



EUROPEAN
HEMATOLOGY
ASSOCIATION

EUROPEAN HEMATOLOGY EXAM 2020 REPORT



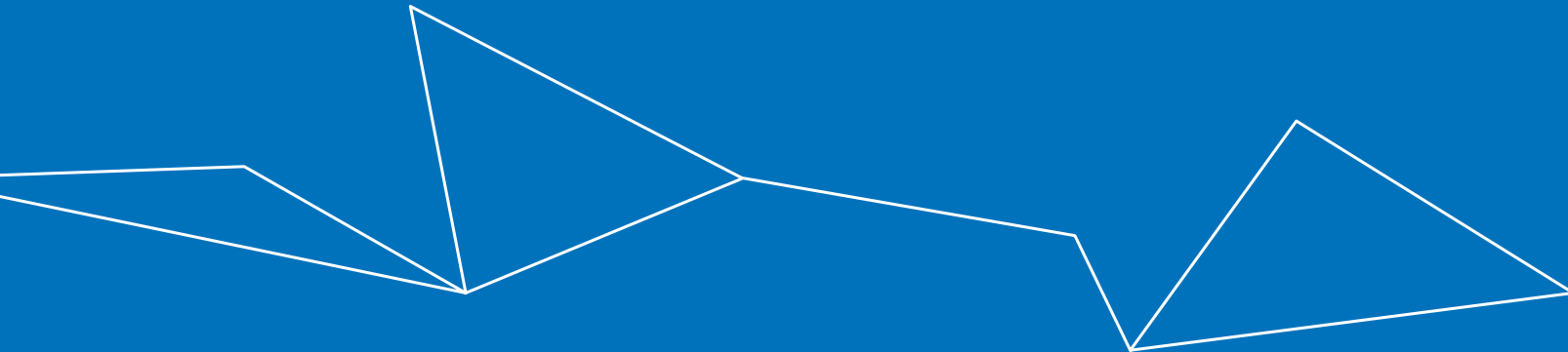
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| THE EXAM



Introduction

Initially, the fourth European Hematology Exam was scheduled to be held during the 25th EHA Congress in Frankfurt, Germany, and concurrently at five parallel sites. However, due to COVID-19, the Congress was turned into a virtual event, and the exam needed to be postponed. After careful consideration of alternate options, EHA's Curriculum-Exam Committee and Education Committee decided to organize the exam on Thursday, October 8, 2020. As with the parallel sessions in 2018 and 2019, national hematology societies were offered the possibility to organize a session for candidates residing in those countries. Due to travel limitations, no main session could take place.

Format

The exam consists of 100 multiple choice questions. It tests the candidates' knowledge on all eight sections of the [European Hematology Curriculum](#). The participants have 2,5 hours to complete the exam. The strength of this method is that it allows a large sample size of test items even within a limited testing time, testing knowledge in several areas with high reproducibility and it can be used in a web-based format with automatic objective correcting and scoring.

This resulted in 127 candidates taking the exam simultaneously at 12 locations:

Switzerland (Bern)	Bulgaria (Sofia)
Turkey (Istanbul)	Portugal (Lisbon)
Spain (Madrid)	Saudi Arabia (Riyadh)
Greece (Athens)	Kuwait (Kuwait City)
Iraq (Baghdad)	Lithuania (Vilnius)
Armenia (Yerevan)	Luxembourg (Differdange)

Exam candidate

“The exam covered almost all hematology topics, I will recommend it to all hematologists in my training program.”

Candidates

As national hematology societies organized the sessions, and no main session took place, candidates could only participate if they resided in one of the organizing countries. The number of candidates per country is listed in Table 1.

Country	Nr	%
Armenia	5	4%
Bulgaria	7	6%
Greece	10	8%
Iraq	9	7%
Kuwait	11	9%
Lithuania	1	1%
Luxembourg	1	1%
Portugal	20	16%
Saudi Arabia	27	21%
Spain	14	11%
Switzerland	18	14%
Turkey	4	3%
TOTAL	127	100%

Table 1. List of candidates of the fourth European Hematology Exam according to the country of residence (= exam location).



