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## Opinion

## Can 'Fellow of the European Board of Ophthalmology Subspecialty Diploma in Glaucoma,' a subspecialty examination on glaucoma induce the qualification standard of glaucoma clinical practice in Europe?

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From 2015, the examination of Fellow of the European Board of Ophthalmology Subspecialty Diploma in Glaucoma (FEBOS-Glaucoma) was launched by the European Board of Ophthalmology (EBO) in cooperation with the European Glaucoma Society (EGS). This opinion aims at disclosing the background of the examination, prerequisite to the examination, and the value of the FEBOS-Glaucoma diploma.

### Background of examination of Fellow of the European Board of Ophthalmology Subspecialty Diploma

The EBO was created in 1992 following a motion of the Union Européenne des Médecins Spécialistes (UEMS), and is a permanent working group and educational body of the UEMS Ophthalmology Subspecialty section [1]. As an educational working body, the essential role of the EBO is to promote harmonization in education, training, and knowledge in ophthalmology within UEMS (associated) countries, where heterogeneity in medical practice exists. This is particularly important in the current era of population migration including medical

doctors.

The EBO has gained respect in the last few years, not only within Europe but also on a worldwide level, for harmonizing education and training in ophthalmology within UEMS (associated) countries. One of the means available to EBO is the organization of the comprehensive European Board of Ophthalmology Diploma (EBOD) examination, which has been organized on a yearly basis since 1995 [1,2,3,4]. The EBOD diploma and the related title of Fellow of the European Board of Ophthalmology (FEBO) obtained by candidates who have been successful at the comprehensive EBOD examination ensures a minimum standard of knowledge in comprehensive, general ophthalmology among specialists and residents who are in their final or fourth year of training within UEMS (associated) countries [5]. This FEBO title has become the hallmark of a formal validation of an acquired level of knowledge in comprehensive, general ophthalmology.

More recently and following the example of other European postgraduate medical subspecialty assessments [6,7], the EBO has introduced the project of FEBOS examinations in various sub-specialties in ophthalmology [8]. This aims to increase homogeneity in subspecialty standards of training, knowledge and practice across European countries. By introducing FEBOS examinations, the EBO aims to create clarity on the standards to be achieved; to ensure an acknowledgement of ophthalmological subspecialty training efforts; and to provide an official

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document recognizing expertise and competence. The FEBOS document will be a diploma given to ophthalmologists who have completed their subspecialty training and have passed the FEBOS examination.

The means by which the EBO intends to realize this project is by inviting European subspecialty societies to actively take the lead in organizing and chairing FEBOS examinations within their ophthalmological subspecialty. EBO will remain the “umbrella organization” with the responsibility of harmonizing assessment conditions and assessment structures of FEBOS examinations, taking into account the Glasgow Declaration of the UEMS Council for European Specialty Medical Assessments.

### Why can glaucoma be the first ophthalmological subspecialty examination topic

The EBO has invited the EGS as the first ophthalmological subspecialty society to take the lead in organizing and chairing the FEBOS-Glaucoma examination. EGS, founded in 1978, was chosen by the EBO because of its clear and extensive structure comprising 10 subcommittees and 9 special interest groups available from: <http://www.eugs.org/eng/>, featuring strong involvement in education.

### How to be Fellow of the European Board of Ophthalmology Subspecialty Diploma in Glaucoma

Participation at the FEBOS-Glaucoma examination will be on voluntary basis. Ophthalmologists who have acquired the FEBOS-Glaucoma diploma, awarded to candidates who have been successful at the FEBOS-Glaucoma examination, are encouraged to add the title of FEBOS-Glaucoma after their name.

