

To the Chairman of the Scientific Jury,  
In accordance with Order  
№ P-109-307/12.06.2023  
of the Rector of Medical University – Varna

**STATEMENT OF ACADEMIC OPINION**

**By Assoc. Prof. Georgi Papanchev, DMD, PhD,**

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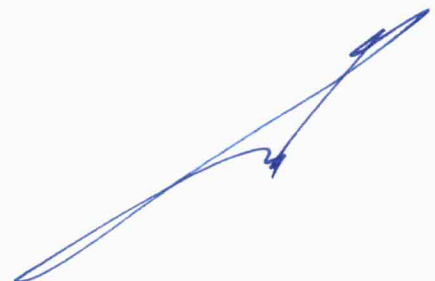
Regarding: Dissertation thesis for obtaining the educational and scientific degree “Doctor” in the field of higher education 7. Healthcare and Sports, professional field 7.2. Dental Medicine; scientific specialty “Oral surgery”, Department of Oral Surgery, Faculty of Dental Medicine, Medical University - Varna.

**Author of the dissertation thesis: Ralitsa Vladimirova Yotsova, DMD**

**PhD program:** |Full-time

**Topic: „RIDGE PRESERVATION USING GUIDED REGENERATION, FREE GINGIVAL GRAFTS, AND PLATELET-RICH PLASMA”**

**Scientific Supervisor:** Prof. Rossen Kolarov, DMD, PhD, Department of Oral Surgery, Faculty of Dental Medicine, Medical University-Varna



## **1. General description of the PhD procedure and the PhD candidate:**

The set of materials on both printed and digital media is in accordance with the Procedure for obtaining the educational and scientific degree “Doctor” in the field of higher education 7. Healthcare and Sports, professional field 7.2. Dental Medicine; scientific specialty “Oral surgery”, Department of Oral Surgery, Faculty of Dental Medicine, Medical University – Varna and includes all required documents.

### **Notes and comments on the submitted materials:**

The PhD thesis contains 283 pages and is illustrated by 133 tables and 123 figures.

The bibliography consists of 561 sources, 4 of which are in Cyrillic and 557 are in Latin. The work is structured in the following sections: Literature Review – 58 pages, Aims and Tasks – 2 pages, Materials and Methods – 21 pages, Results and Discussion – 128 pages, Conclusions – 1 page, Contributions – 2 pages.

The PhD thesis summary is in accordance with the Regulations for the Development of the Academic Staff of the Republic of Bulgaria.

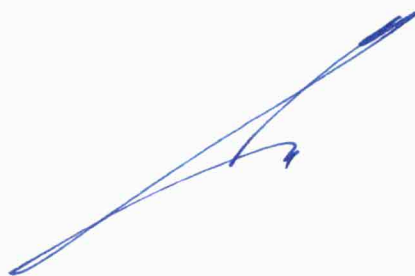
The PhD Candidate has submitted 3 scientific publications related to the dissertation, in which she is the first author.

### **Biographical data and career development:**

Ralitsa Vladimirova Yotsova was born in 1992 in Omurtag. In 2017 she graduated from Medical University of Varna, Department of Dental Medicine. Since 2018 she has been a full-time assistant at the Department of Oral Surgery, Faculty of Dental Medicine, Medical University – Varna. Since 2020 she has been specializing in “Oral Surgery” at the same department.

### **Evaluation of the personal participation of the PhD student in the dissertation work**


The PhD thesis is focused on an up-to-date problem in the contemporary dental medicine - the methods of dealing with bone deficiency. There are three groups of methods for addressing bone deficiency. The first group includes measures that minimize bone loss after extraction, such as immediate and early implantation and guided bone regeneration in post-extraction sites or the so-called "ridge preservation" techniques. The second group includes bone augmentation methods, and the third group includes alternatives to intraosseous implants combined with bone augmentation. To provide suitable conditions for the subsequent dental restoration, each extraction should be as atraumatic as possible. This aims to preserve the available tissue volume along with the elimination of the pathological process. The next step is guided regeneration in the post-extraction sites, aiming to minimize the expected bone resorption. Historically, ridge preservation has been described as a method of increasing tissue volume to retain immediate dentures. Today it is mainly applied for the purpose - to limit external resorption of the alveolar ridge and to stimulate bone formation in the socket.



The PhD candidate has performed a critical analysis of the literature which allows for the exact formulation of the research aim: **“To investigate the influence of platelet-rich plasma, non-porous PTFE barrier membranes, and autogenous free gingival grafts on healing processes in post-extraction sites.”**

For this aim she sets the following **tasks**:

