



Basic Science Examination

Score Interpretation Guide

NBME® subject examinations provide medical schools with a tool for measuring examinees' understanding of the basic sciences. Items on this exam were written and reviewed by national test committees. Prior to publication, test forms are reviewed by a panel of course directors for this discipline. Although these examinations are designed to be broadly appropriate as part of overall examinee assessment, course objectives vary across schools, and the congruence between subject examination content and course objectives should be considered when interpreting test scores and determining grading standards. Specifically, subject examination scores should not be used alone, but rather in conjunction with other indicators of examinee performance in determination of grades.

Subject Examination Scores

The subject examination score is an equated percent correct score that represents mastery of the content domain assessed by the examination. It is calculated as the percentage of items in the total content domain that would be answered correctly based on an examinee's proficiency level. The subject examination scores are equated across test administrations and are statistically adjusted for variations in test form difficulty. Consequently, these scores can be used to compare and track school and examinee performance over time.

The subject examination scores are placed on a classic percent correct metric (0 – 100%) to facilitate interpretation and use. This scale can easily be incorporated into local assessments and grading schemes and provides a useful tool for comparing the scores of your examinees with those of a large, nationally representative group taking the examination as an end-of-course or end-of-year examination.

Note: Equated percent correct scores cannot be directly compared to scaled scores reported prior to August 2017. Please consult the score equivalency table for instruction on how to translate old scores to the new scale.

Precision of Scores

Measurement error is present on all tests, and the standard error of measurement (SEM) provides an index of the (im)precision of scores. The SEM indicates how far an examinee's score on the examination might stray from his/her "true" proficiency level across repeated testing using different sets of items covering the same content. Using the SEM, it is possible to calculate a score interval that will encompass about two thirds of the observed scores for a given true score by adding and subtracting the SEM from that score. For this examination, the SEM is approximately 4 points. If an examinee's true proficiency on the examination is 75, the score he/she achieved on the examination will usually (two times out of three) fall between 71 and 79 (75 - 4 and 75 + 4).

Score and Performance Feedback

Summary information on the examinee group tested, examination purpose and number of items scored is provided on each page of the feedback. The *Roster of Equated Percent Correct Scores* reports a total test equated percent correct score for each examinee. Reported scores also appear in a comma separated text file that can be downloaded. An *Examinee Performance Profile*, which graphically displays content areas of strength and weakness, is provided for each examinee.

If there were at least 2 examinees, *Equated Percent Correct Score Descriptive Statistics* for reported scores are provided along with a *Frequency Distribution* of the total test equated percent correct score. If there were at least 10 examinees for a single form administration, a detailed *Content Area Item Analysis Report* summarizing the general content of each item on the exam along with group item performance is provided. Content area item descriptors and group item performance also appear in a file that can be downloaded. If there were at least 10 examinees for a single form administration or 20 examinees for a multiple form administration, a *Summary Content Area Item Analysis Report* is provided.

If there were at least 15 examinees, a *School Summary Performance Profile*, which graphically displays areas of strength and weakness in each major content area for your specific test administration, is provided.



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Subject Examination Program

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Norms

Norms are provided to help aid in the interpretation of examinee performance. The norms reflect the performance of first-time taker examinees from LCME-accredited medical schools who took a form of this examination as an end-of-course or end-of-year examination. Previous norms can be found on the *NBME Services Portal (NSP)*.

Basic Science Examination
Score Equivalency Table*

This table is intended to aid in your transition to the new subject examination score scale. The new subject examination score is an equated percent correct score that represents mastery of the content domain assessed by the examination. It is calculated as the percentage of items in the content domain that would be answered correctly based on an examinee's proficiency level. The new subject examination scores are placed on a classic percent correct metric (0 – 100%) to facilitate interpretation and use.

The table below provides approximate performance equivalents from the old scaled score to the new equated percent correct score. To use the table, locate an examinee's score in the column labeled "Old Scaled Score" and look across to the column labeled "Equated Percent Correct Equivalent". This number indicates the examinee's equivalent equated percent correct score. This table is also available on the NBME Services Portal (NSP) as a file that can be downloaded.

Old Scaled Score	Equated Percent Correct Equivalent	Old Scaled Score	Equated Percent Correct Equivalent	Old Scaled Score	Equated Percent Correct Equivalent	Old Scaled Score	Equated Percent Correct Equivalent
99	98	74	89	49	65	24	30
98	**	73	88	48	63	23	29
97	**	72	88	47	62	22	28
96	97	71	87	46	60	21	26
95	97	70	86	45	60	20	26
94	97	69	86	44	58	19	25
93	**	68	85	43	56	18	24
92	96	67	84	42	55	17	22
91	**	66	84	41	53	16	21
90	96	65	83	40	52	15	20
89	**	64	82	39	51	14	19
88	95	63	81	38	49	13	17
87	95	62	79	37	48	12	17
86	**	61	79	36	46	11	17
85	94	60	77	35	45	10	**
84	94	59	76	34	43	9	15
83	93	58	76	33	42	8	15
82	93	57	75	32	40	7	**
81	93	56	73	31	39	6	**
80	92	55	72	30	38	5	**
79	92	54	71	29	37	4	**
78	91	53	70	28	35	3	**
77	91	52	69	27	34	2	**
76	90	51	67	26	33	1	0
75	89	50	66	25	31		

* This table only applies to the exam listed above.

** No equivalent equated percent correct score based on a recent group of takers.



Basic Science Examination

2013-2015 Academic Year Norms

The table below provides norms to aid in the interpretation of examinee performance. These norms enable you to compare your examinees' subject examination scores with the performance of a group of examinees taking the examination at a similar stage of training. The norms reflect the performance of examinees from LCME-accredited medical schools who took a form of this examination for the first time as an end-of-course or end-of-year examination.

The number of schools, sample size (N), mean, and standard deviation (SD) for the norm group are listed below. The academic year for basic science exams is defined as test dates between July 1st and June 30th.

Academic Years	Number of Schools	N	Mean	SD
YYYY-YYYY	30	3,721	70.3	12.1

To use the table, locate an examinee's score in the column labeled "Equated Percent Correct Score" and note the entry in the adjacent column labeled "Percentile Ranks". This number indicates the percentage of examinees that scored at or below the examinee's equated percent correct score.

Equated Percent Correct Score	Percentile Ranks	Equated Percent Correct Score	Percentile Ranks
94 and above	100	67	40
93	99	66	36
92	99	65	33
91	98	64	31
90	97	63	29
89	96	62	26
88	95	61	24
87	94	60	20
86	92	59	19
85	90	58	17
84	87	57	16
83	85	56	14
82	83	55	11
81	81	54	10
80	79	53	9
79	75	52	8
78	72	51	7
77	70	50	6
76	67	49	5
75	63	48	4
74	59	47	4
73	57	46	3
72	53	45	2
71	51	44	2
70	48	43	2
69	44	42	1
68	42	41 and below	1