (e.g., 12).
3. Sum the “Cred\_x\_Grade” for the student for all courses in the category indicated. This yields a number we will call “Sum of Cred\_x\_Grade.”
4. Divide the “Sum of Cred\_x\_Grade” by the “Sum of Credits” in the category indicated, to obtain the student’s GPA in the category indicated.

#### Course Grades in the First-Year Class

**Biomedical Science Total GPA** (4.0 Scale): Please include in this category any courses your dental school considers as 1<sup>st</sup> Year Biomedical Science courses. These could include such courses as Dental Anatomy, Gross Anatomy, Head and Neck Anatomy, Microscopic Anatomy, Oral Histology, Oral Biology, Oral Diagnosis, Biochemistry, Microbiology, Immunology, Oral Pathology, Pharmacology, Physiology, Genetics, etc.

**Preclinical Dental Technique Total GPA** (4.0 Scale): Please include in this category any courses your dental school considers as 1<sup>st</sup> Year Preclinical Dental Technique courses. These could include such courses as Preclinical Operative Technique, Fixed Prosthodontics Technique, Removable Prosthodontics Technique, etc. Please use only Preclinical courses.

**1<sup>st</sup> Year (Only) Cumulative Dental GPA** (4.0 Scale): This includes the cumulative Dental GPA of **all 1<sup>st</sup> Year dental courses**.

#### Course Grades in the Second-Year Class

**Biomedical Science Total GPA** (4.0 Scale): Please include in this category any courses your dental school considers as 2<sup>nd</sup> Year Biomedical Science courses. These could include such courses as Dental Anatomy, Gross Anatomy, Head and Neck Anatomy, Microscopic Anatomy, Oral Histology, Oral Biology, Oral Diagnosis, Biochemistry, Microbiology, Immunology, Oral Pathology, Pharmacology, Physiology, Genetics, etc.

**Preclinical Dental Technique Total GPA (4.0 Scale):** Please include in this category any courses your dental school considers as 2<sup>nd</sup> Year Preclinical Dental Technique courses. These could include such courses as Preclinical Operative Technique, Fixed Prosthodontics Technique, Removable Prosthodontics Technique, Endodontics Technique, Orthodontics Technique, Preclinical Periodontics, Preclinical Pediatric Dentistry, etc. Please use only Preclinical courses.

**2<sup>nd</sup> Year (Only) Cumulative Dental GPA (4.0 Scale):** This includes the cumulative Dental GPA of all second year dental courses. **Please include only the second year courses,** exclude first year courses from this calculation.

## Methods

In previous DAT validity study reports, large tables containing Pearson product-moment correlation coefficients ( $r$ ) and squared multiple correlation coefficients ( $R^2$  or R-Square) by school were presented to indicate the relationship between admission selection criteria—such as undergraduate GPAs (i.e., pre-dental GPA and science GPA) and DAT scores—and student performance in their first two years of dental education. As expected, results varied from school to school given the large number of participating schools. The meta-analytic approach developed by Hunter and Schmidt (1990) was adopted in the current report, to cumulate and integrate findings across the participating dental schools, thereby summarizing the relationship. This is a two-step approach. First,  $r$  and multiple  $R^2$  produced via standard multiple regressions between dental school grades and undergraduate GPAs and DAT scores were calculated for each participating dental school (see Appendix 1). The multiple regressions involve the following predictors: all DAT scores (DAT academic scores, including reading comprehension, quantitative reasoning, biology, general chemistry and organic chemistry, and the perceptual ability score) presented individually, as well as the full set of available predictors (combination of undergraduate GPAs—including pre-dental science GPA and pre-dental total GPA—as well as all DAT scores). The correlational and multiple  $R$  values for all participating dental schools serve as input data for the meta-analysis, in reporting overall findings.

Since dental schools use DAT scores to make admission decisions, applicants who were accepted into dental schools tend to have higher DAT scores than those who were not admitted. In other words, the range of DAT scores found in an enrolled dental student sample is restricted relative to the DAT score range that would be found in the full population of applicants to dental schools. Additionally, DAT scores and GPAs are not perfectly reliable. Research has shown that statistical artifacts such as range restriction and unreliability of measures can reduce the size of observed correlation coefficients. Given this, the observed relationship found within the current dataset is considered an underestimate of what would have been found had the entire pool of applicants been admitted to dental school, and if DAT scores and GPAs had been perfectly reliable. The use of the meta-analytic approach addresses these issues by implementing statistical corrections for range restriction and the unreliability of operational measures. Because dental schools must base their decisions on actual DAT scores, it would be inappropriate in this situation to correct predictor unreliability for DAT scores. Thus, the present meta-analysis included corrections to adjust range restriction in the DAT scores and unreliability in measures for dental school GPAs. These adjustments provide a more accurate understanding of the true relationship between the DAT as an admission tool, and general performance in dental school (if the latter had been perfectly measured).

More specifically, the corrections employed use standard formulas involving the ratio of the restricted and unrestricted standard deviation of students' scores on the predictor variables (e.g., DAT scores) and reliability coefficients associated with the dental school GPAs. The restricted standard deviation would be the standard deviation found in the observed sample, while the unrestricted standard deviation would be the corresponding standard deviation associated with the pool of all applicants in a given year (i.e., all DAT examinations in 2018-2019 or 2019-2020, for first and second year students, respectively). Corrected validity coefficient estimates indicate the anticipated level of association that would have been obtained if students had NOT been selected on the aforementioned predictors and if dental school GPAs were perfectly reliable criterion measures. In accordance with meta-analytic procedures, artifact distribution information used for all range restriction corrections and unreliability corrections is presented in Table 1.

Table 1. Artifact distribution used in the meta-analyses

Variable	$k_U$	Mean U	Variance U	Mean r	Variance r
Predictor (DAT Scores and Pre-dental GPAs)					
Academic Average	42	0.63	0.0132	0.95	0.00006
Total Science	42	0.66	0.0141	0.93	0.00002
Quantitative Reasoning	42	0.83	0.0152	0.84	0.00019
Reading Comprehension	42	0.77	0.0102	0.81	0.00105
Biology	42	0.77	0.0128	0.82	0.00028
General Chemistry	42	0.72	0.0106	0.82	0.00019
Organic Chemistry	42	0.76	0.0090	0.85	0.00018
Perceptual Ability	42	0.74	0.0063	0.91	0.00011
Pre-Dental Science GPA	N/A	N/A	N/A	0.82	0.00026
Pre-Dental GPA	N/A	N/A	N/A	0.82	0.00026
Criterion (Dental School GPAs)					
Biomedical Grades	N/A	N/A	N/A	0.82	0.00026
Pre-Clinical Dental Technique Grades	N/A	N/A	N/A	0.82	0.00026
Grade Point Average	N/A	N/A	N/A	0.82	0.00026
Predictor (DAT Scores)					
Academic Average	41	0.64	0.0055	0.96	0.00006
Total Science	41	0.66	0.0050	0.93	0.00001
Quantitative Reasoning	41	0.79	0.0107	0.85	0.00036
Reading Comprehension	41	0.88	0.0037	0.80	0.00078
Biology	41	0.74	0.0044	0.81	0.00032
General Chemistry	41	0.74	0.0073	0.82	0.00036
Organic Chemistry	41	0.78	0.0078	0.85	0.00012
Perceptual Ability	41	0.72	0.0045	0.91	0.00007
Pre-Dental Science GPA	N/A	N/A	N/A	0.82	0.00026
Pre-Dental GPA	N/A	N/A	N/A	0.82	0.00026
Criterion (Dental School GPAs)					
Biomedical Grades	N/A	N/A	N/A	0.82	0.00026
Pre-Clinical Dental Technique Grades	N/A	N/A	N/A	0.82	0.00026
Grade Point Average	N/A	N/A	N/A	0.82	0.00026

Note:  $U$  = ratio for range restriction;  $k_U$  = number of ratios in the distribution;  $r$  = reliability in the distribution;

Table 2A and 2B provide the results of the meta-analysis. In interpreting these results, the following should be noted:

- The observed weighted mean correlation coefficient ( $r_{obs}$ ) is the average correlation coefficients of all participating schools weighted by the sample size of each school and calculated following the meta-analytic approach introduced by Hunter & Schmidt (1990, p. 100).
- If the correlation coefficient of one school does not appear to be consistent with those of other schools, this coefficient is considered an outlier in the meta-analytic framework. Inclusion of outliers in the analysis will typically lead to a possible shift in the mean coefficient. Thus, this study employed the sample-adjusted meta-analytic deviance (SAMD) statistic developed by Huffcutt & Arthur (1995) to detect the presence of outliers, which were then removed in the calculation of the corrected correlation coefficient. Corrected correlation coefficients with the outlier(s) ( $\rho_{with\ outlier}$ ) present and without the outlier(s) ( $\rho$ ) present are shared in this report.
- The corrected correlation coefficients ( $\rho$ ) reported in Tables 2A and 2B show the relationships between dental school performance and students' prior achievement as indicated by undergraduate GPAs and DAT scores.
- A 95% credibility interval around the corrected correlation coefficients was constructed and reported. The credibility interval helps determine the generalizability of the corrected correlation coefficients. A credibility interval that does not include zero indicates valid generalization of corrected correlation coefficients.

