

REVIEW

by

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Regarding: Competition for the academic position of Associate Professor in the Orthopedics and Traumatology specialty, Professional Field 7.1 Medicine, Higher Education Area 7. Healthcare and Sports, for the Department of Orthopedics and Traumatology, Faculty of Medicine, Medical University "Prof. Dr. Paraskev Stoyanov" – Varna, as announced in the State Gazette, issue 102, dated Nov 28, 2025, with candidate Dr. Preslav Plamenov Penev, MD, PhD.

By Order of the Rector of MU–Varna № 109-67/28.01.2026 and by decision of the Faculty Council (Protocol № 102/2026), I have been included in the Scientific Jury, and by decision of the Scientific Jury (Protocol № 1), I have been appointed to prepare a review regarding the procedure for the academic position of Associate Professor. Dr. Preslav Plamenov Penev is the sole candidate who has submitted documents for this competition, and he has presented all necessary documentation in compliance with the Act on Development of the Academic Staff and the Regulations of MU–Varna.

Biographical and Professional Information

Dr. Preslav Plamenov Penev was born in 1985 and graduated in Medicine from MU–Varna in 2010. He obtained his specialty in Orthopedics and Traumatology in 2018, and in 2016, he was awarded the educational and scientific degree of Doctor (PhD) after defending a dissertation titled *Modern Aspects of Diagnosis and Treatment of Ligamentous Injuries of the Lateral Column of the Ankle Joint*. He also earned a Master's degree in Healthcare Management in 2017.

His professional career includes serving as an Assistant Professor (since 2017) and Chief Assistant Professor (since 2019) at MU–Varna. Clinically, he worked at the St. Anna Hospital in Varna (2011–2022) and has been at St. Marina University Hospital, Varna, since April 2022. Dr. Penev holds high-specialization certificates in Arthroplasty, Arthroscopy, and Pediatric Hip Ultrasonography. He is a member of several professional organizations,

including BOTA, BAAST, EFFORT, AO, and ESSKA, and serves on the editorial board of BMS Surgery. He is proficient in English and has served as a Principal Investigator for 2 national projects and was a participant in 2 international research projects.

Dr. Penev has over 8 years of teaching experience, lecturing in *Orthopedics and Traumatology* for both Bulgarian- and English-language medical programs. His average annual teaching load over the last 5 years is 232.8 hours, exceeding the university's required standards.

The submitted works for participation in the competition, totaling 20 items, reflect the candidate's research and development activities. The quantitative indicators are presented in the following table:

Analysis of All Scientific Works

Scientific Works	Number
Dissertation Abstract	1
Monograph	1
Book based on a defended doctoral dissertation	1
Publications in peer-reviewed journals and those with Impact Factor (IF)	8
Articles published in peer-reviewed journals and scientific collections	9
Scientific communications at international scientific forums	32
Scientific communications at national scientific forums with published abstracts	63
Total Number	115

Distribution of Scientific Works by Type:

- **Habilitation Thesis:** 1 item.
- **Dissertation:** 1 item.
- **Publications in journals and collections:** 18 items.

Distribution of Scientific Works by Language of Publication:

- **Publications in Bulgarian:** 4 items.
- **Publications in a foreign language (English):** 16 items.

Distribution of Scientific Works by Authorship:

- **As a sole author:** 2 items.
- **In co-authorship:** 18 items, categorized as follows:
 - **First author:** 10 publications.
 - **Second author:** 7 publications.
 - **Author in another position:** 1 publication.

Distribution of Works by Scientific Field:

All scientific activities of Dr. Preslav Penev, MD, PhD, are within the scientific field of Healthcare and Sports. The primary fields of the candidate's research work are focused on the pathology of the ankle joint and the foot, pediatric orthopedics, injection therapy in orthopedics and traumatology, prevention of infections in external fixation, and others.

