

# Report on the 8<sup>th</sup> European Examination for Young Neurologists.

Copenhagen May 27<sup>th</sup> 2016

## *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 Européenne 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. This year we started with scanning the submissions for plagiarism and some candidates have been requested to revise their CAT and/or essay.

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,  $P_c = 0$  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  $P_c < .85$ , those without significant discriminating value in case of a  $P_c < .25$ , questions with a significant discriminating value only in case of a  $P_c < -.25$ .

The passing limit for the written examination is set by a pre-test Angoff procedure<sup>1</sup> (about 10 reviewers) and a post-test Cohen-procedure<sup>2</sup>. 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 2016 100 candidates applied for the Examination, finally only 72 showed up.

<u>European</u>		<u>Non-European</u>	
Albania	1	Azerbaijan	2
Austria	1	Egypt	6
Belgium	6	India	3
Denmark	1	Iraq	2
Eire	1	Japan	1
France	2	Jordania	1
Germany	6	Libanon	1
Italy	5	Morocco	1
Macedonia	1	Pakistan	1
Malta	2	Saudi Arabia	7
Netherlands	1	Sudan	3
Norway	1	Syria	1
Poland	2	Tunis	1
Portugal	3	Turkey	5
Spain	2	USA	2
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	35		37

The examination board reviewed 158 questions. 100 of these have been taken into the exam: 20 EAN-guidelines closed book, 20 general neurology closed book and 60 general neurology open book.

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

<sup>2</sup>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.

### 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.
- EFNS-ENS/EAN Guideline on concomitant use of cholinesterase inhibitors and memantine in moderate to severe Alzheimer’s disease. European Journal of Neurology 2015, 22: 889–898

The distribution of questions in the written examination according to the EBN core curriculum can be found in appendix 1.

All candidates have submitted two contributions for the oral examination (Appendix 2). 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 3) independently to get to a mark.

### Results

Five out of 100 questions (5%) have been skipped because of relatively unreliable statistics.

The mean difficulty is expressed in mean Pc; the lower Pc, the more difficult the test.

Pc >.80 is easy, Pc between .70 and .80 is moderate, Pc <.70 is difficult.

In the 2016 Exam the mean Pc was .67, which was comparable to values found in the 2014 and 2015 Exams.

The internal consistency is calculated with Kuder Richardson 20 (KR20, a variant of Cronbach’s Alpha) providing values between 0 and 1 with .65 being acceptable, .80 being fine.

In the 2016 Exam the KR20 was equal to .91, indicating a high internal consistency and thus high reliability of the whole test.

The passing limit with help of Angoff’s procedure was around 44%, taking Cohen’s procedure calculating the maximum by the mean of the five highest scores the limit was set to 45%.

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

95-100	X
90- 95	XX
85- 90	XXXXXX
80- 85	XXXXXXXXXX
75- 80	XXXXXXXXXX
70- 75	XXXXXXXXXX
65- 70	XXXXXXX
60- 65	XXXX
55- 60	XXXXXX
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50- 55	XXXXXX
45- 50	X
40- 45	X
35- 40	
<35	
<b>Written Examination</b>	
9/72 Candidates failed	

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

100	XXX
95	XXXXXXXX
90	XXXXXX
85	XXXXXXXX
80	XXXXX
75	XXXXXXXX
70	XXXXXXXXXX
65	XXXXXXXXXX
60	XXX
-----	
55	XXXX
50	X
45	X
40	XX
35	X
30	
<b>Oral Examination</b>	
9/72 Candidates failed	

Taking results from written and oral examinations together 5/72 candidates (7%) failed in the whole exam. This seems a rather low percentage but it should be realized that a selection has been performed during the preparation process. 28 out of 100 candidates decided not to take part of the exam for various, partially unknown, reasons. They may have decided to postpone the exam to a next year to prepare themselves in a better way.

	8 <sup>th</sup> EBN Exam Copenhagen 2016		7 <sup>th</sup> EBN Exam Berlin 2015		6 <sup>th</sup> EBN Istanbul 2014	
90 – 100	3	4%				
80 – 90	11	14%	3	5%	6	10%
70 – 80	30	42%	21	33%	13	21%
60 – 70	14	20%	11	17%	24	39%
55 – 60	9	13%	20	32%	14	23%
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40 – 55	5	7%	8	13%	4	7%

All candidates got a personal feed-back on their achievements. Failing candidates will get 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 can be summarized as follows:

- Satisfaction with the information support before the examination (90%)
- Questions have been formulated clearly (70%)
- Questions could be answered within the timeframe given (75%)
- The open book exam is an essential part (65%)
- The oral part is essential in the board exam (80%)
- The examination fee is affordable (60%)

### Some additional individual comments

- This is an excellent and comprehensive exam testing your analytical skills and clinical skills simultaneously.
- It sets up the standards of a neurologist in other domains such as researcher, professional, teacher, evidence-based and social-medicine care (USA-candidate).
- Add some more computer-based questions on radiology, clinical neurophysiology a.o.
- Examiners could be better prepared.

