Report on the 7th European Examination for Young Neurologists.

Berlin June 19th 2015

Preamble

The European Examination for Young Neurologists is an initiative of the UEMS-Section of Neurology (also European Board of Neurology, EBN) in cooperation with the European Academy of Neurology (EAN). The first Exam was taken in 2009 under the supervision of professor Wolfgang Grisold.

The aim of this EBN-Examination is to add a contribution to setting European standards for the training of medical specialists in the field of neurology. Many European countries do have their own exit exams, they can compare their level with European standards, other countries can use the European exam as their national exit examination.

Until now, there is no legal status for European Board Examinations but in many countries these examinations are mandatory for completion of a specialist training. Especially anesthesiology and ophthalmology take an advanced position in this field.

The UEMS (Union Européènne des Médecins Spécialistes) supports the conferment of the title 'Fellow of the European Board or Neurology' (FEBN) to those candidates who successfully passed the examination.

Contents

The EBN-Examination does not principally aim at testing the ability of retrieval of knowledge but rather skills to use knowledge and to apply competencies. Therefore the Examination is a mixture of a written test and an oral examination. The written part consists of questions to be solved with use of reference sources ('open book', about 70%) and questions to be answered without ('closed book', about 30%). For the preparation of the written Examination we recommend a textbook, specific EAN-guidelines and EAN electronic learning modules (e-Brain).

Questions are provided by EAN-members according to the contents of the EBN-core curriculum and reviewed by an EBN-committee.

For the oral examination the candidate is asked to write an essay on public/global health or on ethics in the field of neurology. Furthermore a scientific critical appraisal on a clinical topic is required. These work-pieces should be prepared at home and sent in before the examination. The candidate may ask for help from the EBN-staff to achieve these tasks.

Candidates are invited to ask their questions on the contents by e-mail before the examination.

Exam Program

The whole exam is taken within one day at the site of the EAN-congress. Three to four hours are scheduled for the written examination, about half an hour for the oral examination. Knowledgeable invigilators, to be consulted in case of uncertainty, are available for the written examinations. The oral examinations are taken by two examiners from the EBN simultaneously. Observers from the World Federation of Neurology and the EAN are around during the oral examinations.

By the end of the day, the results are processed and a final mark is calculated. We aim at handing the certificates to the successful candidates at the end of the examination-day.

Data-processing

Data from the written tests are read by a data-analysis program. For each question the percentage of correctly answering candidates corrected for the level of guessing (Pc-value, Pc = 0 at the level of guessing) and the discriminating value in the whole test (RIT-value) are calculated. Questions with both a subliminal P-value and RIT-value are eliminated from the test before calculation of the marks: questions with a significantly negative RIT-value are eliminated in case of a Pc<.85, those without significant discriminating value in case of a Pc<.25, questions with a significant discriminating value only in case of a Pc<-.25.

The passing limit for the written examination is set by a pre-test Angoff procedure[1] (about 10 reviewers) and a post-test Cohen-procedure[2]. The final passing limit is set by using the optimal value of these both procedures. Students performing at the passing limit level get 55 out of 100 points.

The oral examinations are graded with help of standard forms (2/3) and a global impression of the examiner (1/3). Both examiners give their marks independently. The passing limit for oral examinations is set to 55 out of 100 points.

Results of written (weight factor 0.8) and oral examinations (weight factor 0.2) are taken together to a final mark. Candidates with 55 or more points out of the maximum of 100 are considered successful.

Candidates

In 2015 80 candidates applied for the Examination, finally only 63 showed up. 17 withdrew for several reasons, a.o. because of problems with visa, that had been applied for too late.

Belgium	4	Azerbaijan	1
Denmark	1	Cameroon	1
Germany	4	Egypt	6
Greece	2	India	4
Iceland	1	Iraq	3
Israël	1	Morocco	1
Italy	8	Pakistan	3
Portugal	3	Saudi Arabia	5
Slovenia	1	South Africa	1
Sweden	1	Tunisia	1
Turkey	10		
United Kingdom	1		
Total	39		24

[1]Livingston SA, Zieky MJ. Passing Scores: A manual for Setting Standards of Performance on Educational and Occupational Tests (1982).