His interests regarding the pathology affecting the ankle and the foot are extensive and encompass:

- **Anterolateral ankle instability:** His research covers acute, chronic, and functional ankle instability. The diagnostic methodologies addressed include stress radiography and ultrasonography. The therapeutic algorithms integrate conservative therapy, functional management, and surgical intervention, featuring primary ligamentous repair for acute injuries and ligamentous reconstruction for chronic cases. In this field, there is a further expansion of research interests toward chondral defects of the talus, which typically occur following supination-inversion traumas.
- **Longitudinal rupture of the peroneal tendons:** This pathology is closely associated with ankle instability, demonstrating a profound and comprehensive interest in the subject of soft-tissue ankle injuries. Dr. Preslav Penev examines diagnostic and therapeutic approaches and provides a well-defined professional opinion on the management of this rare, yet frequently occult, pathology.
- **Lisfranc injuries:** Research interests are primarily focused on the diagnostic challenges associated with ligamentous Lisfranc injuries. The mechanisms of injury are examined in depth, alongside investigations into the anatomical structures of the ligamentous apparatus. Weightbearing computed tomography is introduced as an optimal diagnostic technique.
- **Intramedullary fixation of ankle fractures:** The modern minimally invasive approach for treating fractures of the lateral malleolus addresses the increasing clinical demand for rapid recovery and a return to normal pre-traumatic daily activities.
- **Osteochondral defects and fractures of the talus:** The emphasis in this thematic area is on autologous chondrocyte implantation (minced cartilage), which represents one of the most advanced surgical methods for treating chondral defects in regions such as the ankle and knee joints. Regarding talar loss in high-energy traumas, the candidate's interests are focused on total talar substitution.
- **Gravity stress radiography for the differentiation of supination-external rotation (SER) ankle fractures:** The research is based on the Lauge-Hansen classification, where SER II fractures are indicated for conservative therapy, while SER IV requires operative intervention. Due to the limitations of standard radiography in distinguishing between these types, the candidate examines the efficacy of gravity stress radiography and implements it into clinical practice as a rapid and reliable method for differentiating various subtypes of SER ankle fractures.

In the field of pediatric orthopedics, his research interests are once again directed toward the foot and ankle region, specifically focusing on congenital talipes equinovarus (clubfoot):

- The candidate emphasizes conservative management using the Ponseti method. Concurrently, he does not dismiss the Kite method, asserting that proficiency in it is

essential to avoid errors and regressive approaches in the treatment of this pathology. Significant emphasis is placed on the pivotal role of both the pediatrician and the parents in the therapeutic process.

Injection therapy in orthopedics and traumatology: Dr. Preslav Penev, MD, PhD, attributes significant importance to injection therapy within the conservative management of various nosological entities. He provides an in-depth analysis of injection techniques, prioritizing ultrasound-guided procedures to enhance localization precision and minimize iatrogenic risks.

The category Others includes:

- **Prevention of infections in external fixation:** Research and interests in this area are focused on utilizing different pin coatings to prevent bacterial colonization and biofilm formation. The reduction and prevention of infection are critical components when employing external fixation, as the development of pin-track inflammation often leads to catastrophic consequences for the therapeutic process.
- **Technical selection for carpal tunnel syndrome:** A prerequisite for achieving optimal outcomes is not only the execution of the surgical technique itself but also the individualized selection of the surgical approach. Emphasis is placed on arthroscopic and minimally invasive techniques for milder cases, while traditional open transverse section and decompression remain valid options.
- **Radial Shockwave Therapy:** The modern management of one of the most common soft-tissue pathologies affecting the upper limb through radial shockwave therapy represents another significant field of interest for the candidate.

Primary Research Fields:

The main focus of the candidate's research and development activities is directed toward the pathology of trauma and musculoskeletal diseases, with a specific emphasis on:

- Ankle and Foot
- Pediatric Orthopedics
- Injection Therapy in Orthopedics and Traumatology
- Other areas

Distribution of Research Topics

No.	Research Topic	Number of Works
1.	Ankle and Foot	11
2.	Pediatric Orthopedics	5
3.	Injection Therapy in Orthopedics and Traumatology	1
4.	Others	3

Contributions Related to the Primary Research Fields:

FIELD 1:

A1. Dissertation Abstract for the conferral of the educational and scientific degree of Doctor (PhD): *Modern Aspects of Diagnosis and Treatment of Ligamentous Injuries of the Lateral Column of the Ankle Joint*. The significance of acute and subsequently chronic ankle instability for the development of chondral talar pathology and subsequent ankle osteoarthritis is defined. Various diagnostic techniques are examined, introducing stress radiography and emphasizing sonographic diagnostics. Functional instability, its diagnosis, and its treatment are popularized. A comparative analysis was performed on patients with acute anterolateral ankle instability treated conservatively versus those treated via primary ligamentous repair; the results demonstrate a preference for the surgical group regarding the restoration of ankle stability, pain reduction, lower incidence of recurrent sprains, and faster professional and athletic reintegration.

B3. Monograph: *Injection Techniques in Orthopedics and Traumatology*, ISBN 978-619-221-575-0, MU–Varna, 2025.

G6. Published Book Based on a Defended Doctoral Dissertation: *Lateral Ankle Instability*, ISBN 978-619-241-086-5, STENO Publishing House, Varna, 2020.

Dr. Preslav Penev, MD, PhD, served as the **Principal Investigator** for the project *Development of a Diagnostic and Therapeutic Algorithm for Patients with Acute Anterolateral Ankle Instability*, funded by the National Science Fund, Ministry of Education and Science. Based on this project, an algorithm for the diagnosis and treatment of acute anterolateral ankle instability was developed and implemented. Conservative treatment of functional instability using a specialized kinesitherapeutic shoe was also introduced.

FIELD 2: (G7.2, G8.1, G8.2, G8.5, G8.8, G8.15; full-text publication beyond minimum requirements №1)

Scientific Category: *Modern Diagnostic Algorithms and Innovative Surgical Methods in Trauma and Instability of the Ankle and Foot*

Main Contributions:

- **Optimization of diagnostics in Lisfranc injuries:** Through the utilization of weightbearing computed tomography (WBCT), the research objectifies ligamentous injuries that frequently remain occult on standard radiography. This allows for superior precision in surgical planning for complex ligamentous damage.
- **Biomechanical substantiation of minimally invasive fixation:** The advantages of minimally invasive fixation in unstable ankle (fibular) fractures have been demonstrated through cadaveric studies. The research establishes that interlocking intramedullary fixation provides stability comparable or superior to conventional plate fixation, while significantly reducing soft-tissue trauma.
- **Diagnostic algorithms in ankle instability:** A comparative analysis of various imaging modalities (Gravity stress X-ray, stress radiography) was developed, enhancing the accuracy of classifying supination fractures and lateral instability. This leads to more precise selection criteria between conservative and operative management.
- **Innovations in talar regenerative surgery:** A significant contribution is presented in the treatment of osteochondral lesions of the talus by combining autologous minced cartilage grafting with a retinaculum flap technique. This method improves functional recovery in patients with chronic instability.
- **Clinical diagnosis of rare injuries:** Rare complications following ankle sprains, such as longitudinal ruptures of the peroneal tendons, are described, thereby increasing clinical vigilance for atypical symptoms.
- **Comparative analysis of therapeutic outcomes:** The research provides a critical comparative analysis between operative and conservative treatment for acute instability, establishing specific indications for each approach.

FIELD 3: (G8.3, G8.4, G8.6, G8.7, G8.9, G8.10, G8.11, G8.12, G8.13, G8.14, G8.16; publications for the position of Chief Assistant Professor №1)

Scientific Category: *Comprehensive Algorithm for Diagnosis, Conservative, and Minimally Invasive Surgical Treatment of Congenital Talipes Equinovarus (Clubfoot)*. The synthesis encompasses research published in the International Journal of Science and Research (IJSR) during the period 2015–2017.

