

To the President of the scientific jury,
appointed with the order of
the Rector of Medical University of Varna
№P-109-208/12.05.2022.

REVIEW

By Associate Professor Dr. Georgi Papanchev, PhD

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As procedure for the defense of a dissertation work for awarding the educational and scientific title "Doctor" in the field of higher education 7. Health and sports, professional field 7.2. Dental medicine; Oral surgery in the Department of Oral Surgery, Faculty of Dental Medicine, Medical University of Varna.

Author of the dissertation work: Dr. Velimira Hristova Georgieva

Form of education: self-training PhD student

**Subject: „APPLICATION OF DENTAL LASERS FOR TREATMENT OF PATIENTS
IN ORAL SURGERY”**

**Supervisor: Prof. Dr. Tihomir Georgiev, PhD, DSc
Department of Oral Surgery, Faculty of Dental Medicine, Medical University of Varna**



1. General presentation of the procedure and the PhD student:

The presented set of materials on paper and electronic media is in accordance with the procedure of acquiring the educational and scientific title "Doctor" in the field of higher education 7. Health and sports, professional field 7.2. Dental medicine; Oral surgery in the Department of Oral Surgery, Faculty of Dental Medicine, Medical University of Varna and includes all the necessary documents.

Notes and commentary regarding the documents:

The dissertation work includes 189 pages, illustrated with 70 figures and 69 tables. The bibliography consists of 158 sources, all of which in English. The literature review is presented on 37 pages, objective and tasks – 1 page, materials and methods – 46 pages, results and discussion – 74 pages, conclusions – 2 pages, contributions – 1 page.

The author's summary fulfills all requirements of the Law for development of academic staff in The Republic of Bulgaria.

The PhD student has attached 3 publications, in which she is the first author.

Biographical data and career development:

Dr. Velimira Hristova Georgieva is born on 28.06.1992 in Varna. In 2017 she graduates from the Faculty of Dental Medicine in Varna. Since October 2018 she has been appointed as a full-time assistant professor at the Department of Oral Surgery, Faculty of Dental Medicine, Medical University of Varna.

Assessment of the personal participation of the PhD student in the dissertation work

The dissertation work analyzes a current issue, the application of lasers in contemporary dental medicine. In dentistry, lasers are used in all areas - oral surgery, orthodontics, periodontology, endodontics, cariesology, prosthetic dental medicine, pediatric dentistry. A main problem in the treatment of patients in need of surgical treatment in dentistry is the postoperative discomfort, which can last from 1-2 days to 10-14 days, depending on the surgical intervention and individual differences of the patients. Another problem is the patients' fear of the upcoming operation, often leading to delays in the procedure and worsening of the condition. Finding a solution to the issue of children in need of surgical treatment is also of particular interest. In many children cases, such treatment turns out to be impossible, traumatic, or requires treatment under general anesthesia, even for minimal amount and duration of surgery. In medicine, as well as in dentistry, new, modern, minimally invasive methods are constantly sought, offering maximum comfort to the patient, both intra- and postoperatively. Such a method is the laser treatment, which is a reliable alternative to standard surgical techniques used in oral surgery.

The main advantages and indications specified when using lasers in oral surgery are precisely the reduction of the intensity and duration of postoperative discomfort, a shorter healing period, and better perception by patients, especially children.



Dr. Georgieva has written a critical analysis of the literature on the subject, which gives her grounds to precisely formulate the aim of her research: **“Improving the effectiveness of treatment of patients using dental lasers”**

In order to fulfill this goal, she sets the following tasks:

- 1. To monitor the healing process in surgical treatment of frenulum with dental lasers.**
- 2. To monitor the healing process of wound surfaces in the surgical treatment of chronic periapical processes with dental lasers.**
- 3. To monitor the healing process of wound surfaces in surgical treatment of alveolitis with dental lasers.**

The results and discussion are accompanied by tables and diagrams. The conclusions are in accordance with the obtained results.

The self-esteem of contributions in relation to the dissertation work includes 4 original and 5 confirmatory contributions.

Confirmatory contributions:

1. The role of dental lasers as the first tool of choice for soft tissue surgery when working with children is confirmed.
2. The advantages of using dental lasers for frenulotomy have been proven - decrease of bleeding, reduction of the surgical time and elimination of the need for sutures.
3. The multifunctionality and efficiency of Er,Cr:YSGG lasers in various surgical interventions in oral surgery, both on soft and hard tissues, is confirmed.
4. The effectiveness of Er,Cr:YSGG lasers is confirmed as minimally invasive, providing shorter soft tissue recovery time compared to other types of lasers.
5. The role of LLLT in influencing postoperative pain and inducing soft tissue healing is confirmed..

Contributions of original nature to the country:

1. For the first time in the country a comparative study was conducted to prove the advantages and disadvantages of diode and Er,Cr:YSGG lasers for frenulotomy.
2. For the first time in the country a study was conducted to determine the effectiveness of Er,Cr:YSGG laser for apical osteotomy.



3. For the first time in the country a study was conducted to establish the effectiveness of LLLT as a tool for treating alveolitis.

Contributions of original nature:

1. For the first time, a study with such a scope was conducted, aimed at proving the application of dental lasers in various fields of oral surgery.

The conclusions are directly related to the obtained results.

In the attached documents by the PhD student Dr. Georgieva no negligence was found. They correspond with the legal requirements of the Law on the Development of Academic Staff in the Republic of Bulgaria, the Regulations for the Application of the Law and the Regulations of Medical University – Varna for acquiring scientific titles and occupying academic positions at the Faculty of Dental Medicine, Medical University “Prof. Dr. Paraskev Stoyanov” Varna.

Conclusion:

The dissertation work of dr. Georgieva contains scientific and scientific-practical results, which are **original contributions to science and fulfill all requirements** of the Law on the Development of Academic Staff in the Republic of Bulgaria, the Regulations for the Application of the Law and the Regulations of Medical University – Varna. The dissertation work is effective and significant and entirely a personal work by the PhD student. Due to the abovementioned **I suggest that Dr. Velimira Hristova Georgieva be awarded with the educational and scientific title “DOCTOR”** in the field of higher education 7. Health and sports, professional field 7.2. Dental medicine.

01.06.2022

Reviewer:


Assoc. prof. Dr. Georgi Papanchev, PhD