[2]Cohen-Schotanus J, Van der Vleuten CPM. A standard setting method with the best performing students as point of reference: Practical and affordable. Med teacher 2010; 32: 154-160.

The Exam

The examination board reviewed 166 questions. 128 of these have been taken into the exam, the remaining questions have been delivered to the candidates for preparation of the examination. After the examination 10 questions have been eliminated on statistical grounds, leaving the written examination with 118 questions.

Question Processing

	Reviewed	Examined	Counted
Closed book multiple choice (Guidelines)	31	19	19
Closed book multiple choice (General neurology)	42	21	19
Open book multiple choice (Clinical cases)	45	40	37
Open book extended matching (Clinical cases)	48	48	43

Guidelines to be studied

- EFNS guidelines on the Clinical Management of Amyotrophic Lateral Sclerosis (MALS) – revised report of an EFNS task force. European Journal of Neurology 2012, 19: 360–375.
- EFNS/ENS Consensus on the diagnosis and management of chronic ataxias in adulthood. European Journal of Neurology 2014, 21: 552–562.
- EFNS-ENS Guidelines on the diagnosis and management of disorders associated with dementia. European Journal of Neurology 2012, 19: 1159–1179.
- EFNS/MDS-ES recommendations for the diagnosis of Parkinson's disease. European Journal of Neurology 2013, 20: 16–34.
- Mild traumatic brain injury. European Journal of Neurology 2012, 19: 191–198.
- EFNS/ENS Guidelines for the treatment of ocular myasthenia. European Journal of Neurology 2014, 21: 687–693.
- European guidelines on management of restless legs syndrome: report of a joint task force by the European Federation of Neurological Societies, the European Neurological Society and the European Sleep Research Society. European Journal of Neurology 2012, 19: 1385–1396.
- EFNS-ENS guidelines for the use of PCR technology for the diagnosis of infections of the nervous system. European Journal of Neurology 2012, 19: 1278–1297.
- Summary of the recommendations of the EFNS/MDS-ES review on therapeutic management of Parkinson's disease. European Journal of Neurology 2013, 20: 5–15.

The distribution of questions in the written examination according to the EBN core curriculum has been as follows.

	Anatomy *	Biology *	Therapy *	Physiology *	Genetics *	Chemistry *	Pathology *	Clinics *	Imaging *	Toxicology *	Epidemics
	.	.	.	.	.	.	.	.	.	.	.
Oncology			1				3		1		
Trauma								1	1		
CSF						1					
Infections		2	2					1	2		1
Immunology		1				1		2		4	
Vascular	1	1		1				4	2		
Epilepsy			1	1				2			
Sleep											
Headache				1	1			4	1	1	
Cognition	1	1		1		1		2	1		
Extrapyramidal	1	3	3	2	1	3	1		1	2	
Cerebellar	1				1			2			1
Degeneration (other)					1			3			
Spinal cord		2	1	2		1		1			
Polyneuropathy		2	2	1	2					2	
Mononeuropathy	1							3			
Cranial nerves			1		1			4		1	
Myopathy				2	3			2			
Myasthenia			1					3			
Consciousness				2				4			
Complications		1		2				3			
Int Medicine											

All candidates have sent two contributions for the oral examination (Appendix 1). At the examination, the essay about public health or ethics was introduced with a powerpoint-presentation. Thereafter the topic was discussed in English, French, Turkish or German. The critical appraisal of a topic was discussed without introduction. The examiners filled their scoring-forms (Appendix 2) independently to get to a mark.