Main Contributions:

- **Systematization and objectification of the conservative protocol:** Through a detailed study of the biomechanical fulcrum (the head of the talus), the research contributes to the refinement of manual corrections using the Ponseti method. Clear clinical indicators for transitioning between serial casting stages have been introduced, minimizing the risk of iatrogenic deformities and subjectivity in treatment.
- **Validation of clinical efficacy in Bulgarian medical practice:** It has been demonstrated that early initiation of treatment and strict adherence to the Achilles tenotomy protocol led to excellent functional outcomes, sparing patients from extensive reconstructive surgeries in early childhood.
- **Introduction of a minimally invasive approach for recurrences:** An algorithm has been developed to address dynamic supination through the transfer of the *m. tibialis* anterior tendon. This contribution offers a tissue-sparing surgical solution

for correcting muscle imbalance, which is key to long-term foot stabilization and the prevention of secondary osseous changes.

- **Prognostic factors and prevention:** The critical role of parental compliance and education has been identified as a leading factor for success. The research emphasizes the significance of abduction braces as the primary tool for preventing recurrences.
- **Differential approach in idiopathic forms:** A framework has been established for differentiating typical from rigid forms of the deformity, allowing the clinician to devise an individualized therapeutic plan with greater precision.

FIELD 4: (G7.4)

Scientific Category: *Prevention of Pin-Track Infections.* This research is the result of Scientific Project № 21023 titled: *Reducing the Incidence of Pin-Track Infections in External Fixation through the Use of Pins with Different Structures and Antibiotic Release/Coatings*, with Dr. Preslav Plamenov Penev, MD, PhD, serving as the Principal Investigator.

Main Contributions:

- **Establishment of an innovative concept:** The objective of the project is to determine the impact of antibiotic-releasing/coated pins on the frequency of pin-track infections, specifically targeting the reduction and elimination of bacterial growth during external fixation.
- **Clinical and practical implementation:** The research facilitates the introduction and implementation of specialized pins into medical practice to mitigate the risk of infection development.
- **Therapeutic benefits:** The outcomes of this project and the corresponding publication contribute to a significant reduction in infection risk across various clinical applications of external fixation, including fracture management, deformity corrections, and bone transport.
- **Development of evidence-based recommendations:** A scientifically substantiated framework was established for the project's realization, leading to formal recommendations for the use of antibiotic-releasing/coated pins in external fixation. This optimization enhances the medical, social, and economic outcomes for a wide range of nosological entities.

FIELD 5: (G7.1, G7.3, G8.17; publications for the position of Chief Assistant Professor №2)

Scientific Category: *Intramedullary Fibular Fixation in Ankle Fractures.* This research is the result of collaborative work by an interdisciplinary international team and constitutes a core component of the doctoral program.

Main Contributions:

- **Innovation and implementation:** The first intramedullary fibular nail placed by the candidate was initially met with considerable skepticism by the orthopedic community, despite achieving excellent clinical outcomes. This served as a catalyst for forming an interdisciplinary international team to conduct a comparative analysis.
- **Comparative clinical advantage:** The study compared the results of minimally invasively placed fibular nails versus conventional semitubular plates applied via the standard open method. The findings demonstrate a significant advantage in terms of the recovery period, reduction of infection risk, and overall improvement in the quality of life for patients operated on with the new minimally invasive technique.
- **Scientific and academic impact:** The scientific contribution lies in the optimization of surgical management for ankle fractures, which also forms the basis for the candidate's forthcoming doctoral dissertation defense on this subject.

Conclusion

In conclusion, based on the fulfillment of the minimum national requirements stipulated in the Regulations for the Implementation of the Act on Development of the Academic Staff in the Republic of Bulgaria and the Regulations of the Medical University of Varna, the established contributions of the candidate's scientific research, along with his pedagogical and clinical experience, provide a solid foundation for my positive vote. I recommend that the honorable members of the Scientific Jury vote **positively** and propose to the Rector of MU–Varna that **Dr. Preslav Plamenov Penev, MD, PhD**, be appointed to the academic position of **Associate Professor** in the scientific specialty of Orthopedics and Traumatology (Professional Field 7.1 Medicine, Higher Education Area 7. Healthcare and Sports) for the needs of the Department of Orthopedics and Traumatology, Faculty of Medicine, Medical University "Prof. Dr. Paraskev Stoyanov" – Varna.

12.02.2026

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Заличено на основание чл. 5,
§1, б. „В“ от Регламент (ЕС)
2016/679

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