The eligibility criteria and the detailed curriculum and prerequisites for the candidate as well as the training institution to be fulfilled in order to be able to sit the FEBOS-Glaucoma are described on the websites of EBO ([www.ebo-online.org](http://www.ebo-online.org)) and EGS ([www.eugs.org](http://www.eugs.org)). Below is a summary of the main requirements, which need to be fulfilled by the candidate and the training center, before applying for the FEBOS-Glaucoma examination:

- 1) The candidate needs to be a recognized specialist in ophthalmology with a minimum prerequisite of four years of comprehensive, general ophthalmology training.
- 2) The candidate should be in possession of a diploma or an equivalent evidence of having completed basic training in comprehensive, general ophthalmology. For the moment, the comprehensive EBOD examination is not a prerequisite.

- 3) The candidate needs to be citizen of a country within the European Union or a UEMS (associated) country.
- 4) EGS may recommend centers of excellence for the glaucoma subspecialty training, although these suggestions are only for guidance. Candidates may select an appropriate center of their choice within or outside Europe.
- 5) The candidate needs to have accomplished a minimum of one year of glaucoma subspecialty training in an institution with a training program that offers sufficient training exposure to glaucoma cases and their management.
- 6) The candidate has to present a letter of recommendation from the trainer(s) responsible for their subspecialty training, or the head of department, or other authority of the department. This letter will confirm that all requirements of the curriculum and the logbook have been fulfilled and that the candidate has had appropriate training making him/her eligible for the FEBOS-Glaucoma examination.
- 7) The trainer needs to possess appropriate educational qualifications, including certification in ophthalmology, acknowledged expertise in glaucoma with a minimum of 5 years devoted mainly to the care of glaucoma patients and (inter)national activities in teaching/research in the area of glaucoma.
- 8) The trainer must be individually responsible for the educational experience during the entire training period, with active supervision of the candidate during his/her training and agrees to document in writing on the appropriate form prepared by EBO the accomplishment of all requirements (theoretical, clinical, surgical, research, reading, behavioral, etc.) as well as the logbook for various procedures (laser and surgery). A periodical evaluation/progress report during the training is requested and needs to be documented.
- 9) Candidates who failed at the FEBOS-Glaucoma examination will be allowed to resit the FEBOS-Glaucoma examination, and there are no limitations on the number of attempts.

In addition to the prerequisites from residency training, the candidates must have an extensive and detailed theoretical, clinical and administrative knowledge in all fields of glaucoma as outlined in the curriculum that can be downloaded from the official websites of EBO and EGS. Appendix 1 summarizes the most relevant content of the glaucoma subspecialty curriculum, which will be updated on a regular basis according to new developments in the field of glaucoma.

The FEBOS-Glaucoma examination will take place annually at the same time as the comprehensive EBOD examination in Paris, France at the beginning of the month May. The FEBOS-Glaucoma examination will be a one-day examination com-

prising a written and an oral part of assessment. In the first editions of the FEBOS-Glaucoma examination, only the medical glaucoma module will be proposed to candidates. EBO and EGS consider the possibility to organize in future editions two separate modules: a medical glaucoma module (mandatory for all candidates) and a surgical glaucoma module (optional). The official language of the FEBOS-Glaucoma examination will be English. The medical glaucoma module consists of assessment through multiple-choice questions and an oral assessment.

Monitoring and validation of the FEBOS-Glaucoma examination will be implemented as measures of quality control following the principles of monitoring and validation of the comprehensive EBOD examination [5].

By aiming to increase the overall quality of ophthalmic care in Europe and provide clarity on specialist's standards, the EBO, in close collaboration with the EGS, is offering the opportunity for glaucoma specialists or ophthalmologists with particular interest in glaucoma to have their knowledge and expertise acknowledged. Successful candidates will be awarded a FEBOS-Glaucoma diploma, which is expected to become recognized as a proof of advanced knowledge and competence helping to raise the quality of glaucoma care in Europe.

## Value of Fellow of the European Board of Ophthalmology Subspecialty Diploma in Glaucoma

The glaucoma subspecialty training, as well as the FEBOS-Glaucoma examination and diploma would represent a logical continuation of the creation of sustainable education and glaucoma care within Europe. Such a diploma will not only recognize the specialist's level of knowledge and expertise but will also empower the trainees by setting up the level of training they should expect to be offered. In addition, the FEBOS-Glaucoma diploma should provide clarity and transparency to colleagues as well as to patients. It is hoped that it will be recognized as concrete evidence of advanced training and high caliber expertise.