### Audit

The EBN-Exam in Copenhagen has been appraised by a delegation of the central UEMS-Examination Board (CESMA). In brief, conclusions can be summarized in the following way.

- The UEMS-CESMA observers were positively impressed by the standard of the Exam.
- The way the candidates were informed and supported before and during the written examination was adequate.
- The evaluation of the exam results by the chairman and the communication with the examiners was adequate.
- Some advices and recommendations for the future oral examinations: improvement of timing, extension of the number (there are now 2 of these) e.g. with a clinical examination station, professionalization of examiners, increasing the number of examiners per candidate

### *Conclusion*

The 8<sup>th</sup> Exam of the European Board of Neurology may be considered as a multi-competency examination with reliable results and a nice outcome in 2016 for 92% 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, but we could do better following some remarks of the candidates that definitely should be taken into account.

In the next future we will further professionalize data management, examiner training and feed-back system. Furthermore the exam will be extended with more oral stations and computer-based questions.

Please, visit our Website [www.uems-neuroboard.org](http://www.uems-neuroboard.org) for further information.

Prof JBM Kuks, MD PhD  
Chair EBN Examination Committee  
Professor of Neurology and Medical Education  
University Medical Centre Groningen  
The Netherlands

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## Appendix 1 Distribution of questions according to topics

	1. Anatomy	2. Biology	3. Therapy	4. Physiol	5. Genetics	6. Chemistry	7. Pathol	8. Clinics	9. Imaging	10. Toxicol	MCQ Open &	MCQ Closed %
1. Oncology	1				1	1		1 1	1		6	
2. Trauma				1		1		1	1			4
3. CSF				1		1	1	1			2	2
4. Infections		1	1			1		1 1	1		3	3
5. Immunology		1						26		1	2	1
6. Vascular	1 1				1		1	1 1	1 1		8	
7. Epilepsy	1	1		1		1		1 1			3	3
8. Sleep			1					1 1			2	1
9. Headache								1			1	
10. Cognition	1		1	1		1	1	1 1			1	6
11. Degeneration Extrapiramida	1	1	1 1	1	1	1	1 1 1	1	1	1	8	5
11. Degeneration Cerebellar	1			1	1			5			1	3
12. Spinal cord & Brain Stem	1		1		1	1					2	2
13. Polyneuropathy				1	1			1		1	2	2
14. Mononeuropathy	1				1						2	
15. Cranial nerves	1		1	1	1			1 1 1			5	2
16. Myopathy					1	1	1	1 1			3	2
17. Myasthenia				1				1		1	2	1
18. Complications Int Medicine						1	1	1			1	2
19. Consciousness	1					1	1	1			3	1
20. Autonomous NS			1		1		1				3	
<b>Open Book MCQ &amp;</b>	<b>5</b>	<b>2</b>	<b>4</b>	<b>3</b>	<b>8</b>	<b>4</b>	<b>6</b>	<b>22</b>	<b>4</b>	<b>2</b>	<b>60</b>	
<b>Closed Book MCQ %</b>	<b>6</b>	<b>2</b>	<b>4</b>	<b>6</b>	<b>2</b>	<b>7</b>	<b>4</b>	<b>5</b>	<b>2</b>	<b>2</b>		<b>40</b>

## Appendix 2 Topics chosen by the candidates for oral examination.

### **A Topics on public health or global health.**

#### *National approaches and problems*

- Malnutrition in India
- Vitamin D deficiency in India
- MS in Egypt
- Bell's Palsy in Kuwait
- Botulism in Poland
- TBC in Portugal
- Middle East Respiratory Syndrome

#### *Prevention*

- Vaccination against meningitis during Hajj<sup>®</sup> in Saudi Arabia
- New Born Screening for inborn metabolite and endocrine disorders

#### *Availability of medical care.*

- tPA in Saudi Arabia
- Telestroke centre in Riyadh
- Telestroke
- Stroke characteristics and neurointerventional outcome
- Treatment inequalities for MS in Europe
- Disease Modifying Drugs for Multiple Sclerosis in Egypt
- Organization of headache care

#### *Insurance*

- Insurance system SA
- Private and Public health in SA
- Health Care Insurance System in UAE
- Health Care system MS in Tunisia

#### *Disease and Community*

- Epilepsy and public health
- Epilepsy and driving 6x
- Car driving in narcolepsy

#### *Other issues*

- Employment of Polish Doctors
- How health care professionals should be paid
- Nonconcentrational Terrorism as a public health problem

### **B Topics on neuro-ethics.**

#### *End of life decisions*

- Asking for Euthanasia in disabling MS
- Ethical issues with artificial hydration in palliative neurology patients
- Prolonged ventilation in ALS 4x
- Euthanasia in Dementia
- Feststellung des Hirntodes



### *Organ donation*

- My organs are my greatest legacy
- Brain death and organ transplantation in Muslim country
- Organ donation in Morocco

### *Informed Consent*

- Informed consent in do not resuscitate disorders
- Informed consent in dementia

### *Revealing a diagnosis*

- To tell or not to tell the risk of SUDEP?
- Telling the truth in hopeless disease
- Communicating about ALS diagnosis
- Family requests conceal a diagnosis

