STATEMENT

By

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Member of the Scientific Jury under Order № P-109-312/21.07.2025 of the Rector of the Medical University "Prof. Dr. Paraskev Stoyanov" – Varna

Concerning the dissertation:

"Pathology of Coronary Arteries in Patients with Peri-implantitis"

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"
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1. General Presentation of the Procedure

This statement has been prepared in accordance with Order № P-109-312/21.07.2025 of the Rector of MU–Varna, related to the procedure for awarding the doctoral degree.

The submitted materials meet all formal requirements of the Law on the Development of the Academic Staff of the Republic of Bulgaria and the internal regulations of MU–Varna.

The dissertation of Dr. Velislava Deyanova Slavova is presented as a complete scholarly work, comprising 121 pages, structured into introduction, literature review, aim and objectives, materials and methods, original research, results and discussion, conclusions, contributions, references, and appendices. It includes tables, figures, and 179 cited sources.

Three publications directly related to the dissertation have also been submitted.

2. Biographical Background

Dr. Velislava Deyanova Slavova was born in 1994. She graduated in Dental Medicine from MU–Varna, obtaining the degree of Doctor of Dental Medicine.

Her professional development is strongly focused on clinical practice in periodontology and implantology. Since 2019 she has served as an Assistant Professor in the same department at MU–Varna, where she is actively engaged in teaching and research.

She speaks English and Russian and is a member of the Bulgarian Dental Association.

3. Relevance of the Topic

Peri-implantitis is one of the most common late complications of implant therapy and poses a serious clinical and social challenge, with a reported prevalence of 10–40% worldwide. With the growing use of dental implants, peri-implant complications have become a major concern.

Coronary heart disease, meanwhile, remains the leading cause of death globally, responsible for more than 17 million deaths annually (WHO). A growing body of evidence indicates that chronic oral inflammation may contribute to atherosclerosis and cardiovascular pathology.

Exploring the relationship between peri-implantitis and coronary disease is a novel and underexplored area of research, making this dissertation particularly timely and significant. The work reflects the modern interdisciplinary approach to health and systemic disease.

4. Literature Review

The literature review is comprehensive and well-structured, covering both foundational works in periodontology and implantology and the most recent international studies.

Up-to-date data are presented on the microbial etiology of peri-implantitis, particularly the roles of *P. gingivalis*, *T. denticola*, and *A. actinomycetemcomitans*, as well as on the systemic effects of chronic oral infections.

The candidate demonstrates excellent knowledge of the literature, which provides a strong foundation for her research hypothesis and objectives.

5. Aim and Objectives

The aim of the dissertation is to investigate the role of periodontal pathogens in the etiology of coronary stenosis in patients with dental implants.

Four objectives were formulated to address this aim, covering the link between local peri-implant conditions and systemic vascular changes:

1. To analyze patients' general health and peri-implant tissue status in those undergoing selective coronary angiography.
2. To examine the association between infection with *P. gingivalis*, *A. actinomycetemcomitans*, and *T. denticola* and peri-implant inflammation.
3. To determine correlations between peri-implant infection and SYNTAX Score.
4. To compare coronary artery pathology in patients with peri-implantitis and those with periodontitis.

6. Materials and Methods

The study involved 200 patients at UMHAT "St. Marina" – Varna (2021–2024), of whom 37 implant patients and 51 dentate patients were included in the final analysis.

The following were performed:

- Periodontal and peri-implant examinations using standard indices (GI, PlI, PD, BOP).
- PCR microbiological analysis for three key pathogens.
- Selective coronary angiography with SYNTAX Score I calculation.

The methodology is appropriate, consistent with international standards, and supported by adequate statistical analysis. The design reflects a careful link between theoretical considerations and original contributions.

7. Results and Analysis

The findings are clearly presented and aligned with the defined objectives.

- **Inflammatory status:** 86.5% of implant patients had generalized plaque-induced inflammation, with mean GI of 95% and PlI of 74%.
- **Microbiology:** *T. denticola* was the most frequently isolated pathogen (67.6%), followed by *P. gingivalis*, confirming its leading role in peri-implant disease.
- **Angiography:** Median stenosis values were RCx – 80%, RCA – 75%, LAD – 20%, with no significant LM involvement. Median SYNTAX Score I was 7, indicating low-to-moderate lesion complexity. Thrombosis occurred in 10.8% of patients, slow flow in 2.7%.
- **Comparisons:** Distinct vascular patterns were observed: LAD involvement predominated in periodontitis, while peri-implantitis was linked to more severe RCA/RCx involvement. This represents an original contribution.

- **Correlations:** Significant positive correlations were found between *T. denticola* levels and SYNTAX Score I, with weaker but significant correlations for *P. gingivalis*. No link was found with total microbial load, underscoring the systemic relevance of specific virulent species.

8. Conclusions and Contributions

Dr. Slavova formulated 13 well-supported conclusions, addressing both local peri-implant inflammation and its systemic cardiovascular impact.

Original contributions include:

- First demonstration of correlations between specific peri-implant pathogens and SYNTAX Score I.
- First comparative study of peri-implant and periodontal patients in terms of systemic and local status.
- First evidence of a link between peri-implantitis and early kidney disease.
- First report of predominant RCA and RCx involvement in peri-implantitis patients.
- First national study of coronary pathology in peri-implantitis.

Confirmatory contributions include:

- Reinforcement of the association between peri-implantitis and cardiovascular disease.
- Confirmation of *T. denticola* and *P. gingivalis* as key pathogens, with *T. denticola* more frequent in peri-implantitis.
- Higher *T. denticola* prevalence in peri-implant mucositis.
- Minor but distinct role of *A. actinomycetemcomitans*, more frequent in periodontitis.
- Smoking shown to have no effect on peri-implant disease prevalence.
- Implants shown to harbor lower microbial counts compared to natural teeth.
- Molar regions identified as most affected in both peri-implantitis and periodontitis.
- Correlation established between gingival/plaque indices and total microbial load.

Conclusion

The dissertation of Dr. Velislava Deyanova Slavova is an independent, rigorous, and scientifically sound work. The topic is highly relevant, the methodology well-designed, the results convincing, and the contributions significant to both science and practice.

The candidate demonstrates strong theoretical knowledge, analytical ability, and skill in interpreting complex interdisciplinary issues.

I therefore give a positive evaluation and recommend that the Scientific Jury award Dr. Velislava Deyanova Slavova the educational and scientific degree **Doctor** in the field of Dental Medicine, Doctoral Program *Therapeutic Dentistry*.

15.09.2025

Prepared by:
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