Examination day in Portugal.



The exam location in Iraq.



The exam location in Kuwait.

The exam is mainly aimed at hematologists who just finalized their specialty training. Figure 1 shows that, indeed, this is the largest group of participants. However, mid-career and senior hematologists are also interested in examining their knowledge, just as candidates still in training.

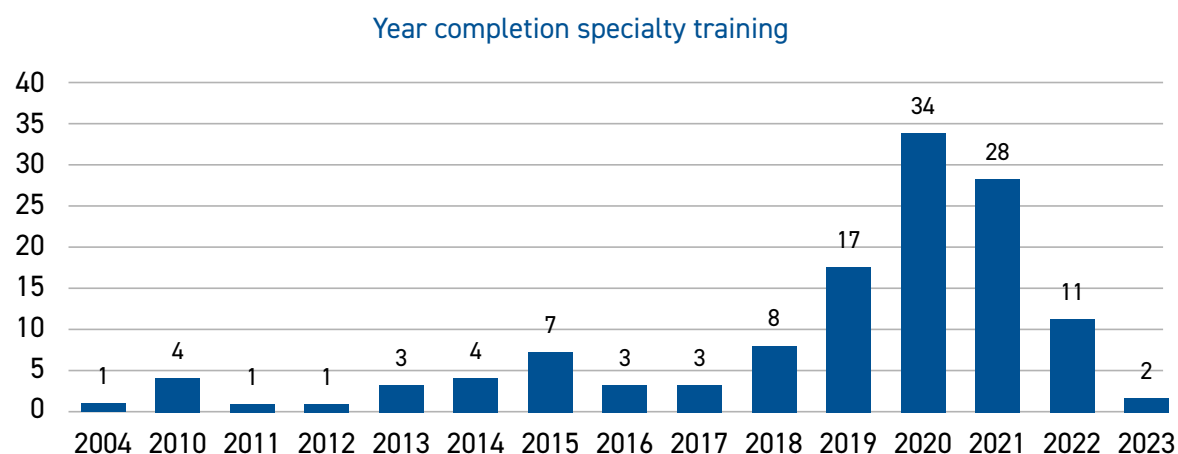


Figure 1. Number of candidates per year of completion specialty training

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.

Why did local organizers decide to organize an exam session?

“We felt urged to provide our members with the opportunity of taking the European Hematology Exam to test their knowledge and competence at an international level.”

– Local Exam organizer

In 2020, the number of parallel sessions continued to expand. Twelve national societies decided to collaborate with EHA and organized a session.

Seven of the organizing national societies have already indicated that they want to organize a session next year, and three more are considering it. All organizers would recommend national societies in other countries to organize a session.

Why would local organizers recommend national societies in other countries to organize a session?

“It will allow harmonizing hematology education in Europe and other countries in the world.”

– Local Exam organizer

National hematology societies are welcome to [contact EHA](#) to discuss implementation of the European Hematology Exam as part of their national exams and/or organize local parallel sessions.



José Tomás Navarro, Chair of the EHA Curriculum-Exam Committee and organizer of the Madrid session, opens the exam in Spain.



QUALITY ASSURANCE

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 Curriculum's full-spectrum, a Question Writers Group has been established. For this group, 19 experienced hematologists have been selected and trained by educationalists to write good exam items. In pairs, these writers worked on their questions and reviewed each other's questions. All questions were added to the question database. The Review Group selected the final 100 questions (which represented all Curriculum sections), and performed a second review. Ultimately, a final check was done by the Chairs of the EHA Education Committee, Curriculum-Exam Committee, and Question Writers Group, who are also members of the Review Group.

Analysis of the results

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 exam. This analysis always takes place after the exam, as it is based on the answers given by the candidates.



