



EHA European Hematology Exam 2019 Report

1. Method

a. Format

The third European Hematology Exam took place on Friday, June 14, 2019, during the 24th EHA Congress in Amsterdam, The Netherlands. Parallel sessions took place in Greece, Portugal, Spain, Switzerland and Turkey. A total of 149 candidates answered 100 multiple choice questions, covering all eight sections of the [European Hematology Curriculum](#). The participants had 2,5 hours to complete the exam.

b. Candidates

Candidates originated from 35 countries. These countries are listed in table 1.

Country	2019	Total
Spain	41	28%
Turkey	18	12%
Switzerland	10	7%
Portugal	13	9%
Greece	12	8%
United Kingdom	7	5%
India	4	3%
Netherlands	5	3%
Germany	2	1%
Bulgaria	1	1%
Belgium	3	2%
Italy	2	1%
Saudia Arabia	3	2%
Sweden	1	1%
Ireland	2	1%
Mexico	1	1%
Qatar	2	1%
Argentina	1	1%

Country	2019	Total
Austria	2	1%
Bahrain	2	1%
Brazil	2	1%
Croatia	2	1%
Australia	1	1%
Bosnia and Herzegovina	1	1%
Finland	1	1%
France	1	1%
Iraq	1	1%
Japan	1	1%
Kazakhstan	1	1%
Kuwait	1	1%
Luxembourg	1	1%
Pakistan	1	1%
Romania	1	1%
South Africa	1	1%
Sri Lanka	1	1%
Total	149	100%

Table 1. List of participants in the third European Hematology Exams according to the country of origin.

87 candidates took part in the main session in Amsterdam, The Netherlands. 27 candidates attended the parallel session in Spain, 12 in Turkey, 8 in Switzerland, 8 in Portugal and 7 in Greece.



c. Parallel sessions

In 2018, the Swiss Society of Hematology (SSH) took the initiative to organize a parallel session in Bern, Switzerland. This session was open to all Swiss candidates and served as a successful pilot for the implementation of the European Hematology Exam as part of the official Swiss end-of-training exam. In 2019, four more national hematology societies organized a parallel session, to give local participants, who could not access the congress, the opportunity to participate. At the same time as in Amsterdam, candidates in Bern (Switzerland), Madrid (Spain), Lisbon (Portugal), Athens (Greece) and Ankara (Turkey) took the exam.

National Hematology Societies of other countries are also welcome to contact EHA to discuss implementation of the European Hematology Exam as part of their national exams and/or organize local parallel sessions.

2. Quality assurance

a. Question writing and review process

To ensure that the items (questions, answer options and keys) are of high scientific and educational quality, adhere to the European recommended level, and cover the full spectrum of the Curriculum, a Question Writers Group has been established. For this group, 19 experienced hematologists have been selected and trained by educationalists on how to write good exam items. In pairs, these writers worked on their questions and reviewed each other's questions. A second review round was performed by the Review Group, who also selected the final 100 questions, representing all Curriculum sections.

b. Psychometric analysis

To guarantee independent judgment of the quality of the exam and the passing score definition, EHA collaborates with CITO¹, an internationally recognized professional research and knowledge institute in the field of educational measurement and testing. CITO's Psychometric Research- and Knowledge Center performed the psychometric analysis of the results.



Item analysis

To evaluate the quality of each item the correlation between the item score and the exam score has been calculated (Rit and Rir values²). The Rit-values were positive for 95 of the 100 items, whereas the Rir-values were positive for 90 of the 100 items. Psychometrical analysis recommended re-evaluation of questions with negative Rit or Rir-values, by content experts. Based on this re-evaluation, two questions were found to be ambiguous and were for this reason not considered in the final scores. In addition, the content experts realized that due to regional variations two of the questions have more than one right answer depending on where the candidate trained. Therefore, for these questions it was decided that two answers would be considered correct instead of one.

¹ <https://www.cito.com/>

² Rit: uses exam score with the evaluated item score, Rir: without the evaluated item score



Reliability

In classical test theory, two well-known measures for reliability are Cronbach's alpha and Guttman's lambda-2. For this exam Cronbach's alpha is 0.83 and Guttman's lambda-2 is 0.84. These values are considered as good for a low stakes exam, and sufficient for high stakes exams by the European Federation of Psychologists' Association (EFPA) Review Model³ and the standards of the Dutch Committee of Test Matters⁴ (COTAN).

Standard setting

To define the cut-off score, an equating procedure was applied, using item response theory (IRT), where the results of the 2019 exam could be placed on the same ability scale as the 2018 exam. Consequently, candidates can pass the exam at the same ability level as in the two previous years. This was allowed due to the specific test design that was used, and a sufficient fit of the IRT model. It resulted into a cut-off score of 56 (or more) items correct to pass the exam. This means that 116 candidates (77,85%) passed.

Communication of the results

Within 4-6 weeks after the exam, the candidates have received an email with the pass-fail decision.

The candidates who passed, received a certificate. In addition, all candidates have received information on their score per section of the European Hematology Curriculum. For this, CITO translated the overall cut-off score into a cut-off score per section, and the candidates received information on whether they scored above or below this cut-off score.

Passing the exam is regarded an extra quality stamp for hematologists, the right to practice will still be granted by the national authorities.

3. Candidate experience

At the end of the exam, the candidates were asked to complete a short evaluation survey. The results of this survey showed that:

- 98% of the candidates found the exam relevant (80%) or partly relevant (18%) to their hematology training
- 87% of the candidates experienced the exam setup as good or very good.
- 98% of the candidates was able to finish the exam within the 2,5 hours.
- For 74% of the participants, the English language did not pose a problem at all, while for 22% it was only a problem for some questions. For 1% the language posed a problem to complete a large part of the questions. 3% of the respondents was English native.

4. Acknowledgement

EHA would like to thank the following experts for their time and effort towards making the 2019 European Hematology Exam a success:

³ See <http://www.efpa.eu/professional-development/assessment>

⁴ See <https://www.cotandocumentatie.nl/cotan/beoordelingssysteem> (in Dutch)

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5. EHA European Hematology Exam 2020

The 2020 EHA Hematology Exam takes place in Frankfurt, during the 25th EHA Congress. More information will be available soon on the [EHA website](#).