

To
the Chair of the Scientific Jury,
appointed by Order No. RD26-2023/18.10.2023 of
the Head of UMHATEM "N.I. Pirogov" Ltd

REVIEW

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MEMBER OF THE SCIENTIFIC JURY, by Order No. RD26-2023/18.10.2023, according to Article 60, paragraph 2 of the Regulations on the Conditions and Procedure for the Acquisition of Scientific Degrees and the Holding of Academic Positions at UMHATEM "N.I. Pirogov" Ltd., with decision for a Jury of the Departmental Council - Protocol No.01-3/04.10.2023, **concerning: Competition for the academic position of "Associate Professor" - one position** in the field of higher education 7 - "Health and Sport" in the professional field 7.1 - "Medicine" and the scientific speciality "Pediatrics", announced in the State Gazette newspaper issue No. 46/26.05.2023.

All the documents were submitted according to the requirements of the Regulations, with the necessary supporting material.

Dr Snezhina Mihaylova Lazova, MD, is the only participant in the competition.

Biographical data and professional development

Dr. Snezhina Lazova graduated from the "Hristo Botev" high school in the city of Dupnitsa in 2008. She earned her master's degree in medicine in 2008 Medical University Sofia with excellent marks (Diploma No. 17596/05.12.2008) . She worked as a resident paediatrics at the Pediatric Clinic "Tokuda Hospital Sofia" AD until May 2011. Subsequently, she was a resident, PhD- student and part-time teacher at the Clinic of Pediatrics, UMHAT "Alexandrovskia" Ltd. Since 2014, she has a 2008 has had a diploma of speciality of Pediatrics (Certificate No. 17881/03.03.2014). In 2017, she started her residency in pediatric pulmology, which was successfully completed in 2021 (Certificate No. 24258/15.02.2021). In the meantime, Dr. Lazova also obtained a master degree in public health and management (Diploma No. 30749/02.06.2017) and a master degree in clinical trial management (Diploma No. 36034/29.03.2020).

Since October 2018, Dr. Lazova has been part of the team of the Department of Pediatrics of UMHATEM "N.I. Pirogov" Ltd, at the same time she also carries out consulting activities in several clinical centers - Medical Center "Cardiohelp" Sofia (April 2017 - December 2018); Medical Center - Pirogov, Sofia (January 2018 – December 2021); "INSPIRO" Medical Center (since 2019); Private medical facility for ambulatory care "Neoklinik" (from 2023).

From 2010 to 2016, she was a full-time, and later a part-time PhD student at

the Sofia University at Pediatric Clinic, UMHAT "Alexandrovska" Ltd. In May 2017, she defended her doctorate on the topic "Clinical significance of the pulmonary functional testing and atopic status in children with asthma" and acquired the scientific and educational degree "Doctor" - 537-D/24.07.2017.

After winning a competition in September 2020, she was appointed as chief assistant at the Department of Health Care, Faculty of Public Health, Sofia Medical University and is actively engaged in clinical, scientific and teaching work. A year before that, she was a part-time teacher.

Dr. Lazova has gone through numerous international qualification courses in Greece, Germany and Austria. As well as highly specialized courses in the field of pediatric pulmonology organized by ERS.

Dr. Lazova has the necessary computer literacy. She knows English, German and Greek in writing and speaking - at an excellent level.

Dr. Snezhina Lazova is a member of the Bulgarian Pediatric Association, Bulgarian Association of Pediatric Pneumology and Phthisiatry, Bulgarian Society of Pulmonary Diseases, European Respiratory Society (ERS) and European Academy of Allergology and Clinical Immunology (EAACI).

Dr. Snezhina Lazova is distinguished by a marked affinity to functional diagnostics in pediatric pulmonology, to acute infections and immunological phenomena. She demonstrates ability to make independent, timely decisions. She has mastered all diagnostic and therapeutic manipulations in pediatrics

Scientific research

Publications

For the current competition, Dr. Lazova presents 4 chapters of a book (collective monographs) and 54 full-text scientific articles, all of which were realized after obtaining the educational and scientific degree "doctor", 7 of them are in journals with an impact factor (Thomson Reuters), 14 are in journals that are referenced and indexed in world-renowned databases with scientific information, 35 are in Bulgarian peer-reviewed journals and 5 publications in other publications. First or last author is in 57.41% of all publications after acquisition of the scientific degree " doctor", and in 71.42% of the publications with an impact factor. Her total impact factor of the full-text publications is 19.94.

