

## **REVIEW**

from

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**Subject:** Competition for the academic position of "Associate Professor", in the field of higher education 7. Health and Sports, professional field 7.1. Medicine, specialty "Endocrinology" at the Medical University of Varna, Faculty of Medicine, Second Department of Internal Medicine/Department of Endocrinology and Clinic of Endocrinology and Metabolic Diseases at the University Hospital "St. Marina" - Varna, according to an announcement in the State Newspaper No. 30 of 08.04.2025.

### **I. INFORMATION ABOUT THE PROCEDURE**

Based on Order No. R-109-259/06.06.2025 of the Rector of MU - Varna and by decision of the Scientific Jury (Protocol No. 1/17.06.2025), I have been appointed to prepare a review regarding the competition for AD "Associate Professor" at MU - Varna and UMHAL "St. Marina" - Varna in the specialty "Endocrinology".

The competition was announced in the State Gazette, issue 30/08.04.25. It complies with the Act on the Development of the Academic Staff in the Republic of Bulgaria and the Regulations for its implementation at the Medical University - Varna.

Based on the above-mentioned legal documents, all procedural requirements for announcing the competition, the deadline for submitting documents and the selection of the Scientific Jury have been met.

Documents for applying to the competition were submitted by Dr. Savi Rinaldiev Shishkov, doctor. For the competition, the candidate has submitted all necessary documents in accordance with the requirements of the Academic Staff Development Act and the Regulations of the Medical University - Varna for its implementation.

### **II. BRIEF BIOGRAPHICAL DATA**

Dr. Savi Rinaldiev Shishkov obtained a Master's degree in Medicine at the Medical University of Varna in 2017 and a Master's degree in Health Management in 2021.

Since 2018, Dr. Shishkov has been an assistant professor at the Second Department of Internal Medicine, Academic Sector (AS) "Endocrinology", and in the same year he was also enrolled as a full-time doctoral student. In 2023, he defended his dissertation on the topic "Androgen levels in men with acute and chronic coronary syndrome" for the acquisition of the educational and scientific degree "Doctor".

The candidate's career path began in 2017, when he was enrolled as a resident in the Endocrinology and Metabolic Diseases Clinic. In 2021, he acquired the same specialty. During his work experience, he actively participated in clinical work, participated in multidisciplinary discussions and committees.

Dr. Savi Shishkov participates in various scientific forums (congresses, conferences and seminars), where he has presented a series of reports in the field of endocrinology.

From 2021 to the present, he has also completed a number of additional qualifications (highly specialized activity course (HSA) for cervical ultrasound, "Europit" course 2023). In 2021, he also participated in an international mobility program of the European Network for Rare Endocrine Diseases Endo-ERN with a specialization at Leiden University Medical Center, the Netherlands.

Dr. Savi Shishkov is a member of the Bulgarian Society of Endocrinology, the European Society of Endocrinology, and the European Neuroendocrine Association.

Dr. Shishkov is fluent in written and spoken English and German.

### **III. SCIENTIFIC ACTIVITY**

#### **Quantitative indicators**

The candidate participates in the competition with a total number of 19 scientific publications. Out of these, 3 are related to the dissertation work and 1 is above the minimum scientometric requirements.

#### ***Distribution of scientific papers by type:***

Habilitation thesis – 1 pc.

Dissertation – 1 piece.

Monographs, textbooks, aids - 2 pcs.

Publications in journals and collections – 19 issues.

***Distribution of scientific works by language of publication:***

Publications in Bulgarian – 13 issues.

Publications in a foreign language (English) – 10 pcs.

***Distribution of scientific works by authorship:***

As an independent author – 4 pcs.

Co-authored 19 pcs, including:

first author – in 11 publications

second author – in 1 publication

third author – in 6 publications

fourth author – in 1 publication

Dr. Shishkov also presents 1 full-text publication in a scientific journal, beyond the minimum scientometric requirements for holding the title of Associate Professor.

