



NBME[®]

NATIONAL BOARD OF MEDICAL EXAMINERS[®]
Subject Examination Program

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 preparing material for Step 1 of the United States Medical Licensing Examination[®]. 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

This subject examination is scaled to have a *mean of 50 and a standard deviation of 10*, based on a scaling group of first-time takers from U.S. LCME-accredited medical schools who took this exam as an end-of-course examination under standard testing conditions. The vast majority of scores range from 20 to 80.

Subject examination scores are statistically equated across test administrations. Scores are statistically adjusted for shifts in test difficulty across different forms of the examination. This makes it possible to track school and examinee performance over time.

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 60, the score he/she achieved on the examination will usually (two times out of three) fall between 56 and 64 (60 - 4 and 60 + 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 Scaled Scores* reports a total test scaled score for each examinee. Reported scores also appear in a comma separated text file that can be downloaded and used to export scores. 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, *Scaled Score Descriptive Statistics* for reported scores are provided along with a *Frequency Distribution* of the total test scaled 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.

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 examination. Previous norms can be found on the *NBME Services Portal (NSP)*.

Basic Science Examination
YYYY -YYYY Norms for Examinee Performance

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 a reference group of examinees from LCME-accredited medical schools who took a web form of this examination for the first time as an end-of-course or end-of-year examination.

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

Please note that web norms may be based on a small number of schools and may not be representative of national performance.

Examination	Academic Years	Number of Schools	N	Mean	SD
T [ã ~ Æ	YYYY - YYYY	5	601	56	9
T [ã ~ Æ	YYYY - YYYY	16	2,011	53	10
T [ã ~ Æ	YYYY - YYYY	28	3,350	53	10

To use the norm table, locate an examinee's subject examination score in the column labeled "Score" and note the entry in the adjacent column labeled "Percentile Ranks". For example, if an examinee's score is 50, the corresponding percentile rank entry of 28 for Gross Anatomy + Embryology + Human Developmental Biology indicates that 28% of the national group of examinees taking the examination as an end-of-course or end-of-year examination had scores at or below 50.

Score	Percentile Ranks			Score	Percentile Ranks		
	Module 1	Module 2	Module 3		Module 1	Module 2	Module 3
72 or above	96	98	97	50	28	41	42
71	95	97	96	49	21	36	35
70	93	96	96	48	20	32	32
69	93	96	95	47	17	28	29
68	91	95	94	46	14	26	24
67	89	94	93	45	11	22	22
66	87	93	92	44	9	18	18
65	86	91	89	43	6	16	16
64	81	89	88	42	5	14	13
63	80	87	85	41	4	11	12
62	76	86	83	40	3	9	9
61	74	82	81	39	2	9	8
60	70	80	78	38	1	7	6
59	66	77	76	37	1	6	5
58	63	74	71	36	1	4	4
57	60	71	68	35	1	3	3
56	56	68	65	34	0	3	3
55	52	64	62	33	0	2	2
54	46	58	58	32	0	1	1
53	42	55	52	31	0	1	1
52	37	49	49	30	0	1	1
51	32	45	45	29 or below	0	1	1



Basic Science Examination

YYYY-YYYY 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	17	2,681	55.6	9.1

To use the table, locate an examinee's score in the column labeled "Scaled 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 scaled score.

Scaled Score	Percentile Ranks	Scaled Score	Percentile Ranks
72 or above	96	50	28
71	96	49	24
70	95	48	21
69	93	47	19
68	92	46	15
67	92	45	12
66	89	44	10
65	87	43	8
64	84	42	7
63	82	41	6
62	79	40	4
61	76	39	3
60	74	38	3
59	68	37	2
58	64	36	2
57	59	35	1
56	54	34	1
55	51	33	0
54	46	32	0
53	43	31	0
52	38	30	0
51	33	29 or below	0