### *Ethics of genetics*

- Next generation Sequencing
- Genetic counseling
- Preclinical testing in Huntington's disease
- Incidental findings in genetic research: disclosure

### *Autonomy of the Patient*

- A care driver with epilepsy forbidding you to make known his diagnosis
- To prescribe or not to prescribe in a demanding patient
- The request for brain autopsy in patient management
- Patient's non-compliance

### *Therapies*

- Unproven treatment for incurable disease
- Complementary and alternative medicine in MS
- Patients wishing to have experimental Stem Cell treatment
- Venous Insufficiency and MS a high cost hypothesis
- Failure of ALS trials

### *Industrial interference*

- Taking presents from industry
- Gifts from pharmaceutical companies

### *Medical mistakes*

- Dealing with medical errors
- Dealing with mistakes in Germany

### *Dealing with patients*

- What to do when a patient brings a gift
- Dealing with the "sexually seductive patient"

### *Other ethical issues*

- Epilepsy stigma
- Confidentiality
- Professionalism
- Conflicts of interests in hospital staff
- Elderly financial abuse

## C Critical appraisals of topics.

### *Neuromuscular Diseases*

- Subcutaneous Immunoglobulin for inflammatory myopathy
- Botox for siallorrhoea in ALS
- The diagnostic accuracy of single-fiber EMG in the diagnosis of myasthenia gravis
- Second course of IVG in GBS
- Rituximab in CIDP
- Antiviral therapy for GBS
- IVIG for neuralgic amyotrophy

### *MS and other white matter diseases*

- Rituximab for optic neuritis 2x
- IVIG for Optic neuritis
- Steroids in viral optic neuritis
- Cervical trauma and MS
- Rituximab for RRMS
- Usefulness of periodic evoked potentials in Multiple Sclerosis
- Modafinil to treat MS-related Fatigue
- Plasma exchange for MS
- Biotin for PPMS
- Neuro Behcet with spinal cord involvement
- Melatonin for treatment of fatigue in multiple sclerosis patients
- Chitinase in clinical isolated syndrome
- Cholinesterase inhibitors for cognition in MS
- MTX in MS
- Vitamin D Supplementation and Disease Activity in Multiple Sclerosis
- Fingolimod for MS and side effects
- CSF IgM oligoclonal bands in MS
- Role of Rituximab as a DMA in MS

### *Movement disorders*

- Safinamide to treat dyskinesias
- Placebo effect in Huntingtons disease
- Tetrabenazine for the treatment of chorea
- Impulse control behavior disorders with dopamin therapy in RLS

### *Epilepsy*

- Deep brain stimulation for epilepsy
- Levetiracetam for electrical status epilepticus during sleep
- Lacosamide for status epilepticus
- Use of EEG in suspected epilepsy
- Lamotrigine in Pregnancy, effect on child
- Antiphospholipid syndrome and epilepsy
- rTMS for refractory focal epilepsy

### *Stroke*

- Foramen Ovale closure and secondary prevention for secondary stroke
- Hemispherectomy in space occupying ischaemic stroke
- MRI findings in small vessel disease
- Tenecteplase and acute stroke
- Streptokinase in ischemic stroke
- Clopidogrel and lumbar puncture
- NOACs for venous sinus thrombosis
- Cangrelor for ischemic stroke

- Migraine and the risk of stroke
- Cerebrolysin in ischemic stroke
- Cerebral microbleed and risk of intracerebral hemorrhage after thrombolysis
- Alteplase for ischemic Stroke
- Endovascular thrombectomy in the elderly

#### *Meningitis / Encephalitis*

- Immunotherapie for post HSV Encephalitis
- Steroids and HSV encephalitis
- Valciclovir for Bell's palsy

#### *Neuro-immunology*

- Symptoms in NMDA encephalitis
- Treatment of LGII antibodies encephalitis
- NMDA-Encephalitis
- NMDA receptor antibodies in CSF and serum

#### *Pain*

- Topiramate in migraine prophylaxis
- Sphenopalatine ganglion in Cluster headache
- Botox for tension type headache
- Sphenopalatine block for treatment of Cluster headache
- Best emergency therapy for migraine headache.
- SSRA in Fibromyalgia
- Lamotrigine for migraine
- Pulsed radiofrequency for chronic radicular pain
- Intravenous Acetylsalicylic acid in acute migraine
- Onabotulinumtoxin A for chronic migraine
- Is chronic pain a brain disease?
- A modern approach to pain management

#### *Dementia / Cognition*

- Mirtazapin-Behandlungseffekte im Alter
- VP Shunt for INH
- Biomarkers for Alzheimer
- Conversion and brain abnormalities
- Naming errors after temporal resection
- Insulin-mediated function in Brain and Alzheimer
- Melatonin for insomnia in dementia

#### *Various*

- Brain Stimulation for Holmes Tremor
- Steroids effect on CNS Lymphoma
- Role of TCD in brain death

## Appendix 3 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	
	<b>Additional Global Score</b>		
	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	
	<b>Additional Global Score</b>		
	Global impression on a 10 points scale 1=extreme poor - 10 = excellent	10	