## Results and Discussion

### PART I: Results of Meta-analysis for the First-Year Class

Table 2A. Correlations between First-Year Dental School Grades and Predictors

Variable	N	K	$r_{obs}$	$SD_{obs}$	$\rho_{\text{with outlier}}$	$\rho$	$SD_{\rho}$	95% Credibility Interval
Biomedical Grades								
Academic Average	5429	36	0.37	0.09	0.59	<b>0.60</b>	0.07	0.47 – 0.73
Total Science	6032	40	0.36	0.10	0.55	<b>0.56</b>	0.08	0.39 – 0.72
Quantitative Reasoning	5767	40	0.20	0.11	0.28	<b>0.27</b>	0.09	0.09 – 0.46
Reading Comprehension	5806	39	0.19	0.08	0.27	<b>0.27</b>	0.00	0.27 – 0.27
Biology	6170	41	0.29	0.10	N/A	<b>0.41</b>	0.06	0.27 – 0.55
General Chemistry	6170	41	0.26	0.10	N/A	<b>0.38</b>	0.05	0.24 – 0.52
Organic Chemistry	6170	41	0.27	0.12	N/A	<b>0.38</b>	0.08	0.25 – 0.61
Perceptual Ability	6007	40	0.18	0.11	0.27	<b>0.26</b>	0.06	0.10 – 0.42
Pre-Dental Science GPA*	5765	39	0.28	0.12	0.35	<b>0.33</b>	0.11	0.11 – 0.55
Pre-Dental GPA*	5386	36	0.30	0.10	0.36	<b>0.35</b>	0.08	0.21 – 0.50
All DAT Scores**†	5375	38	0.43	0.10	0.48	<b>0.47</b>	0.07	0.33 – 0.61
All Predictors**†	5019	36	0.50	0.08	0.56	<b>0.55</b>	0.06	0.44 – 0.66
Pre-Clinical Dental Technique Grades								
Academic Average	5212	37	0.23	0.10	0.40	<b>0.40</b>	0.09	0.23 – 0.56
Total Science	5662	39	0.20	0.12	N/A	<b>0.33</b>	0.15	0.04 – 0.61
Quantitative Reasoning	5662	39	0.18	0.10	N/A	<b>0.24</b>	0.06	0.12 – 0.35
Reading Comprehension	5273	37	0.16	0.09	0.22	<b>0.23</b>	0.05	0.13 – 0.32
Biology	5449	38	0.12	0.11	0.19	<b>0.18</b>	0.08	0.03 – 0.39
General Chemistry	5662	39	0.16	0.11	N/A	<b>0.24</b>	0.10	0.05 – 0.43
Organic Chemistry	5662	39	0.15	0.12	N/A	<b>0.22</b>	0.09	0.02 – 0.45
Perceptual Ability	5260	37	0.26	0.10	0.38	<b>0.38</b>	0.09	0.21 – 0.55
Pre-Dental Science GPA*	5286	37	0.24	0.12	0.26	<b>0.28</b>	0.10	0.08 – 0.49
Pre-Dental GPA*	5393	37	0.24	0.12	0.27	<b>0.28</b>	0.11	0.07 – 0.49
All DAT Scores**†	5662	39	0.37	0.10	N/A	<b>0.41</b>	0.07	0.27 – 0.56
All Predictors**†	5429	37	0.44	0.10	0.48	<b>0.48</b>	0.08	0.32 – 0.64
Grade Point Average								
Academic Average	6269	42	0.36	0.11	N/A	<b>0.58</b>	0.10	0.38 – 0.77
Total Science	6269	42	0.33	0.11	N/A	<b>0.53</b>	0.11	0.31 – 0.74
Quantitative Reasoning	5565	39	0.22	0.10	0.26	<b>0.29</b>	0.07	0.17 – 0.42
Reading Comprehension	6269	42	0.21	0.10	N/A	<b>0.29</b>	0.08	0.14 – 0.44
Biology	6269	42	0.26	0.11	N/A	<b>0.37</b>	0.10	0.18 – 0.56
General Chemistry	6269	42	0.25	0.10	N/A	<b>0.37</b>	0.09	0.21 – 0.53
Organic Chemistry	6269	42	0.25	0.11	N/A	<b>0.36</b>	0.11	0.14 – 0.58
Perceptual Ability	5785	39	0.21	0.09	0.32	<b>0.31</b>	0.06	0.20 – 0.42
Pre-Dental Science GPA*	5982	41	0.29	0.13	0.35	<b>0.34</b>	0.12	0.11 – 0.57
Pre-Dental GPA*	5819	39	0.32	0.10	0.36	<b>0.38</b>	0.08	0.22 – 0.54
All DAT Scores**†	5485	37	0.44	0.09	0.47	<b>0.47</b>	0.07	0.34 – 0.60
All Predictors**†	5485	37	0.50	0.08	0.55	<b>0.55</b>	0.06	0.44 – 0.67

Note. k = number of schools;  $r_{obs}$  = observed sample-size-weighted average correlation;  $SD_{obs}$  = standard deviation of observed correlations;  $\rho$  = corrected correlation coefficient;  $SD_{\rho}$  = standard deviation of corrected correlation coefficient; \* Not corrected for range restriction; † Multiple R

Table 2A presents the results of the meta-analysis involving first-year dental school grades and various predictors. These predictors represent either undergraduate GPAs (pre-dental GPA and science GPA) or DAT scores (two composite scores: academic average and total science; and six individual DAT scores: quantitative reasoning, reading comprehension, biology, general chemistry, organic chemistry, and perceptual ability) or a combination of both such as all DAT scores and the full set of all predictors. The results are summarized below.

DAT academic average score ( $\rho=0.60$ ), DAT total science score ( $\rho=0.56$ ), all predictors ( $\rho=0.55$ ), and all DAT scores ( $\rho=0.47$ ) showed the strongest relationships with first-year biomedical grades. Biology score ( $\rho=0.41$ ), general chemistry score ( $\rho=0.38$ ), organic chemistry

score ( $\rho=0.38$ ), pre-dental GPA ( $\rho=0.35$ ), and pre-dental science GPA ( $\rho=0.33$ ) appear to be more strongly related to first-year biomedical grades than are reading comprehension score ( $\rho=0.27$ ), quantitative reasoning score ( $\rho=0.27$ ), and perceptual ability score ( $\rho=0.26$ ).

Correlations with first-year pre-clinical dental technique grades are lower than those obtained for first-year biomedical grades with the exception of the perceptual ability score. Among the six individual DAT scores, perceptual ability score ( $\rho=0.38$ ) has the strongest relationship with first-year pre-clinical dental technique grades.

The pattern of correlations involving first-year grade point average with pre-dental GPA, pre-dental science GPA and all DAT scores is moderately similar to that of first-year biomedical grades. DAT academic average score ( $\rho=0.58$ ), all predictors ( $\rho=0.55$ ), DAT total science score ( $\rho=0.53$ ), and all DAT scores ( $\rho=0.47$ ) are the strongest predictors of first-year grade point average. Among the remaining predictors, pre-dental GPA ( $\rho=0.38$ ), biology score ( $\rho=0.37$ ), general chemistry score ( $\rho=0.37$ ), organic chemistry score ( $\rho=0.36$ ), pre-dental science GPA ( $\rho=0.34$ ), and perceptual ability score ( $\rho=0.31$ ) are also positively related to first-year grade point average.

It should be noted that because the distributions of pre-dental GPA, pre-dental science GPA, all DAT scores, and all predictors of all the applicants are unknown, it is impossible to correct for range restriction for these predictors. Therefore,  $p$  values for these predictors are very likely to be even higher than the values that are currently being reported. Also, the 95% credibility interval for each corrected correlation coefficient does not include zero, which further supports the assertion that the predictors are in fact related to dental school performance.