***Scientometric indicators:***

Publications in refereed journals: 8

Publications in non-refereed journals: 11

Articles with impact factor: 1

Citations: 13

Hirsch index: 3

Books: 1

Monographs: 1

Dissertation: 1

Textbook chapter: 1

**Qualitative indicators**

One of the main directions of the presented research work is related to the relationship between cardiovascular diseases and gonadal function in men, in terms of complementing the previously known constellation of symptoms as risk factors for the treatment and prevention of ischemic heart disease (IHD).

Another main aspect of the candidate's scientific activity is the "transition", i.e. the age transition between adolescence and adulthood of those affected by some rare endocrine diseases (hypopituitarism, congenital adrenal hyperplasia, Prader-Willi syndrome, etc.) in terms of therapeutic and organizational behavior.

Problems related to the influence of certain endocrine disorders on mental states, the influence of diabetes on fetal development, as well as morphological changes in diabetic retinopathy have also been studied.

*The psychosomatics* section complements the idea of a comprehensive approach to treatment in the context of endocrine diseases - a major problem in the presented scientific and scientific-practical work.

In the context of the research work, rare clinical cases are presented, which on the one hand illustrate the scientific work, and on the other hand have didactic and educational value.

#### **IV. SCIENTIFIC CONTRIBUTIONS**

According to the presented summary of the scientific contributions, they can be summarized in six thematic areas, as follows:

1. Androgens in cardiovascular diseases
2. Rare endocrine diseases and age transition
3. Diagnosis and treatment of thyroid diseases
4. Diabetes mellitus
5. Psychosomatics
6. Scientific activity with direct application in the educational process

The candidate's scientific contributions in the areas can be summarized as follows:

##### **In area 1: Androgens in cardiovascular diseases**

The research work focuses on gonadal function in men with atherosclerotic cardiovascular diseases. It is presented in a dissertation (A1), a "Book based on the defended dissertation" (G6) and seven scientific publications (G7.7, G7.8, G8.5, G8.7; of those presented for the ONS "Doctor" - G8.1–G8.3, 2 in refereed and 5 in non-refereed journals).

The relevance of the topic stems from the insufficient explanatory value of the classical risk factors for CHD, which necessitates the search for new pathogenetic mechanisms. Specifically, the scientific contributions are:

*Related to the dissertation work - scientific and practical contributions:*

1. For the first time, the relationship between DHEA-S and glomerular filtration rate has been studied in patients with acute coronary syndrome (ACS).
2. The cortisol/DHEA-S ratio in ACS was analyzed.
3. Differences in the total testosterone/LH ratio have been described in patients with and without diabetes.
4. Additional risk characteristics for acute coronary syndrome (ACS) have been verified.

*Confirmatory contributions:*

1. The association between DHEA-S, coronary disease and diabetes has been confirmed.
2. The dynamics of total testosterone after the onset of ACS has been confirmed.
3. A higher frequency of hypotestosteronemia was found in ACS compared to controls.

The "Book" (G6) provides additional analysis and discussion on gonadal function and cardiovascular disease, including the benefits and risks of testosterone replacement therapy in cardiac patients.

Publications G7.7 and G8.3 review the incidence of hypogonadism and the testosterone/estradiol ratio in ACS, an area with scarce and conflicting data. G8.7 identifies free testosterone as a marker associated with cardiovascular risk (GRACE) and myocardial necrosis (troponin). Publications G8.1 and G8.2, presented for the ONS "Doctor", analyze the role of DHEA-S in the context of coronary pathology and the biological effects of its metabolites.

Publication D8.1 reviews hypogonadism in the context of CHD and discusses the effects of testosterone replacement therapy. D7.8 summarizes the mechanisms and treatment of gonadal and sexual dysfunction in chronic kidney disease based on a literature review.

**In area 2: "Rare endocrine diseases and age transition"**

The direction includes a monograph (B3), four refereed publications (G7.2, G7.3, G7.4, G7.5), two non-refereed publications (G8.1, G8.3 and No. 1 beyond the minimum scientometric requirements), as well as reports at national conferences.

The monograph introduces for the first time in Bulgarian literature the concept of "organized transition" - a systematic process of transferring patients from pediatric to adult endocrine care. An overview of international experience and scales for assessing readiness for transition in patients with chronic endocrine conditions are presented. In addition, algorithms for complex medical and psychosocial transition are proposed, along with practical recommendations.