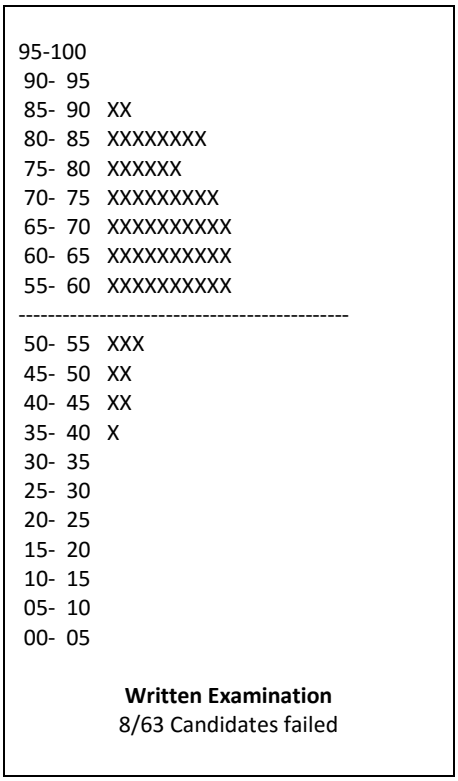
Results

The mean difficulty (expressed in mean Pc, the lower Pc, the more difficult the test) was pretty similar in the three compartments of the written test with values between .65 and .70 (>.80 is easy, .70-.80 moderate, <.70 difficult). The internal consistency was calculate with Kuder Richardson 20 (KR20, a variant of Crohnbach's Alpha) providing values between 0 and 1 with .65 being acceptable, .80 being fine. The individual parts of the written tests were reasonably reliable, the whole written test taken together was excellent, indicating that we could do with less than 118 questions.
To estimate the achievements on the several tests, scores were normalized with correction for change, for each part of the test. Maximum scores were 100, the minimum was set to 0. >55% was considered satisfying. It appeared that there was an internal compensation for the different tests, on the whole 23% of the candidates would fail using this arithmetical exercise without considering a passing limit.

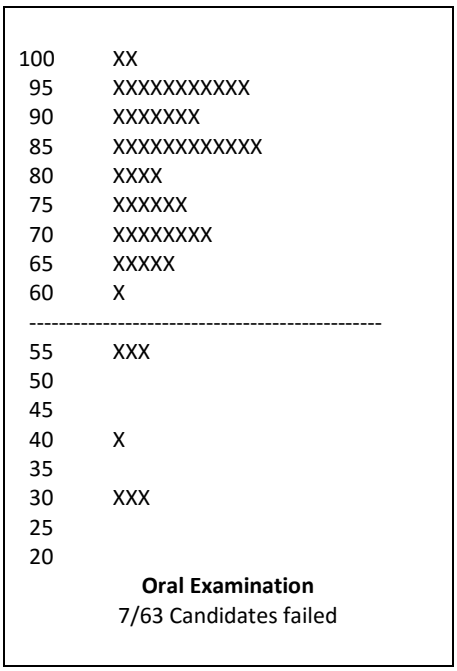
Test	# questions	mean Pc	KR20	% candidates with <55% real knowledge
Closed book MCQ	38	.69	.75	41
Open book MCQ	37	.66	.70	34
Open book EMQ	43	.67	.75	44
Total	118	.67	.88	23

The passing limit with help of Angoff's procedure was around 63%, taking Cohen's procedures the limit was set to 56% as agreement between the reviewers was poor in the Angoff procedure.

Considering the results of the written examination in the light of this passing limit, results are the following:



Scores in the oral examinations normalized to values between 0-100 are as following:



Taking results from written and oral examinations together 8/63 candidates failed in the whole exam. Half of these candidates had their training in Europe.

	7th EBN Exam Berlin 2015		6th EBN Istanbul 2014	
90 – 100				
80 – 90	3	5%	6	10%
70 – 80	21	33%	13	21%
60 – 70	11	17%	24	39%
50 – 60	20	32%	14	23%
40 – 50	8	13%	4	7%

All candidates got a personal feed-back on their achievements. Failing candidates got a new invitation for the next EBN-Exam with a reduced admission fee.

Survey

A survey with open and closed question was taken amongst the candidates.
Results are presented in Appendix 3.

Conclusion

The 7th Exam of the European Board of Neurology may be considered as a multi-competency examination with reliable results and a nice outcome in 2015 for 87% of the candidates. Regarding the statistical results and the comments of the candidates the number of written questions should be reduced. The overall satisfaction amongst the candidates was good, some remarks of the candidates should be taken in to account.

Please, visit our Website www.uems-neuroboard.org for further information.

JBM Kuks, December 2015

Chair EBN Examination Committee
Professor of Neurology and Medical Education
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Appendix 1 Topics chosen by the candidates for oral examination.

A Topics on public health or global health.