## PART II: Results of Meta-analysis for the Second-Year Class

Table 2B. Correlations between Second-Year Dental School Grades and Predictors

Variable	N	K	$r_{obs}$	$SD_{obs}$	$p_{outlier}$	$p$	$SD_p$	95% Credibility Interval
Biomedical Grades								
Academic Average	5909	39	0.32	0.08	0.52	<b>0.53</b>	0.03	0.46 – 0.59
Total Science	5808	38	0.28	0.09	0.45	<b>0.46</b>	0.07	0.32 – 0.60
Quantitative Reasoning	5558	39	0.17	0.09	0.25	<b>0.24</b>	0.04	0.17 – 0.31
Reading Comprehension	5969	40	0.19	0.09	N/A	<b>0.30</b>	0.05	0.20 – 0.39
Biology	5969	40	0.24	0.10	N/A	<b>0.35</b>	0.07	0.21 – 0.48
General Chemistry	5777	39	0.21	0.09	0.32	<b>0.33</b>	0.07	0.20 – 0.46
Organic Chemistry	5969	40	0.23	0.08	N/A	<b>0.35</b>	0.03	0.29 – 0.40
Perceptual Ability	5993	39	0.14	0.11	0.21	<b>0.21</b>	0.12	0.02 – 0.44
Pre-Dental Science GPA*	4264	25	0.28	0.08	0.37	<b>0.34</b>	0.05	0.24 - 0.44
Pre-Dental GPA*	4428	26	0.30	0.09	0.38	<b>0.36</b>	0.07	0.22 - 0.50
All DAT Scores†	4017	25	0.40	0.08	0.45	<b>0.45</b>	0.04	0.37 - 0.52
All Predictors†	4301	26	0.48	0.07	0.54	<b>0.53</b>	0.04	0.46 - 0.61
Pre-Clinical Dental Technique Grades								
Academic Average	5506	38	0.17	0.09	0.28	<b>0.28</b>	0.06	0.16 – 0.41
Total Science	5394	38	0.15	0.09	0.27	<b>0.26</b>	0.06	0.15 – 0.37
Quantitative Reasoning	5274	38	0.14	0.10	0.18	<b>0.19</b>	0.06	0.07 – 0.31
Reading Comprehension	5558	39	0.13	0.10	N/A	<b>0.19</b>	0.08	0.04 – 0.35
Biology	5394	38	0.11	0.09	0.17	<b>0.16</b>	0.03	0.11 – 0.22
General Chemistry	5111	37	0.11	0.09	0.18	<b>0.18</b>	0.05	0.09 – 0.27
Organic Chemistry	5558	39	0.15	0.10	N/A	<b>0.23</b>	0.08	0.07 – 0.38
Perceptual Ability	5558	39	0.18	0.09	N/A	<b>0.27</b>	0.07	0.14 – 0.40
Pre-Dental Science GPA*	4084	25	0.27	0.10	0.30	<b>0.33</b>	0.08	0.16 - 0.49
Pre-Dental GPA*	3757	23	0.31	0.08	0.33	<b>0.38</b>	0.05	0.28 - 0.47
All DAT Scores†	4443	27	0.33	0.08	N/A	<b>0.37</b>	0.04	0.29 - 0.40
All Predictors†	4443	27	0.42	0.08	N/A	<b>0.46</b>	0.06	0.35 - 0.58
Grade Point Average								
Academic Average	5940	40	0.32	0.09	0.52	<b>0.53</b>	0.08	0.38 – 0.67
Total Science	5776	39	0.27	0.09	0.45	<b>0.45</b>	0.07	0.32 – 0.58
Quantitative Reasoning	5658	40	0.18	0.09	0.27	<b>0.26</b>	0.04	0.18 – 0.34
Reading Comprehension	6069	41	0.19	0.09	N/A	<b>0.28</b>	0.07	0.15 – 0.42
Biology	6069	41	0.23	0.10	N/A	<b>0.33</b>	0.07	0.19 – 0.47
General Chemistry	5713	39	0.20	0.09	0.31	<b>0.31</b>	0.04	0.24 – 0.38
Organic Chemistry	5940	40	0.23	0.08	0.33	<b>0.34</b>	0.03	0.29 - 0.40
Perceptual Ability	6069	41	0.20	0.11	N/A	<b>0.30</b>	0.10	0.10 – 0.49
Pre-Dental Science GPA*	4854	28	0.33	0.10	N/A	<b>0.40</b>	0.09	0.21 - 0.59
Pre-Dental GPA*	4752	27	0.35	0.09	0.42	<b>0.43</b>	0.08	0.28 - 0.58
All DAT Scores†	4107	25	0.41	0.08	0.44	<b>0.45</b>	0.04	0.36 - 0.53
All Predictors†	4076	25	0.51	0.06	0.55	<b>0.56</b>	0.02	0.52 - 0.59

Note. k = number of schools;  $r_{obs}$  = observed sample-size-weighted average correlation;  $SD_{obs}$  = standard deviation of observed correlations;  $p$  = corrected correlation coefficient;  $SD_p$  = standard deviation of corrected correlation coefficient; \* Not corrected for range restriction.

† Multiple R

Table 2B presents the results of the meta-analysis involving second-year dental school grades and various predictors. These predictors represent either undergraduate GPAs (pre-dental GPA and science GPA) or DAT scores (two composite scores: academic average and total science; and six individual DAT scores: quantitative reasoning, reading comprehension, biology, general

chemistry, organic chemistry, and perceptual ability) or a combination of both such as all DAT scores and the full set of all predictors. The results are summarized below.

All predictors ( $\rho=0.53$ ), DAT academic average score ( $\rho=0.53$ ), DAT total science score ( $\rho=0.46$ ), and all DAT scores ( $\rho=0.45$ ) are more strongly related to second-year biomedical grades than the other predictors. Pre-dental GPA ( $\rho=0.36$ ), biology score ( $\rho=0.35$ ), organic chemistry score ( $\rho=0.34$ ), pre-dental science GPA ( $\rho=0.34$ ), and general chemistry score ( $\rho=0.33$ ) appear to be slightly better predictors of second-year biomedical grades than are reading comprehension score ( $\rho=0.30$ ) and quantitative reasoning score ( $\rho=0.24$ ). The perceptual ability score ( $\rho=0.21$ ) appears to have the lowest level of association with second-year biomedical grades.

Correlations with second-year pre-clinical dental technique grades are lower than those obtained for second-year biomedical grades with the exception of the perceptual ability score and pre-dental GPA. Of the six individual DAT scores, the perceptual ability score ( $\rho=0.27$ ) has the strongest relationship with second-year pre-clinical dental technique grades.

The pattern of correlations involving second-year grade point average with pre-dental GPA, pre-dental science GPA and all DAT scores is moderately similar to that of second-year biomedical grades. All predictors ( $\rho=0.56$ ), DAT academic average score ( $\rho=0.53$ ), DAT total science score ( $\rho=0.45$ ), all DAT scores ( $\rho=0.45$ ), pre-dental GPA ( $\rho=0.43$ ), and pre-dental science GPA ( $\rho=0.40$ ) are the strongest predictors of second-year grade point average. Among the remaining predictors, organic chemistry score ( $\rho=0.34$ ), biology score ( $\rho=0.33$ ), general chemistry score ( $\rho=0.31$ ), and perceptual ability score ( $\rho=0.30$ ) appear to be more strongly related to second-year grade point average than reading comprehension score ( $\rho=0.28$ ) and quantitative reasoning score ( $\rho=0.26$ ).

It should be noted that because the distributions of pre-dental GPA, pre-dental science GPA, all DAT scores, and all predictors for all the applicants are unknown, it is impossible to correct for range restriction for these predictors. Therefore,  $\rho$  values for these predictors are very likely to be even higher than the values that are currently being reported. Also, the 95% credibility interval for each corrected correlation coefficient does not include zero, which further supports the assertion that the predictors are in fact related to dental school performance.

### **Limitations**

The data in this report are based on a sample consisting of dental students from 42 United States dental schools. A limitation of this study is that not all schools reported data in all areas. To the degree that the present sample is not representative of the full population, this would limit the ability to generalize conclusions from this sample to the entire dental school population. Having noted this, it should also be recognized that results reported for individual schools provide extremely valuable information for those participating schools. This information can be used to help optimize school admission practices.

Although the corrected validity coefficients account for range restriction in the DAT scores, it should be noted that other predictors (i.e., pre-dental GPA and pre-dental science GPA) and criteria (i.e., biomedical grades, preclinical dental technique grades, and grade point average) also likely suffer from range restriction. In other words, since higher DAT scores and higher

undergraduate GPAs are associated with higher first- and second-year grades, dental student samples (which consist of these higher scoring individuals) would likely contain fewer students with poor dental grades than it would had this predictor not been utilized in admission decisions. Range restriction reduces the magnitude of obtained correlation coefficients. The net impact of these statistical artifacts is that reported correlations likely underestimate the true magnitude of the relationship between the predictors and true dental school performance. In short, the true correlation between DAT scores and dental school performance is likely to be even larger than the values that are currently being reported.