Publications in the field address key aspects of transition in rare endocrine diseases. An international survey (G7.2, G7.4) among 30 expert centers outlines the difficulties in structuring the transition, especially in pituitary diseases. A proprietary questionnaire for assessing readiness for transition has been developed and validated (G8.3). In G7.5, a five-year clinical experience is summarized, assessing the effectiveness of follow-up in adolescence. Publication G7.3 confirms the benefits of early growth hormone treatment in Prader-Willi syndrome. A rare clinical case of "extinguished" acromegaly (No. 1 beyond the minimum requirements) is also described, illustrating diagnostic and therapeutic challenges.

### **In area 3: Thyroid pathology**

Reports in focus 3 (G7.6, G8.6) review clinical cases related to diagnostic challenges in thyroid pathology. The role of TSI and TRAb in the diagnosis and follow-up of Graves' disease is discussed, including cases of switching between different antibody types, which complicates treatment. A rare case of intrathyroidal B-cell lymphoma (G7.7) is also presented, emphasizing the need for careful differential diagnosis and long-term follow-up. In general, the contributions of studies in this focus are: contribution to the differential diagnosis of thyroid lesions; presentation of a complex therapeutic strategy in autoimmune diseases.

### **In area 4: Diabetes mellitus**

Publications in this area (D7.1, D8.2) consider the complications of diabetes mellitus - diabetic retinopathy and the effects on the fetus in maternal diabetes. Characteristic histomorphological changes in the retina are presented, which can help in the postmortem diagnosis of diabetes, as well as histological data in diabetic fetopathy, indicating the need for expanded diagnostic criteria. The cases illustrate a personalized approach to diagnosis and education in the field of diabetes, with a contribution to practice and teaching.

In general, the contributions of research in this area are of a practical nature: improved methodology for diagnosing diabetic retinopathy and the introduction of a personalized approach for monitoring the diagnosis of diabetic fetopathies.

### **In direction 5: Psychosomatics**

A chapter (G9.1) of the study guide is presented in area 4 – psychosomatics. Psychiatric manifestations, most often of a depressive nature, in some endocrine diseases are studied. In this way, guidelines are given for building a comprehensive view and, accordingly, a therapeutic approach in patients with these diseases.

### **In area 6: Scientific activity with direct application in the educational process**

The problems discussed in the previous directions are closely related to the educational activities of students, residents and doctors of various specialties. In the study guide (G9.1), a systematic literature analysis is made, including both classic and rare manifestations of somatic diseases in order to prevent diagnostic errors. Clinical cases from publications (G7.1, G7.6, G8.2, G8.6) are usable for educational purposes, highlighting significant diagnostic

challenges. Publication G8.4 presents a methodology for optical correction in endoscopy, with potential for application in various medical fields.

The main contributions are: Integration of scientific data into lectures and seminars; Developed a model for endoscopic optical correction; Creation of training materials for residents in endocrinology, cardiology and internal medicine.

## **V. TEACHING AND EDUCATIONAL ACTIVITIES**

The total teaching experience of Dr. Savi Shishkov is 7 years and 1 month, of which 5 years and 4 months as an assistant and 1 year and 8 months as a chief assistant professor.

The candidate's academic activity includes a full course of exercises in endocrinology for the specialty of medicine, Bulgarian-language and English-language training, as well as a partial lecture course for students of English-language training, specialty of medicine on topics related to diabetes mellitus. The academic workload includes lectures and exercises for the specialties of "Midwifery" and "Medical Cosmetics".

Dr. Shishkov takes part in semester and state exams for students of Bulgarian and English-language studies, as well as in the compilation of test questions for semester and state exams in internal medicine for the specialty of medicine.

Dr. Savi Shishkov is actively involved in the postgraduate training of endocrinology residents, leading training seminars within the framework of basic theoretical courses. He develops and creates training materials, including presentations, video lessons and clinical training cases, intended for residents in endocrinology and internal medicine. He participates in the filming of training videos supporting the practical training of students and residents. The candidate is a co-author of a manual on psychiatry for medical students, as well as several scientific publications with direct application in teaching practice. These scientific publications contribute directly to the integration of a multidisciplinary approach in training. His educational activities are closely related to scientific ones, with the emphasis on the application of innovative and interdisciplinary approaches in order to modernize and increase the effectiveness of medical education.