National approaches and problems

- Malnutrition in Iraq.
- Malnutrition in Turkey
- Stroke care in South Africa
- Stroke management in Egypt 2X
- Impact of dementia on the Italian Health System.
- Pre-conceptional counseling in Women with epilepsy in India.

Prevention

- MMR vaccine and autism.
- Measles Control in Europe and Italy.
- Compulsory vaccination for measles.
- Delayed introduction of Varicella Vaccine in Turkey.
- Neurological complications of acute HEV infection.

Availability of medical care.

- The insurance system in Sweden.
- The insurance system in Saudi Arabia.
- Difference between private and public health care in Ireland
- Covariance between private and public healthcare in India
- Private and public health care in India
- Difference between private and public health care in Nigeria.
- Public Health in Portugal.
- Public and private health care in Morocco
- Public-private partnerships in healthcare in Portugal
- Difference between public and private health care system
- Equality in the distribution of medical care.
- The Abolition of Medicine by the Market

Disease and Community

- Epilepsy and Stigma.
- Excessive Daytime Sleepiness and Driving.
- Epilepsy and Driving.

Other issues

- Somatization Disorders.
- Effect of work changes in the practice of neurology.
- Use of smartphones: a potential hazard to public health?
- Quackery in Developing World .
- Belief of Jinn as major cause of epilepsy in Saudi Arabia.

B Topics on neuro-ethics.

End of life decisions

- End Stage ALS and artificial ventilation.
- ALS-patient asking for interrupt drug treatment.
- Tracheostomy ventilation in ALS.
- Religion and End of Life.
- Enteral feeding tubes in dementia.
- Diagnosis disclosure in terminal illness.
- Euthanasia in disabling multiple sclerosis.
- Dementia and euthanasia: the Belgian law.

Informed Consent

- Informed consent in thrombolysis.
- Tricks And Tips Of The Informed Consent Process .

Revealing a diagnosis

- Truth-telling in the doctor-patient relationship.
- Revealing a diagnosis of Epilepsy.
- Truth telling to a Patient about ALS.
- Disclosure of the diagnosis in MS.
- The right not to know.
- Amyloid PET imaging.
- Incidental findings in genetic testing
- Predictive genetic testing in Huntington's disease

Autonomy of the Patient

- Patients demanding unnecessary investigations
- Patients' preference and randomization

Car Driving

- Car Driving in Epilepsy 4x
- The demented patient and his driving license

Other ethical issues

- Blood transfusion in the comatose Jehovah's witness
- Medical errors and brain death
- The noncompliant patient
- Gifts of pharmaceutical industry to physicians

C Critical appraisal of topics.

Neuroimmunology and MS

- Rituximab in MS.
- Treatment of radiologically isolated syndrome
- IVIG in MS during pregnancy.
- Stem Cell Therapy for secondary progressive MS
- Risk of IRIS with ceasing of natalizumab.
- Natalizumab discontinuation in MS patients.
- Autologous hematopoetic stem cell transplantation in MS
- Retinal changes and global brain atrophy in MS
- Methotrexate in multiple sclerosis.

- Rituximab to treat neuromyelitis optica.
- Infliximab in neuro-Behcet disease.

Cerebrovascular Disease

- Anticoagulants in cervical artery dissection.
- Treatment of acute cervical artery dissection.

- Therapeutic hypothermia in ischemic stroke.
- Tirofiban in the treatment of acute ischemic stroke.
- Intravenous thrombolysis for ischaemic stroke in children
- Intra-arterial treatment in acute ischemic stroke.

- Intracranial Stenting in Intracranial arterial stenosis.

- Dural puncture and Cerebral Venous Thrombosis.
- Endovascular treatment of cerebral venous sinus thrombosis
- D-dimer in suspected cerebral venous thrombosis

- Antiplatelet therapy in minor ischemic stroke

- ACE-Inhibitors for secondary Prevention after ischemic Stroke.

Pain and Headache

- Botulinum toxin in trigeminal neuralgia
- Magnesium sulfate and migraine
- Onabotulinum toxin A in trigeminal autonomic headaches

Movement Disorders

- Apomorphin in Parkinson’s Disease.
- Amantadine for levo-Dopa induced dyskinesia.
- Serum uric acid levels in Parkinson's disease.
- Treatments for functional movement disorders.
- Impulse Control Disorders (ICD) in Parkinson’s Disease.
- Early deep brain stimulation in Parkinson’s disease.
- Motor Cortex Stimulation for advanced Parkinson's Disease.
- Statins and Parkinson's disease.
- Riluzole for Parkison Plus Syndromes.