## **Conclusions**

This study found that DAT scores and undergraduate GPAs were strong individual predictors of student performance in dental school. When these predictors were taken as a set, the total contribution of the set represented a more powerful predictor than that obtained when looking at each predictor individually. The criterion-related validity evidence presented in this report is consistent with the results of previous DAT validity studies, and should reassure admission committees of the continued value of including DAT scores as part of their selection criteria.

## **References**

- Hunter, J.E., & Schmidt, F.L. (1990). *Methods of meta-analysis: Correcting error and bias in research findings*. Newbury Park, CA: Sage.
- Huffcutt, A.I., & Arthur, W., Jr. (1995). Development of a new outlier statistic for meta-analytic data. *Journal of Applied Psychology*, 80, 327–334.

**Appendix 1. Pearson Product-Moment Correlation Coefficients and Multiple Correlations between First-Year and Second-Year Dental School Grades and Predictors (Undergraduate GPAs and DAT Scores)**

In interpreting the tables presented in this appendix, the following should be noted:

- Tables 1 through 3 present Pearson Product-Moment Correlation Coefficients ( $r$ ) and Tables 4 through 6 present squared multiple correlations ( $R^2$ ) between 1) first-year dental school grades and 2) undergraduate GPAs and DAT scores.
- Tables 7 through 9 present Pearson Product-Moment Correlation Coefficients ( $r$ ) and Tables 10 through 12 present squared multiple correlations ( $R^2$ ) between 1) second-year dental school grades and 2) undergraduate GPAs and DAT scores.
- Coefficients which are significant at the 0.05 level are flagged with an asterisk and displayed in bold face. At the .05 level, there is a 95% probability that the obtained results are not attributable to chance.
- Numbers reported in rows labeled “# of Correlations” or “# of Multiple  $R^2$ s” represent the number of schools for which sufficient data were available to perform the analysis.
- “# of Significant Correlations” and “# of Significant Multiple  $R^2$ s” represent the number of schools for which the computed coefficient was significant at the 0.05 level.
- “Percent Significant” is a ratio representing the number of significant coefficients (the second row) divided by the total number of coefficients (the first row). This value is expressed as a percentage.
- “Median Correlation” or “Median  $R^2$ ” is the value of the corresponding coefficient (i.e., the Correlation or  $R^2$ ) appearing at the 50<sup>th</sup> percentile within the distribution of coefficients.







**Table 4**  
**First Year Biomedical Grades Regressed with Pre-Dental GPA, Science GPA, and DAT Scores**

School Code	Pre-Dental GPA	Science GPA	DAT Academic Scores	All DAT Scores	All Predictors
D02	<b>0.13*</b>	<b>0.14*</b>	<b>0.28*</b>	<b>0.30*</b>	<b>0.36*</b>
D03	N/Av	N/Av	N/Av	N/Av	N/Av
D05	0.00	0.00	<b>0.11*</b>	<b>0.14*</b>	<b>0.15*</b>
D06	N/Av	N/Av	N/Av	N/Av	N/Av
D08	<b>0.04*</b>	<b>0.05*</b>	<b>0.15*</b>	<b>0.21*</b>	<b>0.23*</b>
D09	N/Av	N/Av	N/Av	N/Av	N/Av
D10	N/Av	N/Av	N/Av	N/Av	N/Av
D11	<b>0.12*</b>	<b>0.12*</b>	<b>0.20*</b>	<b>0.21*</b>	<b>0.29*</b>
D12	N/Av	N/Av	N/Av	N/Av	N/Av
D13	N/Av	N/Av	N/Av	N/Av	N/Av
D15	0.00	0.01	<b>0.09*</b>	<b>0.09*</b>	<b>0.13*</b>
D17	N/Av	N/Av	N/Av	N/Av	N/Av
D19	N/Av	N/Av	N/Av	N/Av	N/Av
D20	N/Av	N/Av	N/Av	N/Av	N/Av
D22	<b>0.12*</b>	<b>0.15*</b>	<b>0.20*</b>	<b>0.21*</b>	<b>0.32*</b>
D23	<b>0.02*</b>	<b>0.03*</b>	<b>0.21*</b>	<b>0.21*</b>	<b>0.21*</b>
D24	N/Av	N/Av	N/Av	N/Av	N/Av
D26	N/Av	N/Av	N/Av	N/Av	N/Av
D29	N/Av	N/Av	N/Av	N/Av	N/Av
D31	N/Av	N/Av	N/Av	N/Av	N/Av
D32	N/Av	N/Av	N/Av	N/Av	N/Av
D33	<b>0.13*</b>	<b>0.08*</b>	<b>0.16*</b>	<b>0.17*</b>	<b>0.26*</b>
D36	N/Av	N/Av	N/Av	N/Av	N/Av
D38	<b>0.13*</b>	<b>0.15*</b>	<b>0.23*</b>	<b>0.23*</b>	<b>0.29*</b>
D39	0.11*	0.21*	0.33*	0.41*	0.47*
D41	<b>0.12*</b>	<b>0.10*</b>	<b>0.19*</b>	<b>0.19*</b>	<b>0.23*</b>
D43	<b>0.12*</b>	<b>0.09*</b>	<b>0.15*</b>	<b>0.15*</b>	<b>0.22*</b>
D44	<b>0.09*</b>	<b>0.12*</b>	<b>0.24*</b>	<b>0.26*</b>	<b>0.28*</b>
D47	N/Av	N/Av	N/Av	N/Av	N/Av
D49	N/Av	N/Av	N/Av	N/Av	N/Av
D52	N/Av	N/Av	N/Av	N/Av	N/Av
D53	<b>0.15*</b>	<b>0.14*</b>	<b>0.11*</b>	0.11	<b>0.24*</b>
D55	<b>0.21*</b>	<b>0.24*</b>	<b>0.17*</b>	<b>0.19*</b>	<b>0.31*</b>
D56	0.03	0.03	0.06	0.06	0.08
D57	<b>0.11*</b>	<b>0.04*</b>	0.07	0.07	<b>0.15*</b>
D61	N/Av	N/Av	N/Av	N/Av	N/Av
D62	<b>0.10*</b>	<b>0.09*</b>	<b>0.18*</b>	<b>0.19*</b>	<b>0.22*</b>
D63	N/Av	N/Av	N/Av	N/Av	N/Av
D65	<b>0.10*</b>	<b>0.10*</b>	<b>0.14*</b>	<b>0.14*</b>	<b>0.20*</b>
D67	<b>0.04*</b>	0.03	<b>0.16*</b>	<b>0.17*</b>	<b>0.21*</b>
D68	<b>0.07*</b>	<b>0.06*</b>	0.04	0.06	<b>0.13*</b>
D70	N/Av	N/Av	N/Av	N/Av	N/Av
D71	<b>0.19*</b>	<b>0.21*</b>	<b>0.18*</b>	<b>0.19*</b>	<b>0.29*</b>
D72	<b>0.15*</b>	<b>0.13*</b>	<b>0.24*</b>	<b>0.25*</b>	<b>0.31*</b>
D75	N/Av	N/Av	N/Av	N/Av	N/Av
D76	0.06	0.06	0.06	0.06	0.16
D77	<b>0.10*</b>	<b>0.13*</b>	<b>0.18*</b>	<b>0.21*</b>	<b>0.30*</b>
D78	0.02	<b>0.06*</b>	0.07	0.07	0.17
D81	N/Av	N/Av	N/Av	N/Av	N/Av
D82	<b>0.29*</b>	<b>0.27*</b>	<b>0.31*</b>	<b>0.33*</b>	<b>0.43*</b>
D83	<b>0.17*</b>	<b>0.19*</b>	<b>0.27*</b>	<b>0.29*</b>	<b>0.35*</b>
D84	N/Av	N/Av	N/Av	N/Av	N/Av
D86	<b>0.10*</b>	<b>0.05*</b>	<b>0.15*</b>	<b>0.19*</b>	<b>0.30*</b>
D87	0.03	0.00	<b>0.44*</b>	<b>0.46*</b>	<b>0.48*</b>
D88	N/Av	N/Av	N/Av	N/Av	N/Av
D89	0.01	0.00	<b>0.09*</b>	<b>0.10*</b>	<b>0.13*</b>
D90	<b>0.07*</b>	<b>0.02*</b>	<b>0.09*</b>	<b>0.09*</b>	<b>0.14*</b>
D91	N/Av	N/Av	N/Av	N/Av	N/Av
D92	<b>0.17*</b>	<b>0.18*</b>	<b>0.32*</b>	<b>0.32*</b>	<b>0.36*</b>
D93	<b>0.92*</b>	<b>0.60*</b>	<b>0.14*</b>	<b>0.16*</b>	<b>0.96*</b>
D94	<b>0.25*</b>	<b>0.23*</b>	<b>0.28*</b>	<b>0.28*</b>	<b>0.42*</b>
D95	0.10	<b>0.11*</b>	0.14	0.20	0.32
D96	<b>0.19*</b>	<b>0.26*</b>	<b>0.28*</b>	<b>0.28*</b>	<b>0.40*</b>
D97	<b>0.03*</b>	<b>0.04*</b>	<b>0.23*</b>	<b>0.24*</b>	<b>0.24*</b>
D98	N/Av	N/Av	N/Av	N/Av	N/Av
D99	<b>0.09*</b>	<b>0.08*</b>	<b>0.27*</b>	<b>0.30*</b>	<b>0.33*</b>
# of Correlations	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>
# of Significant Correlations	31	32	33	32	35
Percent Significant	79%	82%	85%	82%	90%
Median R-Square	0.10	0.10	0.18	0.19	0.28

