



## OPINION

**By Assoc. prof. Dr. Mariana Milcheva Dimitrova-Haruil, PhD**

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Member of the Scientific Jury According to Order № P - 102/25.01.2022

**In accordance with:** Dissertation of Dr. Lilyana Hristova Shtereva, Assistant Professor in the Department of Pediatric Dentistry, Faculty of Dental Medicine, Medical University - Plovdiv, self-training PhD student

**Dissertation themed:** "Diagnostics and control of silanization of first permanent molars"

**Professional field:** 7.2 Dental Medicine

**Doctoral program:** "Pediatric dentistry"

**Academic supervisor:** Assoc. Prof. Dr. Veselina Kondeva-Glavinkova, PhD

The presented set of materials on paper and electronic media is in accordance with the Law on the Development of Academic Staff in the Republic of Bulgaria and Art. 115(1) of the Procedure for awarding "doctoral degree" in MU - Plovdiv; Regulations of MU-Plovdiv.

### **Biographical data about the candidate:**

Dr. Lilyana Hristova Shtereva was born in 1991 in the city of Plovdiv. She completed her secondary education in 2010 at ELS "Plovdiv" in Plovdiv. She graduated from FDM, MU-Plovdiv in 2016, and in 2017 with a competition she was appointed as a full-time assistant in the Department of Pediatric Dentistry, FDM, MU-Plovdiv, where she still works today. From 12.05.2021 she was enrolled as a self-training doctoral student, doctoral program: "Pediatric Dentistry" at the Department of "Pediatric Dentistry" at MU-Plovdiv.

Dr. L. Shtereva's teaching activities include teaching Bulgarian and English, practical and seminar classes in pediatric dentistry with students.

Dr. Shtereva is a member of BDA, BSSDM, NAPD .

Fluent in written and spoken English and German.

The doctoral student has attached 3 publications on the topic. 6 participations in Bulgarian and international scientific forums have also been conducted.

### **Relevance of the theme:**

The topic of the dissertation is extremely relevant and important both for the prevention of dental caries in childhood and for its treatment. Dental sealants have proven to be an effective tool for the prevention of dental caries, as well as for the secondary prevention of initial carious lesions. Dentists who are willing to apply sealants must know the indications for the use of sealants and be able to adequately carry out the procedures for their placement.

The correct assessment of the use of a sealant by the dentist depends on the adequate diagnosis and assessment of the risk of caries, as well as on the indications and contraindications for the use of sealants. The composition of sealants is still changing in search of the "ideal" sealant, which is why new developments in this direction are expected in the future. In the recent past in Bulgaria Prof. Mateeva et al. conduct a study on the reduction of dental caries after application of sealants. At present, no more detailed studies have been conducted in Bulgaria to use the capabilities of modern diagnostic tools to take into account the effectiveness of sealants depending on the individual risk of caries.

The lack of in-depth research in connection with the caries-prophylactic effect of different types of sealants, as well as diagnostic methods in accordance with the modern concept of clinical control and prevention of dental caries determines the exceptional relevance of this scientific work. The mentioned problems, which are considered in the dissertation, give me reason to say that the topic is significant, modern and properly selected.



## **Knowledge of the problem**

The doctoral student knows the current state of the discussed problem, analyzes and interprets the scientific information correctly. The dissertation is presented on a total of 165 pages. The illustration includes 11 figures, 1 table, 71 diagrams and 6 appendices. A thorough analysis of the literature on the subject has been performed.

The literature review meets the requirements. It is thorough, properly structured, informative and has a volume of 39 pages and ends with a discussion of the literature. In it Dr. Shtereva analyzes the information from the world literature on the problem and in the conclusion of the literary review the attention is directed to the purpose and tasks of the dissertation.

## **Research methodology**

The goal is clearly and precisely formulated and is a logical conclusion from the precise analysis of the literature review. The dissertation aims to study the diagnostic possibilities of visual and fluorescent diagnostics, caries-prophylactic effect and retention of sealants in newly erupted first permanent molars and in occlusion.