Participation in Scientific forums

Dr Lazova has 78 participations in scientific forums – most at international meetings, including she was a moderator in an ERS Congress session. She has three awarded posters at international congresses, all after acquiring the scientific degree "doctor".

Citations/cited by

Dr. Snezhina Lazova's publications have a total of 58 citations - 25 citations in foreign databases (SCOPUS, Web of Science) and 10 other foreign journals, which is proof of their high scientific value. Her works have also 22 citations in Bulgarian sources and one citation in a chapter from a monograph

Scientific projects

Dr. Lazova is the leading scientist in a project of her PhD studies from the "YOUNG RESEARCHER" competition of the Sofia University for financing scientific projects ("Determining the atopic status of children with asthma and measuring the temperature of the exhaled air to monitor the inflammation of the respiratory tract and the level of control." (Evaluated with an excellent/high/high grade).

She is a participant in seven national scientific projects from the "GRANT" competition over the years:

- "Genotype-phenotype association of bronchial asthma in childhood." (highly evaluated report)

- "Th17 lymphocyte subpopulation and vitamin D in childhood asthma" (evaluated with good grade)

- "Study of serum antibodies against *Pseudomonas aeruginosa* in patients with cystic fibrosis and comparison of the results of a standard microbiological examination of respiratory tract secretions" (evaluated with high grade)

- "Study of lung function in children with scoliosis" (evaluated with high grade)

- "The dynamic picture of respiratory pneumococcal infections in children after the introduction of routine pneumococcal vaccination in Bulgaria" (evaluated with high grade)

- "Nasopharyngeal microbiome in children with scoliosis" (evaluated with high grade)

- "Respiration research in working-age women (18-64 years) from the health care field" (evaluated with high grade)

She is also a participant in two projects at the Scientific Unit of UMHATEM "N.I. Pirogov" Ltd - "Study of the health risks of taking energy drinks in children and adolescents" and "Study of the clinical and laboratory characteristics of children with Multisystem Inflammatory Syndrome (MIS) -C)".

Dr. Lazova also participated in an international project - Improving Training for Nursing Clinical Pathways (AGILITY) under the project "ERASMUS+KA2010 "Improving the training of nurses on clinical pathways" with participants Sofia Medical University and Kapodistrian University of Athens

Group of articles presented as habilitation thesis

Dr. Snezhina Lazova has presented 10 articles and 2 chapters in a book, as well as 3 abstracts from participation in international congresses published in journals with an impact factor. The total score of the 12 full-text publications is 385.8 points and exceeds the required minimum of 100.

Publications can be grouped into two areas - chronic lung diseases and respiratory infections in children, especially COVID19.

The two book chapters are the result of a completed scientific project related to the immunological characteristics of children with bronchial asthma and cystic fibrosis. One of the presented articles is the result of Dr. Lazova's in-depth knowledge in the field of functional diagnosis of bronchial asthma in childhood - the subject of her PhD. The issue of the influence of therapy with inhaled corticosteroids, as well as the differential diagnosis of bronchial asthma, is also discussed in great details in two other publications.

The accumulated valuable practical and research experience of Dr. Lazova during her active work in the treatment of children with Covid-19 infection, including intensive care, has been shared on scientific forums and summarized in 4 publications in refereed scientific journals, covering many aspects of the disease, and not only its purely pulmonological part (relative to the narrow speciality profile of the candidate).

The last of the articles presented in this group emphasizes the importance of a rarely discussed in the medical literature, but clinically significant Boca-virus and respiratory infections in children.

Evaluation of the scientific works of Dr Lazova for her overall academic development:

Outside of the presented articles instead of habilitation work, Dr. Lazova has made an academic contribution with her doctoral studies, in the framework of which a complex evaluation of the clinical significance of the obstruction of the small airways, defined by the baseline value and the bronchodilator reversibility (BDR) of the mean flow rates (MMEF25-75), was carried out. and the indicator FEF25-75/FVC, reflecting the form of debit volume curve and their diagnostic value for predicting a positive BDR ($\Delta FEV1 \geq 12\%$), and for the first time in Bulgaria the GLI 2012 reference equation was applied to the spirometric results of Bulgarian children with asthma at ages 5 to 18 years and compared the interpretation of pulmonary function tests (PFT) using a fixed cut-off and the low limit of norm and z-score methods.