**Table 5**  
**First Year Pre-Clinical Dental Technique Grades Regressed with Pre-Dental GPA,  
 Science GPA, and DAT Scores**

School Code	Pre-Dental GPA	Science GPA	DAT Academic Scores	All DAT Scores	All Predictors
D02	<b>0.11*</b>	<b>0.08*</b>	0.14	<b>0.18*</b>	<b>0.28*</b>
D03	N/Av	N/Av	N/Av	N/Av	N/AV
D05	0.00	0.00	<b>0.14*</b>	<b>0.23*</b>	<b>0.23*</b>
D06	N/Av	N/Av	N/Av	N/Av	N/AV
D08	<b>0.04*</b>	<b>0.04*</b>	<b>0.13*</b>	<b>0.27*</b>	<b>0.29*</b>
D09	N/Av	N/Av	N/Av	N/Av	N/AV
D10	N/Av	N/Av	N/Av	N/Av	N/AV
D11	<b>0.14*</b>	<b>0.14*</b>	<b>0.21*</b>	<b>0.28*</b>	<b>0.37*</b>
D12	N/Av	N/Av	N/Av	N/Av	N/AV
D13	N/Av	N/Av	N/Av	N/Av	N/AV
D15	0.00	0.00	0.05	0.06	0.07
D17	N/Av	N/Av	N/Av	N/Av	N/AV
D19	N/Av	N/Av	N/Av	N/Av	N/AV
D20	N/Av	N/Av	N/Av	N/Av	N/AV
D22	<b>0.17*</b>	<b>0.19*</b>	<b>0.22*</b>	<b>0.30*</b>	<b>0.35*</b>
D23	0.01	0.02	<b>0.08*</b>	<b>0.10*</b>	<b>0.10*</b>
D24	N/Av	N/Av	N/Av	N/Av	N/AV
D26	N/Av	N/Av	N/Av	N/Av	N/AV
D29	N/Av	N/Av	N/Av	N/Av	N/AV
D31	N/Av	N/Av	N/Av	N/Av	N/AV
D32	N/Av	N/Av	N/Av	N/Av	N/AV
D33	<b>0.04*</b>	0.02	0.03	0.04	0.06
D36	N/Av	N/Av	N/Av	N/Av	N/AV
D38	<b>0.04*</b>	<b>0.04*</b>	<b>0.06*</b>	<b>0.07*</b>	<b>0.09*</b>
D39	<b>0.19*</b>	<b>0.25*</b>	<b>0.14*</b>	<b>0.16*</b>	<b>0.32*</b>
D41	<b>0.12*</b>	<b>0.08*</b>	<b>0.16*</b>	<b>0.19*</b>	<b>0.24*</b>
D43	<b>0.03*</b>	0.01	<b>0.07*</b>	<b>0.08*</b>	<b>0.11*</b>
D44	<b>0.19*</b>	<b>0.20*</b>	<b>0.23*</b>	<b>0.24*</b>	<b>0.36*</b>
D47	N/Av	N/Av	N/Av	N/Av	N/AV
D49	N/Av	N/Av	N/Av	N/Av	N/AV
D52	N/Av	N/Av	N/Av	N/Av	N/AV
D53	<b>0.13*</b>	<b>0.11*</b>	0.05	0.06	<b>0.18*</b>
D55	<b>0.04*</b>	<b>0.04*</b>	0.05	<b>0.10*</b>	<b>0.11*</b>
D56	<b>0.07*</b>	<b>0.08*</b>	0.06	0.06	0.12
D57	<b>0.06*</b>	0.01	0.04	0.08	0.13
D61	N/Av	N/Av	N/Av	N/Av	N/AV
D62	<b>0.05*</b>	<b>0.04*</b>	<b>0.09*</b>	<b>0.13*</b>	<b>0.14*</b>
D63	N/Av	N/Av	N/Av	N/Av	N/AV
D65	<b>0.06*</b>	<b>0.06*</b>	<b>0.07*</b>	<b>0.11*</b>	<b>0.15*</b>
D67	0.02	0.02	0.03	0.10	0.13
D68	0.00	0.00	0.03	<b>0.16*</b>	<b>0.16*</b>
D70	N/Av	N/Av	N/Av	N/Av	N/AV
D71	<b>0.09*</b>	<b>0.12*</b>	<b>0.07*</b>	<b>0.12*</b>	<b>0.20*</b>
D72	<b>0.08*</b>	<b>0.10*</b>	<b>0.12*</b>	<b>0.14*</b>	<b>0.19*</b>
D75	N/Av	N/Av	N/Av	N/Av	N/AV
D76	<b>0.07*</b>	0.05	0.11	0.13	0.22
D77	0.00	0.02	<b>0.17*</b>	<b>0.18*</b>	<b>0.38*</b>
D78	<b>0.07*</b>	<b>0.09*</b>	0.10	0.10	0.19
D81	N/Av	N/Av	N/Av	N/Av	N/AV
D82	<b>0.03*</b>	0.02	0.02	<b>0.11*</b>	<b>0.16*</b>
D83	<b>0.11*</b>	<b>0.12*</b>	<b>0.25*</b>	<b>0.28*</b>	<b>0.30*</b>
D84	N/Av	N/Av	N/Av	N/Av	N/AV
D86	0.05	0.04	0.07	0.07	0.12
D87	0.04	0.00	<b>0.36*</b>	<b>0.37*</b>	<b>0.42*</b>
D88	N/Av	N/Av	N/Av	N/Av	N/AV
D89	0.00	0.00	<b>0.09*</b>	0.09	0.10
D90	0.01	0.00	<b>0.06*</b>	<b>0.10*</b>	<b>0.11*</b>
D91	N/Av	N/Av	N/Av	N/Av	N/AV
D92	<b>0.28*</b>	<b>0.28*</b>	<b>0.29*</b>	<b>0.30*</b>	<b>0.41*</b>
D93	<b>0.21*</b>	<b>0.15*</b>	0.07	0.09	<b>0.26*</b>
D94	<b>0.19*</b>	<b>0.19*</b>	<b>0.25*</b>	<b>0.26*</b>	<b>0.37*</b>
D95	<b>0.15*</b>	<b>0.18*</b>	0.25	0.34*	<b>0.49*</b>
D96	<b>0.07*</b>	<b>0.12*</b>	<b>0.22*</b>	<b>0.29*</b>	<b>0.33*</b>
D97	<b>0.02*</b>	<b>0.03*</b>	<b>0.13*</b>	<b>0.20*</b>	<b>0.21*</b>
D98	N/Av	N/Av	N/Av	N/Av	N/AV
D99	<b>0.10*</b>	<b>0.09*</b>	0.06	<b>0.19*</b>	<b>0.25*</b>
# of Correlations	39	39	39	39	39
# of Significant Correlations	29	24	23	28	30
Percent Significant	74%	62%	59%	72%	77%
Median R-Square	0.06	0.05	0.09	0.13	0.20