Item analysis

To evaluate each item's quality, the correlation between each item score and the exam score has been calculated (Rit and Rir values²). The higher this correlation, the better the item discriminates candidates on the ability that is being measured. In addition, the P-value (the popularity³ of the alternative that is being considered correct) of each item was calculated. Usually, the correct response is the most popular, so an item is remarkable if an alternative that is considered incorrect, is more popular. Based on this psychometrical analysis, 14 questions showed a deviant or remarkable pattern. This does not necessarily mean that those questions are incorrect; it is just a signal to investigate these items further. After a thorough scientific review, the Exam Review Group concluded that most of the items are correct. Action needed to be taken on only five of the items. For one item, the key was changed. Three questions were found to be ambiguous and were, for this reason, not considered in the final scores. Besides, the content experts realized that one question has more than one right answer due to regional variations depending on where the candidate trained. Therefore, for this question, it was decided that two answers would be considered correct instead of one.

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 0.88 and Guttman's lambda-2 is 0.89. These values are considered good for a low-stakes exam, and sufficient for high stakes exams by the European Federation of Psychologists' Association (EFPA) Review Model⁴ and the standards of the Dutch Committee of Test Matters⁵ (COTAN).

¹www.cito.com

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

³Defined as the percentages of responses

⁴See www.efpa.eu/professional-development/assessment

⁵See www.cotandocumentatie.nl/cotan/beoordelingssysteem (in Dutch, see www.psynip.nl/en/dutch-association-psychologists/about-nip/psychological-testing-cotan for the English version)

Standard setting

An equating procedure was applied to define the cut-off score, using item response theory (IRT), where the results of the 2020 exam could be placed on the same ability scale as the 2017, 2018 and 2019 exams. This means that candidates with the same ability have an equal chance of passing the exam, independently of the year they participated, taking into account the difficulty of the exam. This was allowed due to the specific test design that was used, and a sufficient fit of the IRT model. It resulted in a cut-off score of 59 (or more) items correct to pass the exam. This means that 99 candidates (78%) 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. Also, 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. (These scores can only be considered an indication and cannot be considered separate parts of the exam). Passing the exam is regarded as an extra quality stamp for hematologists; the national authorities will still grant the right to practice.

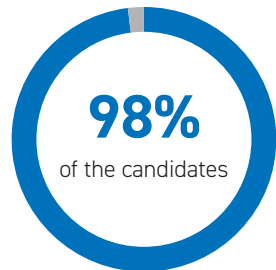
Exam candidate

“Thank you very much, very well organized, starting from registration until the end of the exam everything was smooth. The coverage of topics was excellent.”

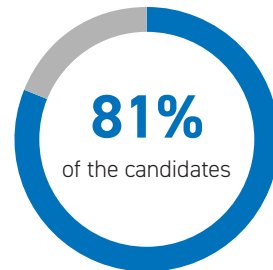
CANDIDATE EXPERIENCE



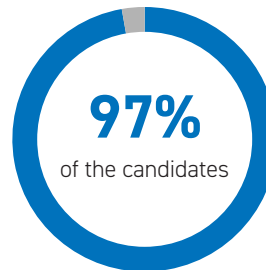
At the end of the exam, the candidates were asked to complete a short evaluation survey. The results of this survey showed that:



found the exam relevant (70%) or partly relevant (28%) to their hematology training.



experienced the exam setup as good or very good.



were able to finish the exam within 2,5 hours.



The European Exam in Turkey.



Exam candidate

“Excellent exam with relevant and well-structured questions”

| ACKNOWLEDGEMENT



EHA would like to thank the following experts for their time and effort towards making the 2020 European Hematology Exam a success:

Curriculum-Exam Committee

José Tomás Navarro, Spain (Chair)
Mariëlle Wondergem, The Netherlands (Vice-chair)
Gunnar Birgegård, Sweden (Chair Question Writers Group)
Antonio Almeida, Portugal
Alicia Rovó, Switzerland
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European Hematology Exam 2021

Currently, EHA is considering the options for organizing the 2021 European Hematology Exam in such a way that as many candidates as possible will be able to participate. More information will be available as soon as possible on the [EHA website](#). We hope to see you next year!





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