The candidate presents the following study load: for the academic year 2019/20 – 336 hours of exercises; for 2020/21 – 206 hours of studies; for 2021/22 – 171 hours of studies, for 2022/23 – 203 hours of studies, 5 of which are lectures; for 2023/24 – 231 hours of studies, 11 of which are within the lecture course.

The candidate's annual academic workload meets and exceeds the standard for teaching employment adopted at the University.

## **VI. PARTICIPATION IN PROJECTS**

For the period from 2018 to 2025, the candidate has also participated in two projects under the Science Fund: Project number 19017, funded by the Science Fund on the topic: "Dynamics in serum levels of male sex steroids in men after acute coronary syndrome" with scientific supervisor Assoc. Prof. Dr. A. Angelov, MD. The described project has ended with the defense of a dissertation. Currently, Dr. Shishkov is a participant in another project within the framework of the 2019 competition session on the topic: "Bone health and fracture risk in men depending on androgen status", with supervisor Assoc. Prof. Dr. M. Siderova, MD.

## **VII. CLINICAL ACTIVITY**

Dr. Shishkov is a well-established endocrinologist, possessing the necessary skills to apply all basic and modern highly specialized treatment and diagnostic methods and techniques. He gained his clinical experience at the University Hospital "St. Marina" Varna and improved it during his specialization in Leiden. His practical skills are also related to his joint work with the pediatric endocrinology group at the First Children's Clinic as the main representative of the Endocrinology Clinic in the multidisciplinary team for organizing the transition. This is the prerequisite for his scientific activity, related to the very current scientific and scientific-practical topic of the transition of patients from pediatric care to care in an adult clinic.

During his short clinical experience, the candidate has not only covered all possible clinical levels over time, but also possesses a wealth of additional qualifications acquired through specializations and courses in established international and national centers. Among them, a specialization at the University Medical Center in Leiden, the Netherlands, with a focus on growth hormone treatment and the transition of patients from pediatric to adult medical care stands out - an area of increasing importance in modern endocrinology. In 2023, he completed a course in neck ultrasound (VSD "Neck Ultrasound") and the international training course "Europit", dedicated to pituitary pathology. Certificates of participation in online training and webinars, visits to conferences and practical seminars are also attached, demonstrating a sustained commitment to continuing education.

All these activities highlight the candidate's in-depth clinical expertise and his ability to work effectively in an interdisciplinary environment with high responsibility for patients with complex therapeutic needs. Thanks to the completion of numerous specialized qualification courses and specializations, he has managed to improve and develop at a high level his diagnostic, consultative and therapeutic skills in this field. He shows a taste for innovations in therapeutic care and is open to medical scientific and clinical progress in a global aspect, which guarantee him future success beyond the boundaries of MU-Varna.

My only critical remark is Dr. Shishkov's insufficient publication activity at the moment, which will certainly change in the near future.

## **VIII. CONCLUSION**



According to the materials submitted by the candidate Dr. Savi Rinaldiev Shishkov, PhD, I believe that they meet the minimum national requirements specified in the Regulations for the Implementation of the Law on the Development of the Academic Staff in the Republic of Bulgaria and the Regulations of the Medical University - Varna.

The relevance and significance of the presented scientific works, his clinical and teaching experience are grounds for me to give a positive assessment for the appointment of Dr. Savi Shishkov to the academic position of "Associate Professor" in the scientific specialty "Endocrinology", professional field 7.1 Medicine, in the field of higher education 7. Health and Sports at the Faculty of Medicine, for the needs of the Second Department of Internal Medicine, Medical University "Prof. Dr. Paraskev Stoyanov" - Varna.

My suggestion to the esteemed members of the Scientific Jury to vote positively for Dr. Savi Rinaldiev Shishkov, doctor, to occupy the academic position of "Associate Professor" in the current competition.

05.08.2025

Signature: .....

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/Prof. Dr. V. Iotova/