To achieve this goal, the author formulates 6 specific tasks. 5 of them have subtasks that follow logically unresolved issues on the topic. The modern statistical methods used are excellently selected and allow specific analysis of the results.

## **Characteristics and evaluation of the dissertation**

The presented dissertation is properly structured and contains all the basic elements - introduction, literature review, purpose and tasks, material and methods, results and discussion, conclusion, conclusions, and applications.

The project of the dissertation is written on 165 pages. It is illustrated with 1 table, 11 figures, 71 diagrams and 6 appendices. The bibliography includes 259 titles, of which 6 are in Cyrillic and 253 in Latin. The materials and methods used for each task are sufficient, described in detail and illustrated.

Systematized results and discussion on all assigned tasks are presented. The results are well illustrated and in detail and consistently give an answer to the set

goals and objectives of development. The conclusions to all tasks are correctly and in detail formulated and follow from the obtained results.

### **Assessment of scientific contributions and significance of development for science and practice**

The presented development is a modern study for diagnosis and control of the applied sealants and their caries-prophylactic effect. The dissertation has formulated contributions of original and confirmatory nature. They are up-to-date and practice-oriented.

#### *Contributions of original character*

- For the first time in our country the reliability of the three diagnostic methods is compared; visual diagnostics according to the ICDAS II system, diagnostics under magnification with the help of VistaCamiX Macro according to the ICDAS II system, diagnostics with the Vista Proof fluorescent camera and the modified Ryge criteria for monitoring of the caries-prophylactic effect and retention of sealants, and the results are compared within a 12-month clinical trial.

- For the first time in Bulgaria VistaCam-Macro and Proof FC are used for one-year follow-up of silanized occlusal surfaces of the first permanent molars of children aged 5-8 years.

- For the first time in the country the retention and caries-prophylactic effect of glass-ionomer cement used for silanization in newly erupted first permanent molars for 12 months is monitored.

- For the first time in the country, recommendations have been prepared for the application of sealants according to the risk and condition of the eruption.

#### *Contributions of a confirmatory nature*

- The excellent caries-prophylactic effect of glass-ionomer cement used for silanization in newly erupted first permanent and its lower retention was studied.

- The excellent caries-prophylactic effect of resin-based sealant in the first permanent molars in occlusion and its excellent retention were studied.

- The need for silanization of the first permanent molars of children in the high-risk group has been studied.

- The excellent comparability between visual diagnostics with and without magnification according to the ICDAS II system was studied.



- It has been proven that the use of Vista Proof FC is unsuccessful for monitoring occlusal surfaces silanized with Fuji Triage Pink due to the overdiagnosis it makes.

### **Assessment of the publications and personal contribution of the doctoral student**

Dr. Lilyana Shtereva is a leading author in the research, which emphasizes the personal contribution of the doctoral student. In connection with the dissertation, 3 publications and 6 participations in Bulgarian and international scientific forums are mentioned, which is quite enough.

I have no critical remarks on the merits of the presented final version of the dissertation. My recommendation to Dr. Shtereva is to promote her results to help dentists.

### **Author's summary**

The author's summary is properly structured, well illustrated and corresponds to the individual elements of development. I believe that the volume provided is sufficient and fully reflects the research of the doctoral student.

### **Conclusion**

The dissertation on "**Diagnostics and control of silanization of first permanent molars**" is a current scientific development, entirely personal work of the doctoral student. The presented dissertation with the achieved results shows that Dr. Shtereva has in-depth theoretical knowledge and professional skills in the specialty "Pediatric Dentistry", demonstrating qualities and skills for conducting research.

The scientific development has a scientific and applied contribution to clinical dentistry and meets all the criteria of the Law on the Development of Academic Staff in the Republic of Bulgaria and regulations of the Medical University of Plovdiv for awarding the educational and scientific degree "Doctor" in the scientific specialty "Pediatric Dentistry".

Due to the above, I confidently give my positive assessment of the successful research and propose to the esteemed scientific jury to award Dr. Lilyana Hristova Shtereva the educational and scientific degree "Doctor".

21.02.2022

Plovdiv

Prepared the opinion



/Assoc. prof. Dr Mariana Dimitrova, PhD/