**Table 6**  
**First Year Grade Point Average Regressed with Pre-Dental GPA, Science GPA, and  
 DAT Scores**

School Code	Pre-Dental GPA	Science GPA	DAT Academic Scores	All DAT Scores	All Predictors
D02	<b>0.13*</b>	<b>0.14*</b>	<b>0.27*</b>	<b>0.29*</b>	<b>0.35*</b>
D03	N/Av	N/Av	N/Av	N/Av	N/Av
D05	0.00	0.00	<b>0.12*</b>	<b>0.18*</b>	<b>0.19*</b>
D06	N/Av	N/Av	N/Av	N/Av	N/Av
D08	<b>0.06*</b>	<b>0.06*</b>	<b>0.17*</b>	<b>0.27*</b>	<b>0.30*</b>
D09	N/Av	N/Av	N/Av	N/Av	N/Av
D10	N/Av	N/Av	N/Av	N/Av	N/Av
D11	<b>0.14*</b>	<b>0.15*</b>	<b>0.22*</b>	<b>0.24*</b>	<b>0.34*</b>
D12	N/Av	N/Av	N/Av	N/Av	N/Av
D13	N/Av	N/Av	N/Av	N/Av	N/Av
D15	0.01	0.02	0.03	0.04	0.05
D17	N/Av	N/Av	N/Av	N/Av	N/Av
D19	N/Av	N/Av	N/Av	N/Av	N/Av
D20	N/Av	N/Av	N/Av	N/Av	N/Av
D22	<b>0.12*</b>	<b>0.16*</b>	<b>0.20*</b>	<b>0.23*</b>	<b>0.34*</b>
D23	0.01	0.01	<b>0.16*</b>	<b>0.17*</b>	<b>0.18*</b>
D24	N/Av	N/Av	N/Av	N/Av	N/Av
D26	N/Av	N/Av	N/Av	N/Av	N/Av
D29	N/Av	N/Av	N/Av	N/Av	N/Av
D31	N/Av	N/Av	N/Av	N/Av	N/Av
D32	N/Av	N/Av	N/Av	N/Av	N/Av
D33	<b>0.14*</b>	<b>0.07*</b>	<b>0.14*</b>	<b>0.16*</b>	<b>0.27*</b>
D36	N/Av	N/Av	N/Av	N/Av	N/Av
D38	<b>0.11*</b>	<b>0.13*</b>	<b>0.20*</b>	<b>0.21*</b>	<b>0.26*</b>
D39	<b>0.17*</b>	<b>0.28*</b>	<b>0.30*</b>	<b>0.37*</b>	<b>0.48*</b>
D41	<b>0.14*</b>	<b>0.10*</b>	<b>0.20*</b>	<b>0.20*</b>	<b>0.25*</b>
D43	<b>0.09*</b>	<b>0.07*</b>	<b>0.13*</b>	<b>0.13*</b>	<b>0.18*</b>
D44	<b>0.14*</b>	<b>0.16*</b>	<b>0.26*</b>	<b>0.26*</b>	<b>0.31*</b>
D47	N/Av	N/Av	N/Av	N/Av	N/Av
D49	N/Av	N/Av	N/Av	N/Av	N/Av
D52	N/Av	N/Av	N/Av	N/Av	N/Av
D53	<b>0.12*</b>	<b>0.11*</b>	0.09	0.09	<b>0.20*</b>
D55	<b>0.19*</b>	<b>0.22*</b>	<b>0.17*</b>	<b>0.20*</b>	<b>0.31*</b>
D56	0.03	0.04	0.06	0.06	0.09
D57	<b>0.15*</b>	<b>0.04*</b>	0.08	0.09	<b>0.21*</b>
D61	N/Av	N/Av	N/Av	N/Av	N/Av
D62	<b>0.09*</b>	<b>0.08*</b>	<b>0.16*</b>	<b>0.17*</b>	<b>0.20*</b>
D63	N/Av	N/Av	N/Av	N/Av	N/Av
D65	<b>0.10*</b>	<b>0.10*</b>	<b>0.13*</b>	<b>0.15*</b>	<b>0.20*</b>
D67	<b>0.06*</b>	<b>0.06*</b>	0.10	<b>0.13*</b>	<b>0.19*</b>
D68	<b>0.05*</b>	<b>0.03*</b>	0.06	<b>0.09*</b>	<b>0.16*</b>
D70	N/Av	N/Av	N/Av	N/Av	N/Av
D71	<b>0.20*</b>	<b>0.22*</b>	<b>0.19*</b>	<b>0.20*</b>	<b>0.31*</b>
D72	<b>0.16*</b>	<b>0.15*</b>	<b>0.23*</b>	<b>0.23*</b>	<b>0.30*</b>
D75	N/Av	N/Av	N/Av	N/Av	N/Av
D76	<b>0.08*</b>	<b>0.06*</b>	0.06	0.06	0.18
D77	<b>0.09*</b>	<b>0.14*</b>	<b>0.17*</b>	<b>0.20*</b>	<b>0.32*</b>
D78	0.03	<b>0.07*</b>	0.07	0.08	0.17
D81	N/Av	N/Av	N/Av	N/Av	N/Av
D82	<b>0.23*</b>	<b>0.21*</b>	<b>0.19*</b>	<b>0.19*</b>	<b>0.30*</b>
D83	<b>0.13*</b>	<b>0.15*</b>	<b>0.28*</b>	<b>0.31*</b>	<b>0.34*</b>
D84	N/Av	N/Av	N/Av	N/Av	N/Av
D86	<b>0.09*</b>	<b>0.06*</b>	0.10	0.11	<b>0.21*</b>
D87	0.03	0.00	<b>0.42*</b>	<b>0.43*</b>	<b>0.45*</b>
D88	N/Av	N/Av	N/Av	N/Av	N/Av
D89	0.01	0.00	<b>0.10*</b>	<b>0.10*</b>	<b>0.13*</b>
D90	<b>0.07*</b>	0.01	<b>0.09*</b>	<b>0.09*</b>	<b>0.13*</b>
D91	N/Av	N/Av	N/Av	N/Av	N/Av
D92	<b>0.19*</b>	<b>0.20*</b>	<b>0.34*</b>	<b>0.34*</b>	<b>0.38*</b>
D93	<b>0.27*</b>	<b>0.17*</b>	<b>0.11*</b>	<b>0.12*</b>	<b>0.32*</b>
D94	<b>0.26*</b>	<b>0.26*</b>	<b>0.29*</b>	<b>0.29*</b>	<b>0.43*</b>
D95	<b>0.20*</b>	<b>0.23*</b>	0.23	<b>0.33*</b>	<b>0.53*</b>
D96	<b>0.19*</b>	<b>0.27*</b>	<b>0.29*</b>	<b>0.29*</b>	<b>0.42*</b>
D97	<b>0.03*</b>	<b>0.04*</b>	<b>0.24*</b>	<b>0.25*</b>	<b>0.26*</b>
D98	N/Av	N/Av	N/Av	N/Av	N/Av
D99	<b>0.13*</b>	<b>0.10*</b>	<b>0.24*</b>	<b>0.29*</b>	<b>0.34*</b>
# of Correlations	39	39	39	39	39
# of Significant Correlations	32	32	29	32	35
Percent Significant	82%	82%	74%	82%	90%
Median R-Square	0.12	0.10	0.17	0.20	0.27