Dr. Lazova's other publications can be divided into several areas:

- *Bronchial asthma in childhood*
- *PFT*
- *Immunological aspects of childhood asthma and chronic lung diseases*
- *Virology and molecular diagnostics of respiratory infections*
- *Microbiological aspects of cystic fibrosis and chronic lung diseases*
- *Childhood coronavirus infection*
- *Multisystem inflammatory syndrome in children*
- *Vaccine prophylaxis in childhood and dynamics of pneumococcal diseases in childhood*
- *Protracted bacterial bronchitis and chronic wet cough in childhood*
- *Clinical aspects of pediatrics and pediatric pulmonology*

A significant part of Dr. Lazova's scientific works and publications are focused on bronchial asthma in all age periods of childhood.

The candidate has analyzed in detail the correlations between sensitization to inhalant and food allergens and the response to treatment, the achievement of clinical control, the evolution and prognosis of the disease. The presence of allergic sensitization is also used as a factor defining separate clusters in the studied population of Bulgarian children with asthma. The immunological mechanisms of bronchial asthma are discussed in detail, in particular the importance and involvement in the pathogenesis of Th17 lymphocytes and the interleukins they produce and the influence of vitamin D status on severity. In an epidemiological aspect, the influence of pre- and perinatal pathology on the subsequent development and severity of childhood asthma is

considered, as well as the evolution of symptoms in childhood and the definition of individual phenotypes of childhood asthma.

A large part of the publication activity is dedicated to the different methods for PFT in preschool and school-age children and their correct application such as indications, technique and quality of performance, selection of reference values, safety and correct interpretation of results. Particular attention is paid to the algorithm of interpretation of spirometry in cases with normal baseline FEV1, analysis of the shape of the flow-volume curve, indicators of peripheral obstruction, and the application and interpretation of bronchial reversibility tests (BDT).

In addition to classical spirometry, the candidate also applies the forced oscillations (FOT) method in preschool children with asthma as a sensitive method for proving small airways obstruction and bronchial lability.

The mechanics of breathing in children with spinal curvatures and the influence on PFT indicators are also examined in details. The interpretation of spirometry in different methods for determining the height of children with spinal curvatures was analyzed - measurement of current height and application of the "arm span" indicator. The results of the analysis clearly show that in children with scoliosis, the use of the current measured height to determine the reference values compromises the adequate interpretation of the result and reduces the sensitivity of spirometry as a method of detection of restrictive ventilatory defect. On the contrary, the application of the "arm span" indicator provides reliability of the results and earlier diagnosis of restriction in children with scoliosis.

Together with virologists from the national reference laboratory for influenza and acute respiratory infections, headed by Prof. Korsun, as well as pediatricians from the UMHAT "Alexandrovska" Ltd and the UMHATEM "N.I. Pirogov" Ltd, Dr. Lazova is actively working to collect samples for conducting sentinel studies of the etiological spectrum of seasonal acute respiratory infections.

In addition to the acute infections with the new SARS-CoV2, the pediatricians working in the Clinic of Pediatrics of the UMHATEM "N.I. Pirogov" Ltd are faced with a new complex immunological disease with multiorgan involvement and a severe clinical course, namely the multisystem inflammatory syndrome in children - MIS- C. The candidate shows a marked scientific and clinical interest in this new nosological unit and is among the first in Bulgaria to publish her own data on it.

Also, Dr. Lazova has a clinical and scientific interest in pneumococcal diseases in childhood and the course of pneumonia in children before and after the Covid-19 pandemic, as well as the dynamics of invasive pneumococcal infections before and after the introduction of the conjugated pneumococcal vaccine into the immunization calendar of Republic Bulgaria.

Also of interest are the data from the research on the health risks of taking energy drinks in children and adolescents, which are focused not only on the purely medical aspects, but also on the social one and the need to sharpen the attention of medical professionals/parents and society on the problem of free access and uncontrolled intake of energy drinks by adolescents in Bulgaria.