Neuromuscular

- Other immunotherapies for CIDP
- IVIg in short term treatment of CIDP
- Autonomic Dysfunction in CIDP
- Rituximab in adult CIDP

- Methylprednisolone for Myasthenia Gravis
- Rituximab for Myasthenia Gravis?

- Relationship with sport and ALS?
- Mechanical in-exsufflator in ALS.

- Cerebrovascular abnormalities in Pompe's disease?
- Reducing exercise intolerance in McArdle patients
- Dietary measurements for McArdle's disease.

Epilepsy

- Vitamins to prevent epileptic seizures.
- Early seizures in ischemic stroke.
- Levetiracetam for partial seizures.
- IV Lacosamide in status epilepticus.
- Lamotrigine for childhood absence seizures
- Seizure prophylaxis in traumatic brain injury
- Anterior Thalamic DBS for epilepsy.

Infections

- Voriconazole in cryptococcal meningitis.
- Herpes simplex virus and ischemic stroke

Other diseases

- Modafinil for Narcolepsy.
- Medication in terminal stage dementia.
- Neurological manifestations in coeliac disease.
- Gabapentin in the management of spasticity.
- rTMS to reduce spasticity in spinal cord injury.
- Evidence for treatment options in MELAS syndrome.
- Memantine in Frontotemporal Dementia.
- Hyperbaric Oxygen for Radiation Myelopathy.
- Melatonin for REM sleep disorders
- Immunosuppression in Hashimoto Encephalopathy.

Appendix 2 Scoring forms for oral examination.

Scoring form for the Critical Appraisal of a Topic (CAT)

	Item Score	Maximal Score	Actual score*
1	There is a clear, concise and focused question	1	
2	The question is original and relevant for clinical practice	2	
3	The search strategy is adequate	1	
4	The research outcome is adequate	1	
5	The table with results is correct	2	
6	The comments described are adequate	3	
7	The final conclusion is sound	1	
8	The references are really the current key-references for this problem	1	
9	The answers to the questions on the exam are adequate	2	
10	Handling ignorance during the exam is adequate	1	
	Total (please add up number 1-10)	15	
	Additional Global Score		
	Global impression on a 10 points scale 1=extreme poor - 10 = excellent	10	

Scoring form for the Essay on Public Health / Ethics Presentation

	Item Score	Maximal Score	Actual score*
1	The topic is relevant for clinical practice	1	
2	There is a sound introduction	2	
3	The elaboration of the problem is adequate	2	
4	The own vision of the candidate is clear	1	
5	The presentation is clear and to the point	2	
6	The answers to the questions are adequate	2	
7	Handling ignorance is adequate	1	
8	Time management is adequate	1	
	Total (please add up number 1-8)	12	
	Additional Global Score		
	Global impression on a 10 points scale 1=extreme poor - 10 = excellent	10	

Appendix 3 Survey amongst the candidates

1. What has been your motivation for taking the exam? (You may take several answers)

O	To test your skills and knowledge	32
O	To get a certificate	20
O	To be a fellow of the European Board of Neurology	27
O	To increase possibilities for migrating to another country	8