1. To investigate the application of non-porous dense PTFE membranes for guided regeneration in the post-extraction sockets of the posterior teeth (premolars and molars).
  - 1.1. To perform a quantitative evaluation of the bone in the post-extraction sites by measuring the height and width of the alveolar crest immediately after the extraction and the height of the alveolar crest three months after the extraction.
  - 1.2. To analyze the relationship between the quantitative change in the height of the bone plates after three months and some factors (group of teeth, maxillary/mandibular teeth, dental diagnosis, smoking).
  - 1.3. To determine whether the change in height is the same for both bone plates and whether there is a relationship between the width of the bone plates (buccal and palatal/lingual) measured immediately after extraction and the quantitative change in their height after 3 months.
2. To investigate the application of non-porous dense PTFE membranes in combination with platelet-rich plasma for guided regeneration in the post-extraction sockets of the posterior teeth (premolars and molars).
  - 2.1. To perform a quantitative evaluation of the bone in the post-extraction sites by measuring the height and width of the alveolar crest immediately after the extraction and the height of the alveolar crest three months after the extraction.
  - 2.2. To analyze the relationship between the quantitative change in the height of the bone plates after three months and some factors (group of teeth, maxillary/mandibular teeth, dental diagnosis, smoking).
  - 2.3. To determine whether the change in height is the same for both bone plates and whether there is a relationship between the width of the bone plates (buccal and palatal/lingual) measured immediately after extraction and the quantitative change in their height after 3 months.
3. To investigate the influence of autogenous free gingival grafts on bone regeneration in the post-extraction sockets of the posterior teeth (premolars and molars).
  - 3.1. To perform a quantitative evaluation of the bone in the post-extraction sites by measuring the height and width of the alveolar crest immediately after the extraction and the height of the alveolar crest three months after the extraction.
  - 3.2. To analyze the relationship between the quantitative change in the height of the bone plates after three months and some factors (group of teeth, maxillary/mandibular teeth, dental diagnosis, smoking).
  - 3.3. To determine whether the change in height is the same for both bone plates and whether there is a relationship between the width of the bone plates (buccal and palatal/lingual) measured immediately after extraction and the quantitative change in their height after 3 months.



4. To investigate bone regeneration in the post-extraction sockets of the posterior teeth (premolars and molars) without the application of any ridge preservation procedures (control group).
  - 4.1. To perform a quantitative evaluation of the bone in the post-extraction sites by measuring the height and width of the alveolar crest immediately after the extraction and the height of the alveolar crest three months after the extraction.
  - 4.2. To analyze the relationship between the quantitative change in the height of the bone plates after three months and some factors (group of teeth, maxillary/mandibular teeth, dental diagnosis, smoking).
  - 4.3. To determine whether the change in height is the same for both bone plates and whether there is a relationship between the width of the bone plates (buccal and palatal/lingual) measured immediately after extraction and the quantitative change in their height after 3 months.
5. To evaluate and compare the results from all experimental groups.

The Results and Discussion part is illustrated with tables and diagrams. The conclusions she draws correspond to the obtained results.

The author suggests that the dissertation work demonstrates 4 original, 5 original for the country, and 4 confirmatory contributions.

### **Original contributions**

1. We proposed our original methodology for measuring the height of the bone plates of the socket relative to the maxillary sinus and the mandibular canal on cone-beam computed tomography.

2. For the first time, the simultaneous use of non-porous PTFE membranes and platelet-rich plasma as a method for guided regeneration in post-extraction sockets was investigated.

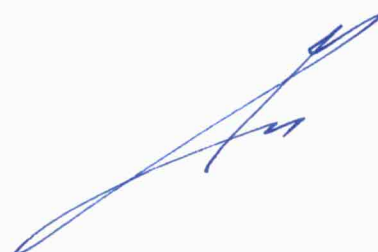
3. We proved that the application of PRP did not improve the results of guided regeneration with non-porous PTFE membranes regarding the preservation of the vertical dimensions of both buccal and palatal/lingual socket plates.

4. For the first time, a comparative analysis of the following three ridge preservation methods was performed: with an application of PTFE membranes, with a combination of PTFE membranes and PRP, and with free full-thickness gingival grafts.

### **Contributions original for the country**

5. For the first time in our country, non-porous PTFE membranes were applied as a method for ridge preservation.

6. For the first time in our country, full-thickness gingival grafts were applied as a method for ridge preservation.



7. For the first time in the country, the influence of ridge preservation methods on the change in the height of the buccal and palatal/lingual bone plate was investigated.

8. For the first time in our country, the influence of the width of the bone plates on the amount of their vertical resorption was investigated.

9. For the first time in the country, the role of the type of jaw, the area of the dentition, the diagnosis, and smoking status on the vertical resorption of the socket walls with/without the application of RP was investigated.

### **Confirmatory contributions**

1. We confirmed that ridge preservation methods could successfully reduce vertical post-extraction resorption of the socket walls compared to those left on spontaneous healing.

2. We confirmed that the application of non-porous PTFE membranes could reduce the post-extraction vertical resorption of the socket walls.

3. We confirmed that the application of full-thickness gingival grafts could reduce the post-extraction vertical resorption of the socket walls.

4. We confirmed that smoking did not affect the amount of vertical resorption of the socket walls.

### **Conclusion:**

The PhD thesis “Ridge Preservation Using Guided Regeneration, Free Gingival Grafts, and Platelet-rich Plasma” of Ralitsa Vladimirova Yotsova, DMD is **an original scientific contribution and meets the requirements** of the Law on the Development of the Academic Staff of the Republic of Bulgaria, the Regulations for its Application and the Regulations for the Development of the Academic Staff of the Medical University – Varna. Due to the above reasons I propose the award of an educational and scientific degree “Doctor” in the field of higher education 7. Healthcare and Sports, professional field 7.2. Dental Medicine for **Ralitsa Vladimirova Yotsova, DMD**.

07.08.2023

*Member of the Scientific Jury:*  
*Assoc. Prof. Georgi Papanchev, DMD, PhD*

