

STATEMENT

by

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Member of the Scientific Jury under Order № P-109-313/21.07.2025 of the Rector of the Medical University “Prof. Dr. Paraskev Stoyanov” – Varna

Concerning the dissertation:

“Relationship between Periodontal Status and Periodontal Infection with Coronary Heart Disease”

submitted for the award of the educational and scientific degree **Doctor**

Field of Higher Education: 7. Healthcare and Sports

Professional Area: 7.2. Dental Medicine

Doctoral Program: “Therapeutic Dentistry”

Author: Dr. Atanaska Atanasova Nyagolova

Form of study: Full-time

Department: Periodontology and Dental Implantology, Faculty of Dental Medicine, MU–Varna

Supervisor: Prof. Stefan Vasilev Peev, DMD, DSc

1. General Presentation of the Procedure and Candidate

This statement is prepared in compliance with Order № P-109-313/21.07.2025 of the Rector of MU–Varna.

The submitted materials fully meet the formal requirements of Art. 70 (1) of Section I on the acquisition of the doctoral degree. The dissertation comprises 173 pages, illustrated with 29 tables, 44 figures, and 5 appendices. The bibliography includes 392 references, of which 389 are in English. Evidence of three related publications has been provided.

2. Biographical Background

Dr. Atanaska Atanasova Nyagolova was born on 31 July 1987 in Shumen. She graduated with a Master’s degree in Dental Medicine from MU–Varna (2007–2013), having previously

studied English and Russian at the Foreign Language High School “Nikola Y. Vaptsarov” in Shumen.

Her professional career began in 2014 in Shumen, followed by practice in dental centers in Varna. Since 2019, she has been Assistant Professor at the Faculty of Dental Medicine, MU–Varna, where she teaches Periodontology in both Bulgarian and English.

She is fluent in English, proficient in Russian, with basic knowledge of Italian. She is a member of the Bulgarian Dental Association and the Bulgarian Society of Periodontology.

3. Relevance and Significance of the Research

The dissertation addresses a highly topical interdisciplinary problem: the association between periodontal infection and coronary heart disease (CHD).

Coronary disease remains a leading cause of morbidity and mortality worldwide, while periodontal disease is among the most prevalent chronic inflammatory conditions of the oral cavity. Growing evidence suggests that chronic oral infections may act as risk factors for systemic diseases, including cardiovascular pathology.

This study is therefore of high scientific and practical significance. Establishing a link between periodontal inflammation and CHD provides a rationale for novel preventive strategies, early diagnostics, and multidisciplinary management, with clear potential to reduce disease burden and improve quality of life.

4. Literature Review

The candidate demonstrates thorough knowledge of the topic, presenting an independent, well-structured, and scientifically grounded review. The overview is comprehensive, including both classical works and recent international studies, and reflects a solid grasp of current global research.

5. Aim and Objectives

The declared aim is precise:

“To establish the relationship between periodontal infection and the severity of coronary symptomatology in patients with coronary heart disease.”

This aim is pursued through three logically connected objectives:

1. To determine the proportion of cardiovascular patients presenting with periodontal inflammation.
2. To examine correlations between infection with *Porphyromonas gingivalis*, *Treponema denticola*, *Aggregatibacter actinomycetemcomitans* and clinical signs of periodontitis.
3. To evaluate whether the severity of periodontal infection influences the SYNTAX score.

6. Materials and Methods

The methodology is carefully selected, demonstrating sound clinical reasoning and appropriate use of clinical and statistical approaches. The description of methods is sufficiently detailed and transparent.

7. Results and Analysis

The results are systematically presented and statistically validated. They demonstrate the candidate's in-depth understanding of the subject.

- **Objective 1:** Of 199 patients, only 2 were without periodontitis, while 149 had severe disease. Gingival and plaque indices revealed generalized plaque-induced inflammation; CAL analysis showed greatest attachment loss in premolars, though differences were not significant. Furcation involvement was present in about one-third of multirooted teeth.

- **Objective 2:** *T. denticola* was the most frequent pathogen, followed by *P. gingivalis* and *A. actinomycetemcomitans*. Associations between specific pathogens and attachment loss were confirmed, highlighting the role of virulent species rather than overall bacterial load.

- **Objective 3:** A weak but significant correlation was identified between severity of coronary stenosis (LAD, RCA, LM) and CAL/stage of periodontitis, as well as between SYNTAX Score I and both CAL and periodontal stage.

8. Conclusions and Contributions

Twelve conclusions and eleven contributions are presented.

Original contributions:

- First investigation of the association between periodontitis and diffuse coronary artery disease as a distinct form of atherosclerotic involvement.
- Development of a multidisciplinary research model applicable to future systemic–oral health studies.

Confirmatory contributions:

- Significant correlation between *P. gingivalis* counts and CRP levels, supporting its role in systemic inflammation.
- Advanced periodontitis associated with greater coronary stenosis, reinforcing its role in atherosclerosis.
- Significant correlation between CAL and SYNTAX Score I, linking periodontal destruction with coronary complexity.
- No correlation between total microbial load and stenosis, suggesting indirect inflammatory mechanisms.
- Negative impact of microbial diversity confirmed by greater CAL in patients with multiple pathogens.
- Synergistic relationship between *P. gingivalis* and *T. denticola* reaffirmed.
- Potential of periodontal status as a marker in cardiovascular risk assessment highlighted.
- Strong argument presented for integrated cardio-dental care.

Conclusion

The dissertation of Dr. Atanaska Atanasova Nyagolova is an original and substantial contribution to the understanding of periodontal–cardiac interactions. It demonstrates high theoretical preparation, critical analytical skills, and the ability to translate findings into clinical relevance.

The work fully complies with the requirements of the Law on the Development of the Academic Staff of the Republic of Bulgaria, its implementing regulations, and the rules of MU–Varna.

Based on the above, I confidently recommend the award of the educational and scientific degree **Doctor** in the doctoral program *Therapeutic Dentistry* to Dr. Atanaska Atanasova Nyagolova.

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

15.09.2025

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