53/63 response rate

2. Have you taken another national of international postgraduate neurology exam?

O	The Royal College Exam (London)	8
O	A national Exam in your own country	24

53/63 response rate

3. Are you satisfied with the information given before the exam and with the help by e-mail?

Not at all					Very well
0	0	3	9	38	

4. Did you find the written questions clearly formulated?

Not at all					Very well
0	6	6	23	15	

5. Have you been able to answer the MC-questions properly within the timeframe given?

Not at all					Very well
0	2	9	14	25	

6. Have you been able to answer the EM-questions properly within the timeframe given?

Not at all					Very well
0	3	10	14	22	

7. Are you satisfied with the instructions and help during the exam?

Not at all					Very well
0	1	3	10	36	

8. What is your opinion on having an open book exam? Do you appreciate this as a realistic part of a board exam?

Not at all					Very well
1	4	5	13	24	

9. What is your opinion on the CAT and essay assignments? Do you appreciate these as a realistic part of a board exam?

Not at all					Very well
0	2	10	12	22	

10. Have you been satisfied with the oral examination?
    Do you appreciate this as a realistic part of a board exam?

Not at all					Very well
0	3	6	11	22	

11. Did you find the examination fee affordable?

Not at all				Very well
2	8	10	10	12

12. Do you feel a European board exam useful
    while having other postgraduate exams available as well?

Not at all				Very useful
0	2	4	14	22

Additionally written remarks by the candidates

Do you feel a European board exam useful while having other postgraduate exams available as well?

The value of an Exam anyway

- It should be a statement of excellence if properly managed.
- It is a new trend in our field, it will take time to get more worth.
- It is Improving education
- The questions and exam modules really test the ability of the candidate in way that covers all the fields in practical work.
- Important to get more experience
- It is always good to be able to test knowledge especially by an objectively constructed exam.
- It helps for an external validation of my knowledge.

The value of an EBN-Exam

- For us it is only to upgrade the knowledge and get certificate but it is still not a recognized exam in our country.
- Although it's important exam, but it has not any legal consequences, it is only show sign of competence no more.
- It makes one more confident and a title of 'fellow EBN' is worth

European idea

- To have a reference of excellence recognized by all European countries
- There needs to be a European Board exam as Europe as the world's leading cultural zone should be represented in medical qualifications as well. The EAN's importance will grow!!!
- I am in support of all European activities.
- The certificate helps to check whether the knowledge gathered in our country is equivalent to that of European Neurologists
- European board exam gives a better impression of a neurologist of European standard.
- It may be the expression of a European standard of care in neurology, since still today the general practice widely varies among countries and guidelines are not always followed.
- It is a good way to make oneself familiar with specific European guidelines for neurological diseases.
- To harmonize neurology education in Europe and to improve physician mobility
- It can set the standards to establish equivalence between certification exams provided in different countries.
- European Idea should be promoted
- I believe that a unified European exam should substitute those other postgraduate exams to serve as a European standard in neurology. This would ensure European Neurologists would have similar trainings and demonstrate similar skills as standard.

Do you have any further comments or recommendations for improvement of the examination process?

CAT and Essay

- CAT and essay very good idea.
- The time given to prepare for CAT and essay assignment was too short (red.: this candidate subscribed 3 weeks before the exam)

The Questions

- Reduce the number of questions. Too long examinations.
- To justify 6 questions need to be improved
- I think the exam was more difficult than the example questions
- The questions for the third part were too long, especially for clinical presentation.
- There was too much emphasis on the EFNS guidelines. Please include more questions on functional, vascular, infections, autoimmune disorder.
- Please put emphasis on strict observation to avoid fraud and cheating.
- More simple cases and questions
- Too many questions, too long the exam. Pauses too long.

Open book

- I think, open book exam question are good and essential part, because this part also assesses the clinical practice. CAT is not necessary.
- Some open book questions are OK, but there were too many.
- I think electronic devices should be allowed because old-fashioned books are not used as …. Nowadays. And if the purpose of the open book exam is to test the ability to use knowledge in clinical case, this can better be done with an electronic source which is always available in clinical circumstances.
- I still think that the exam need to be closed book exam.
- Electronic devices should be permitted (pubmed, apps, etc)

Oral examination

- More oral than written parts
- I think the oral examination should be modified. Maybe there is no need for doing it. Maybe the written comments are enough.

Feed back

- It may be useful to have the answers to the questions at the end (sent via e-mail)
- Oral communication: do not give free the questions, because you will be forced to make new questions again and again and these questions will be more and more artificial and detailed.
- Unlike other exams we do not have to wait for the results.

General

- Too difficult an exam.
- It was perfect exam
- I thoroughly enjoyed having this exam. It is very well structured and organized.
- There is a need for a neurological exam test with live patients like.
- I like this exam. I think improves neurologic process
- As with any form of exam, only strict and contingent quality measures will result in a good reputation! Do not lower the difficulties!
- Thank you for the great opportunity, it was a pleasure