**Table 10**  
**Second Year Biomedical Grades Regressed with Pre-Dental GPA, Science GPA, and DAT Scores**

School Code	Pre-Dental GPA	Science GPA	DAT Academic Scores	All DAT Scores	All Predictors
D02	<b>0.27*</b>	<b>0.29*</b>	0.09	<b>0.18*</b>	<b>0.39*</b>
D03	N/Av	N/Av	N/Av	N/Av	N/Av
D05	N/Av	N/Av	N/Av	N/Av	N/Av
D06	N/Av	N/Av	N/Av	N/Av	N/Av
D08	<b>0.03*</b>	<b>0.03*</b>	<b>0.08*</b>	<b>0.08*</b>	<b>0.12*</b>
D09	N/Av	N/Av	N/Av	N/Av	N/Av
D10	N/Av	N/Av	N/Av	N/Av	N/Av
D11	<b>0.07*</b>	<b>0.09*</b>	0.08	0.08	<b>0.16*</b>
D12	N/Av	N/Av	N/Av	N/Av	N/Av
D13	N/Av	N/Av	N/Av	N/Av	N/Av
D15	0.05	0.05	0.06	<b>0.26*</b>	<b>0.33*</b>
D17	N/Av	N/Av	N/Av	N/Av	N/Av
D19	N/Av	N/Av	N/Av	N/Av	N/Av
D20	N/Av	N/Av	N/Av	N/Av	N/Av
D22	N/Av	N/Av	N/Av	N/Av	N/Av
D23	<b>0.06*</b>	<b>0.05*</b>	<b>0.10*</b>	<b>0.10*</b>	<b>0.15*</b>
D24	N/Av	N/Av	N/Av	N/Av	N/Av
D26	N/Av	N/Av	N/Av	N/Av	N/Av
D29	N/Av	N/Av	N/Av	N/Av	N/Av
D31	N/Av	N/Av	N/Av	N/Av	N/Av
D32	N/Av	N/Av	N/Av	N/Av	N/Av
D33	<b>0.12*</b>	<b>0.07*</b>	<b>0.08*</b>	<b>0.08*</b>	<b>0.21*</b>
D36	N/Av	N/Av	N/Av	N/Av	N/Av
D38	0.08*	0.10*	0.24*	0.26*	0.29*
D39	<b>0.19*</b>	<b>0.19*</b>	<b>0.14*</b>	<b>0.17*</b>	<b>0.27*</b>
D41	<b>0.06*</b>	<b>0.10*</b>	<b>0.17*</b>	<b>0.17*</b>	<b>0.21*</b>
D43	0.08*	0.06*	0.14*	0.15*	0.19*
D44	<b>0.13*</b>	<b>0.16*</b>	<b>0.31*</b>	<b>0.31*</b>	<b>0.35*</b>
D47	N/Av	N/Av	N/Av	N/Av	N/Av
D49	N/Av	N/Av	N/Av	N/Av	N/Av
D52	N/Av	N/Av	N/Av	N/Av	N/Av
D53	<b>0.18*</b>	<b>0.21*</b>	<b>0.16*</b>	<b>0.16*</b>	<b>0.29*</b>
D55	<b>0.31*</b>	<b>0.30*</b>	<b>0.45*</b>	<b>0.47*</b>	<b>0.57*</b>
D56	N/Av	N/Av	N/Av	N/Av	N/Av
D57	N/Av	N/Av	N/Av	N/Av	N/Av
D61	N/Av	N/Av	N/Av	N/Av	N/Av
D62	<b>0.11*</b>	<b>0.10*</b>	<b>0.14*</b>	<b>0.23*</b>	<b>0.29*</b>
D63	N/Av	N/Av	N/Av	N/Av	N/Av
D65	<b>0.14*</b>	<b>0.11*</b>	<b>0.11*</b>	<b>0.17*</b>	<b>0.25*</b>
D67	0.02	0.04	0.16*	0.17*	0.19*
D68	<b>0.14*</b>	<b>0.10*</b>	<b>0.13*</b>	<b>0.13*</b>	<b>0.26*</b>
D70	N/Av	N/Av	N/Av	N/Av	N/Av
D71	<b>0.07*</b>	<b>0.07*</b>	<b>0.08*</b>	<b>0.12*</b>	<b>0.15*</b>
D72	<b>0.10*</b>	<b>0.13*</b>	<b>0.20*</b>	<b>0.21*</b>	<b>0.28*</b>
D75	N/Av	N/Av	N/Av	N/Av	N/Av
D76	N/Av	N/Av	N/Av	N/Av	N/Av
D77	<b>0.13*</b>	<b>0.19*</b>	<b>0.16*</b>	<b>0.20*</b>	<b>0.29*</b>
D78	0.02	0.01	0.12	0.12	0.18
D81	N/Av	N/Av	N/Av	N/Av	N/Av
D82	<b>0.23*</b>	<b>0.21*</b>	0.07	0.07	<b>0.26*</b>
D83	<b>0.26*</b>	<b>0.28*</b>	<b>0.25*</b>	<b>0.27*</b>	<b>0.40*</b>
D84	N/Av	N/Av	N/Av	N/Av	N/Av
D86	N/Av	N/Av	N/Av	N/Av	N/Av
D87	N/Av	N/Av	N/Av	N/Av	N/Av
D88	N/Av	N/Av	N/Av	N/Av	N/Av
D89	N/Av	N/Av	N/Av	N/Av	N/Av
D90	<b>0.18*</b>	<b>0.06*</b>	<b>0.16*</b>	<b>0.16*</b>	<b>0.26*</b>
D91	N/Av	N/Av	N/Av	N/Av	N/Av
D92	N/Av	N/Av	N/Av	N/Av	N/Av
D93	N/Av	N/Av	N/Av	N/Av	N/Av
D94	N/Av	N/Av	N/Av	N/Av	N/Av
D95	<b>0.29*</b>	<b>0.24*</b>	0.06	0.14	<b>0.42*</b>
D96	N/Av	N/Av	N/Av	N/Av	N/Av
D97	<b>0.04*</b>	<b>0.04*</b>	<b>0.24*</b>	<b>0.24*</b>	<b>0.25*</b>
D98	N/Av	N/Av	N/Av	N/Av	N/Av
D99	<b>0.06*</b>	0.02	<b>0.12*</b>	<b>0.12*</b>	<b>0.16*</b>
# of Correlations	27	27	27	27	27
# of Significant Correlations	24	23	21	23	26
Percent Significant	89%	85%	78%	85%	96%
Median R-Square	0.11	0.10	0.14	0.17	0.26

**Table 11**  
**Second Year Pre-Clinical Dental Technique Grades Regressed with Pre-Dental GPA,  
 Science GPA, and DAT Scores**

School Code	Pre-Dental GPA	Science GPA	DAT Academic Scores	All DAT Scores	All Predictors
D02	<b>0.22*</b>	<b>0.22*</b>	0.09	0.11	<b>0.27*</b>
D03	N/Av	N/Av	N/Av	N/Av	N/Av
D05	N/Av	N/Av	N/Av	N/Av	N/Av
D06	N/Av	N/Av	N/Av	N/Av	N/Av
D08	<b>0.05*</b>	<b>0.05*</b>	0.03	0.04	<b>0.09*</b>
D09	N/Av	N/Av	N/Av	N/Av	N/Av
D10	N/Av	N/Av	N/Av	N/Av	N/Av
D11	<b>0.14*</b>	<b>0.12*</b>	0.04	0.05	<b>0.18*</b>
D12	N/Av	N/Av	N/Av	N/Av	N/Av
D13	N/Av	N/Av	N/Av	N/Av	N/Av
D15	<b>0.07*</b>	0.03	0.06	0.13	0.21
D17	N/Av	N/Av	N/Av	N/Av	N/Av
D19	N/Av	N/Av	N/Av	N/Av	N/Av
D20	N/Av	N/Av	N/Av	N/Av	N/Av
D22	N/Av	N/Av	N/Av	N/Av	N/Av
D23	0.01	0.01	0.03	<b>0.08*</b>	<b>0.09*</b>
D24	N/Av	N/Av	N/Av	N/Av	N/Av
D26	N/Av	N/Av	N/Av	N/Av	N/Av
D29	N/Av	N/Av	N/Av	N/Av	N/Av
D31	N/Av	N/Av	N/Av	N/Av	N/Av
D32	N/Av	N/Av	N/Av	N/Av	N/Av
D33	<b>0.17*</b>	<b>0.09*</b>	<b>0.06*</b>	<b>0.08*</b>	<b>0.25*</b>
D36	N/Av	N/Av	N/Av	N/Av	N/Av
D38	<b>0.06*</b>	<b>0.06*</b>	0.05	0.08	0.11
D39	<b>0.16*</b>	<b>0.13*</b>	<b>0.19*</b>	<b>0.19*</b>	<b>0.27*</b>
D41	<b>0.11*</b>	<b>0.09*</b>	<b>0.10*</b>	<b>0.11*</b>	<b>0.18*</b>
D43	<b>0.09*</b>	<b>0.08*</b>	<b>0.18*</b>	<b>0.18*</b>	<b>0.22*</b>
D44	0.04	0.03	0.12	0.12	0.16
D47	N/Av	N/Av	N/Av	N/Av	N/Av
D49	N/Av	N/Av	N/Av	N/Av	N/Av
D52	N/Av	N/Av	N/Av	N/Av	N/Av
D53	<b>0.20*</b>	<b>0.23*</b>	<b>0.11*</b>	0.12	<b>0.30*</b>
D55	<b>0.21*</b>	<b>0.17*</b>	0.20	<b>0.24*</b>	<b>0.35*</b>
D56	N/Av	N/Av	N/Av	N/Av	N/Av
D57	N/Av	N/Av	N/Av	N/Av	N/Av
D61	N/Av	N/Av	N/Av	N/Av	N/Av
D62	<b>0.07*</b>	<b>0.06*</b>	0.07	0.08	0.12
D63	N/Av	N/Av	N/Av	N/Av	N/Av
D65	<b>0.09*</b>	<b>0.08*</b>	<b>0.13*</b>	<b>0.17*</b>	<b>0.23*</b>
D67	0.00	0.00	0.05	<b>0.22*</b>	<b>0.22*</b>
D68	0.00	0.00	0.03	0.07	0.08
D70	N/Av	N/Av	N/Av	N/Av	N/Av
D71	<b>0.11*</b>	<b>0.11*</b>	<b>0.14*</b>	<b>0.14*</b>	<b>0.20*</b>
D72	<b>0.18*</b>	<b>0.21*</b>	<b>0.13*</b>	<b>0.17*</b>	<b>0.33*</b>
D75	N/Av	N/Av	N/Av	N/Av	N/Av
D76	N/Av	N/Av	N/Av	N/Av	N/Av
D77	<b>0.06*</b>	<b>0.08*</b>	0.10	0.12	0.15
D78	0.03	0.02	0.16	0.19	0.24
D81	N/Av	N/Av	N/Av	N/Av	N/Av
D82	<b>0.14*</b>	<b>0.14*</b>	0.05	0.06	<b>0.21*</b>
D83	<b>0.10*</b>	<b>0.07*</b>	<b>0.19*</b>	<b>0.21*</b>	<b>0.23*</b>
D84	N/Av	N/Av	N/Av	N/Av	N/Av
D86	N/Av	N/Av	N/Av	N/Av	N/Av
D87	N/Av	N/Av	N/Av	N/Av	N/Av
D88	N/Av	N/Av	N/Av	N/Av	N/Av
D89	N/Av	N/Av	N/Av	N/Av	N/Av
D90	0.01	0.00	0.02	<b>0.06*</b>	<b>0.08*</b>
D91	N/Av	N/Av	N/Av	N/Av	N/Av
D92	N/Av	N/Av	N/Av	N/Av	N/Av
D93	N/Av	N/Av	N/Av	N/Av	N/Av
D94	N/Av	N/Av	N/Av	N/Av	N/Av
D95	0.10	0.10	0.18	0.18	0.23
D96	N/Av	N/Av	N/Av	N/Av	N/Av
D97	<b>0.03*</b>	<b>0.04*</b>	<b>0.10*</b>	<b>0.13*</b>	<b>0.15*</b>
D98	N/Av	N/Av	N/Av	N/Av	N/Av
D99	<b>0.07*</b>	<b>0.03*</b>	<b>0.08*</b>	0.08	<b>0.13*</b>
# of Correlations	27	27	27	27	27
# of Significant Correlations	20	19	11	13	19
Percent Significant	74%	70%	41%	48%	70%
Median R-Square	0.09	0.08	0.10	0.12	0.21