Teaching activities

Dr Snezhina Lazova has nine years of teaching experience. The initial teaching duties of dr Lazova were related to a lecture course on "Children's Diseases" and

"Internal Diseases and Medical Assistance" for students majoring in paramedic and sports massage at the private professional college "Delta" for the academic year 2011/2012. Dr. Lazova was a part-time teacher of Bulgarian and English-speaking medical students of the 5th year at the Sofia University, Faculty of Medicine in the academic year 2017/2018, training intern doctors with a total study load of 195.1 hours; She was also a part-time teacher at the Sofia University, Faculty of Public Health, from September 2020 - chief assistant - for the period 2019-2023 conducting a lecture course, seminar exercises for students in the following specialties - "nurse", "midwife", "management of clinical trials", "kinesitherapy", "medical assistant" at the Faculty of Public Health, Sofia University with a total workload for the last 3 years - 125 hours/year.

Currently, she is also chief assistant at UHATEM "N.I. Pirogov" Ltd., where she conducts a lecture course for doctors in emergency medicine, as well as supervises student summer internships/practices and is a lecturer for students IV course profile Emergency medicine with general horary (6 study hours lectures, 20 hours of practical exercises).

Dr. Lazova is the супержисор of two residents in pediatrics enrolled at the Clinic of Pediatrics of UHATEM "N.I. Pirogov" Ltd.

She lectures Bulgarian and foreign medical students and dental students, trainees, pediatric and pediatric pulmonology residents, paediatricians, and general practitioners at Medical University - Sofia. Furthermore, she actively participates in creating exam tests for Bulgarian and foreign medical students. In addition, Dr Mileva is performing practical examinations in paediatrics.

For 2021/2022 and 2022/2023, she has a total of 250 teaching hours for Faculty of Public health and 20 hours practical exercises and 6 hours lectures from UHATEM "N.I. Pirogov" Ltd.

Treatment and diagnostic activity

Dr Snezhina Lazova is a doctor with 15 years of experience in the field of paediatrics and pediatric pulmonology. She actively participates in the treatment-diagnostic and consultant activities in hospital as well as ambulatory settings. Dr. Lazova is a very well-prepared doctor who uses his knowledge in daily clinical work. She dedicated herself to the front lines in the treatment of children with COVID19. She is a valuable and requested specialist by patients and colleagues for consultations. Based on her experience, she also performs highly specialized expert evaluations.

Summary

Subordination with the requirements of Appendix 3 of the Regulations on the terms and conditions for acquiring scientific degrees and occupying the academic position "Assistant Professor", Professional direction 7.1. Medicine - medical-clinical field

Indicators - groups	Required number of points	Number of points based on evidence provided – Dr Snezhina Mihaylova Lazova
Group A	50	50
Group C Habilitation thesis 10 articles/monography	100	385.8
Group D	250	487.15
Total number of articles	25	54
IF Articles	5	7
Group E	50	645
Citations in foreign database	10	34
In Bulgarian journals	5	24
Group F	-	205
Research projects	1	8+1
Specialty	1	2
Training postgraduate students, PhD students, interns	yes	yes
TOTAL POINTS	450	1772.95

Conclusion:

Dr Snezhina Lazova is an established paediatrician-pulmonologist, scientist and teacher, proven in her practice. She has an unique sense of the most current medical problems in her medical and scientific activities. Dr Lazova is applying modern research technics in her everyday work. Her fluency in several foregin languages and academic spirit allow her to contact international centres and promote our Bulgarian experience in pediatric pulmonology.

Dr Snezhina Lazova meets all the mandatory conditions, significantly exceeding the minimum requirements for scientific and teaching activity for the academic position of Associate Professor in Professional Field 7.1. Medicine - medical-clinical field, specified in Annex №3 of the Regulations on the conditions and procedure for acquiring scientific degrees and academic positions.

Based on the above, I recommend the members of the scientific jury appointed by Order No. RD26-2023/18.10.2023 of the Head of UMHATEM "N.I. Pirogov" Ltd, to award to Dr Snezhina Mihaylova Lazova, MD, the academic position of "Associate Professor" in the field of higher education 7. Health and Sport, in the professional field 7.1 Medicine for the needs of the UMHATEM "N.I. Pirogov" Ltd.

09.11.2023 г.

Review
Prof. G