The aim of the FEBOS-Glaucoma examination is to award ophthalmologists with formal recognition of their expertise by a diploma obtained after completing a well-structured glaucoma subspecialty training program and passing the FEBOS-Glaucoma examination. This is expected to become recognized as proof of structured and standardized postgraduate education aiming to promote the quality of glaucoma care in Europe. However, as neither the EGS nor the EBO can interfere with national legislation and health structures, the diploma cannot be regarded as a method to obtain a better work position but only demonstrates official proof of knowledge to

a recognized standard [8].

While the EGS takes responsibility in developing and improving the contents of training and examination, the EBO remains the "umbrella organization" with the task to facilitate the conditions and harmonize the structure of the subspecialty examination. The EBO will also be in charge of the logistics as well as the financial aspects of the organization of the FEBOS-Glaucoma examination.

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## Conflict of interest

No potential conflict of interest relevant to this article was reported.

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**Appendix 1.** Summary of the glaucoma subspecialty curriculum requirements in 6 categories, prerequisite to examination of Fellow of the European Board of Ophthalmology Subspecialty Diploma in Glaucoma

**1. Theoretical knowledge**

Epidemiology  
Pathophysiology  
Diagnostics  
Treatment (medical, surgical, laser procedures) and its complications  
Follow-up  
Classification of the glaucoma and pathological changes that occur  
Ocular hypertension  
Primary open angle suspect  
Primary open-angle glaucoma  
Primary juvenile glaucoma  
Primary congenital glaucoma  
Secondary open-angle glaucoma  
Primary angle closure  
Iris plateau configuration, syndrome and glaucoma  
Secondary angle closure/glaucoma  
Malignant glaucoma  
Developmental glaucoma with associated anomalies

**2. Clinical knowledge**

Extensive and detailed knowledge on all diagnostic procedures used in a specialized glaucoma clinic  
Extensive and detailed knowledge in medical treatment of glaucoma: all available classes: modalities and forms of administration, mechanism of action, indications, limitation, side effects, quality of life, cost containment, neuroprotection  
Potential new therapeutic treatments  
Theoretical and practical knowledge on indications and procedures of laser and surgical treatment of glaucoma including: laser procedures, cataract surgery, complex cataract surgery, trabeculectomy, use of antimetabolites and anti-vascular endothelial growth factor therapies, aqueous shunts (non-valved and valved), non-penetrating procedures, minimal invasive glaucoma surgery, combined procedures, cyclodestructive procedures  
Complications and failures of glaucoma surgery, management of complications  
Examination under anesthesia for congenital glaucoma, goniotomy/trabeculectomy for primary congenital glaucoma  
New and future devices/surgical methods

**3. Administrative knowledge**

Being able to organize, run and continuously improve successful and sustainable care service for glaucoma patients  
Being aware of cost effectiveness of glaucoma screening, diagnosis and therapy in European countries

**4. Clinical exposure**

Sufficient exposure to gain experience and be able to run independently a glaucoma clinic, either medical only or medical and surgical management

**5. Scientific activity**

Participation in local, regional, national or international professional and scientific meetings, eventually with active presentations at meetings and publications in peer-reviewed journals (participation in basic and/or clinical research during the glaucoma subspecialty training is regarded as an advantage although it is not a prerequisite for obtaining the Fellow of the European Board of Ophthalmology Subspecialty Diploma in Glaucoma).

**6. Teaching method**

The suggested literature is published on the website of the European Glaucoma Society and the European Board of Ophthalmology comprising follows: suggested literature/textbooks (regularly updated); articles from important randomized controlled clinical trials for glaucoma (regularly updated); critical evaluation of ophthalmic literature (evidence based ophthalmology); and systematic reviews of the previous 5 years including Cochrane reviews, health technology assessment, and evidence based guidelines.