**Table 12**  
**Second Year Grade Point Average Regressed with Pre-Dental GPA, Science GPA,  
and DAT Scores**

School Code	Pre-Dental GPA	Science GPA	DAT Academic Scores	All DAT Scores	All Predictors
D02	<b>0.27*</b>	<b>0.29*</b>	0.09	0.12	<b>0.33*</b>
D03	N/Av	N/Av	N/Av	N/Av	N/Av
D05	N/Av	N/Av	N/Av	N/Av	N/Av
D06	N/Av	N/Av	N/Av	N/Av	N/Av
D08	<b>0.06*</b>	<b>0.07*</b>	<b>0.09*</b>	<b>0.10*</b>	<b>0.16*</b>
D09	N/Av	N/Av	N/Av	N/Av	N/Av
D10	N/Av	N/Av	N/Av	N/Av	N/Av
D11	<b>0.09*</b>	<b>0.08*</b>	0.06	0.07	0.15
D12	N/Av	N/Av	N/Av	N/Av	N/Av
D13	N/Av	N/Av	N/Av	N/Av	N/Av
D15	<b>0.07*</b>	0.04	0.04	<b>0.24*</b>	<b>0.32*</b>
D17	N/Av	N/Av	N/Av	N/Av	N/Av
D19	N/Av	N/Av	N/Av	N/Av	N/Av
D20	N/Av	N/Av	N/Av	N/Av	N/Av
D22	N/Av	N/Av	N/Av	N/Av	N/Av
D23	<b>0.04*</b>	<b>0.03*</b>	<b>0.06*</b>	<b>0.07*</b>	<b>0.11*</b>
D24	N/Av	N/Av	N/Av	N/Av	N/Av
D26	N/Av	N/Av	N/Av	N/Av	N/Av
D29	N/Av	N/Av	N/Av	N/Av	N/Av
D31	N/Av	N/Av	N/Av	N/Av	N/Av
D32	N/Av	N/Av	N/Av	N/Av	N/Av
D33	<b>0.17*</b>	<b>0.09*</b>	<b>0.07*</b>	<b>0.08*</b>	<b>0.25*</b>
D36	N/Av	N/Av	N/Av	N/Av	N/Av
D38	<b>0.11*</b>	<b>0.14*</b>	<b>0.26*</b>	<b>0.27*</b>	<b>0.32*</b>
D39	<b>0.18*</b>	<b>0.17*</b>	<b>0.17*</b>	<b>0.18*</b>	<b>0.28*</b>
D41	<b>0.11*</b>	<b>0.10*</b>	<b>0.14*</b>	<b>0.14*</b>	<b>0.20*</b>
D43	<b>0.09*</b>	<b>0.08*</b>	<b>0.18*</b>	<b>0.18*</b>	<b>0.22*</b>
D44	<b>0.11*</b>	<b>0.11*</b>	<b>0.23*</b>	<b>0.23*</b>	<b>0.27*</b>
D47	N/Av	N/Av	N/Av	N/Av	N/Av
D49	N/Av	N/Av	N/Av	N/Av	N/Av
D52	N/Av	N/Av	N/Av	N/Av	N/Av
D53	<b>0.30*</b>	<b>0.33*</b>	<b>0.22*</b>	<b>0.22*</b>	<b>0.45*</b>
D55	<b>0.28*</b>	<b>0.23*</b>	<b>0.35*</b>	<b>0.37*</b>	<b>0.51*</b>
D56	N/Av	N/Av	N/Av	N/Av	N/Av
D57	N/Av	N/Av	N/Av	N/Av	N/Av
D61	N/Av	N/Av	N/Av	N/Av	N/Av
D62	<b>0.09*</b>	<b>0.09*</b>	0.10	<b>0.12*</b>	<b>0.17*</b>
D63	N/Av	N/Av	N/Av	N/Av	N/Av
D65	<b>0.16*</b>	<b>0.15*</b>	<b>0.13*</b>	<b>0.19*</b>	<b>0.29*</b>
D67	0.00	0.01	0.07	<b>0.17*</b>	<b>0.20*</b>
D68	<b>0.12*</b>	<b>0.08*</b>	<b>0.12*</b>	<b>0.13*</b>	<b>0.24*</b>
D70	N/Av	N/Av	N/Av	N/Av	N/Av
D71	<b>0.20*</b>	<b>0.22*</b>	<b>0.18*</b>	<b>0.18*</b>	<b>0.30*</b>
D72	<b>0.18*</b>	<b>0.21*</b>	<b>0.20*</b>	<b>0.21*</b>	<b>0.34*</b>
D75	N/Av	N/Av	N/Av	N/Av	N/Av
D76	N/Av	N/Av	N/Av	N/Av	N/Av
D77	<b>0.19*</b>	<b>0.23*</b>	<b>0.26*</b>	<b>0.29*</b>	<b>0.39*</b>
D78	0.03	0.03	0.18	0.18	0.24
D81	N/Av	N/Av	N/Av	N/Av	N/Av
D82	<b>0.23*</b>	<b>0.22*</b>	0.05	0.05	<b>0.27*</b>
D83	<b>0.20*</b>	<b>0.17*</b>	<b>0.23*</b>	<b>0.25*</b>	<b>0.33*</b>
D84	N/Av	N/Av	N/Av	N/Av	N/Av
D86	N/Av	N/Av	N/Av	N/Av	N/Av
D87	N/Av	N/Av	N/Av	N/Av	N/Av
D88	N/Av	N/Av	N/Av	N/Av	N/Av
D89	N/Av	N/Av	N/Av	N/Av	N/Av
D90	<b>0.14*</b>	<b>0.04*</b>	<b>0.14*</b>	<b>0.16*</b>	<b>0.24*</b>
D91	N/Av	N/Av	N/Av	N/Av	N/Av
D92	N/Av	N/Av	N/Av	N/Av	N/Av
D93	N/Av	N/Av	N/Av	N/Av	N/Av
D94	N/Av	N/Av	N/Av	N/Av	N/Av
D95	<b>0.14*</b>	<b>0.12*</b>	0.22	0.26	0.33
D96	N/Av	N/Av	N/Av	N/Av	N/Av
D97	<b>0.05*</b>	<b>0.06*</b>	<b>0.22*</b>	<b>0.24*</b>	<b>0.26*</b>
D98	N/Av	N/Av	N/Av	N/Av	N/Av
D99	<b>0.09*</b>	<b>0.05*</b>	<b>0.18*</b>	<b>0.19*</b>	<b>0.24*</b>
# of Correlations	27	27	27	27	27
# of Significant Correlations	25	24	19	22	24
Percent Significant	93%	89%	70%	81%	89%
Median R-Square	0.12	0.10	0.17	0.18	0.27

Dental Admission Testing Program  
Department of Testing Services  
211 East Chicago Avenue  
Chicago, Illinois 60611-2637

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