

## STATEMENT

by Assoc. Prof. Veselina Kondeva Kondeva-Glavinkova, DDS, PhD

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About: The dissertation of Assoc. Prof. Dr. Iliana Lyubomirova Stoeva, Ph.D.  
for obtaining the Scientific Degree “Doctor of Science”

On the topic of: „**Work-related skin and respiratory symptoms among dental staff**”

### **I. Presentation of the procedure**

This review is prepared on the basis of Order № P - 160– 09.02.2021 of the **Rector of MU – Plovdiv Prof. Marianna Murdjeva, MD, PhD, MHM** and on the basis of Article 30, paragraph 3 of the Law For The Development Of Academic Staff In The Republic Of Bulgaria, preliminary discussion of the department council of the department of "Diagnostic imaging, dental allergology and physiotherapy" (*minutes №10 from 09.11.2020*) and *minutes from the Faculty Council of FDM-MU-Plovdiv №8 from 21.12.2020*)

### **II. Biographical data**

Assoc. Prof. Dr. Iliana Stoeva graduated the “Acad. Lyudmil Stoyanov” Language School in Blagoevgrad, with French and English in 1996. Graduated from the Medical University, Faculty of Dental Medicine - Sofia as a dentist in 2002. In 2009 she defended her dissertation on the topic: “Intraoral contact hypersensitivity to dental prosthetic materials” for acquisition of the degree “Doctor” in the Scientific specialty “Therapeutic dentistry”.

During the period June 2008 - May 2010 she was a full-time assistant at the Department of Imaging and Oral Diagnostics at the FDM at MU-Sofia. Since May 2010 she has been an assistant professor, and since 2011 he has been an associate professor in the Department of Diagnostic imaging, Physiotherapy and Allergology in the FDM at the Medical University - Plovdiv.

From 2020 until now she has been the Head of the Department of Diagnostic imaging, Dental Allergology and Physiotherapy and Vice Dean for Science and Research Activities at the FDM, Medical University Plovdiv.

In 2010 she acquired a degree in Prosthetic Dentistry.

In 2015 he acquired a degree in Dental Clinical Allergology.

She is a member of the Bulgarian Scientific Society of Dental Medicine.

The scientific production of Assoc. Prof. Stoeva includes a total of 63 articles in

national and international journals, including such with impact factor. She is a co-author of four textbooks and one student manual. Independent author of a practical manual to Dental Clinical Allergology.

Conducts theoretical and practical training of students in dental medicine in the discipline of Dental Clinical Allergology.

She was a research supervisor and participant in 6 research projects in Bulgaria.

The scientometric indicators of Assoc. Prof. Stoeva are in accordance with the national requirements by groups of indicators for the academic degree "Doctor of Science" in Professional field 7.2. Dentistry (under Art. 2b, para. 2 and 3 of the Law For The Development Of Academic Staff In The Republic Of Bulgaria- promulgated SG-amended and supplemented, issue 30 of 03.04.2018, amended SG No. 17 of 26 February 2019 and the Regulations for the application of the same law - amended and supplemented, SG No. 56 of 6 July 2018, amended and supplemented, SG No. 15 of 19 February 2019).

### **III. Dissertation**

The dissertation is presented on 270 pages. It is illustrated with 57 tables, 45 figures. Bibliography includes 546 literature sources, of which 9 in Cyrillic script and 537 in Latin script. Bulgarian authors who have worked on issues related to the present dissertation are correctly cited.

#### ***1. Topicality of the issue***

Globally, the professions of dentists, dental technicians, dental nurses and dental assistants rank among the top places as a prerequisite for the development of occupational dermatoses and respiratory diseases. The variety of allergens as a result of the introduction of new materials, the characteristics of the individual and professional habits determine the dental staff as a risk group for the occurrence of work-related skin and / or respiratory symptoms.

The study of work-related symptoms, risk factors for their occurrence, allergic mechanisms of these adverse effects and the prevalence among dental staff will allow the development of effective prevention programs.

The literature review on the subject shows that in some European countries the problem has been studied in detail. In Bulgaria, isolated studies have been performed on small groups where testing was performed with several allergens, without exhausting the full range of chemical agents in clinical and laboratory dental practice. That is why the development of the dissertation is relevant and timely.

#### ***2. Bibliographic reference and review***

The literature review begins with a review of most of the materials used in dentistry that cause sensitization in medical staff. Materials leading to contact clinical symptoms and volatile compounds leading to respiratory symptoms are discussed in detail.

The literature review addresses in detail issues related to: epidemiology of work-related skin and respiratory symptoms; characteristics of contact dermatitis: mechanism of allergic and irritant contact dermatitis; occupational contact dermatitis; respiratory hypersensitivity, etc.

At the end of the literature review, it is concluded that the timely diagnosis of work-related allergies is of great importance for the rapid and successful cessation of related symptoms. This depends both on the competence of the specialists in the diagnostic process and on the awareness of the dental staff themselves, who must actively seek qualified help in order to prevent the aggravation of symptoms.

### ***3. Aim and tasks***

Good knowledge and understanding of literature and the personal professional experience of Assoc. Prof. Dr. Iliana Stoeva in the field of dental allergology are decisive for the exact formulation of the set aim and tasks of the dissertation.

In fulfillment of the aim 5 tasks with 4 subtasks are solved, using epidemic, clinical, sociological and statistical methods.

### ***4. Own research and development. Results and discussion.***

#### **Tasks 1 and 2:**

To perform the first and second tasks, a sectional survey was used, including 5993 representatives of dental staff (dentists, dental nurses, dental technicians, dental medicine students), which in its scale can be considered a national survey. The questionnaire contains demographic data; adverse effects from irritants in the professional environment; evolution of occupational skin and respiratory reactions; work habits (work experience, specialty, working hours, use of gloves, glove material, duration of contact with them, frequency of hand washing) and anamnestic data on hereditary diseases, as well as contact, drug and food allergies.

The results of both tasks present in detail the prevalence of skin and respiratory symptoms in the four working groups. The highest prevalence of skin symptoms associated with work is found in dental nurses (33.3%) and respiratory symptoms were found in 26.2%. Despite limited contact with work-related hazards, students also reported an alarming frequency of work-related skin and respiratory symptoms (21.2% and 12.4%, respectively). The combination of different interacting factors increases the risks of skin reactions localized mainly on the hands of dental staff. There is a risk of respiratory symptoms in individuals with atopic disease, mainly asthma, combined with cumulative exposure to volatile substances in the work environment.

#### **Task 3:**

In order to identify the main allergens in the dental materials and agents under task three, 89 Material Safety Data Sheets of materials and agents used in the dental

environment were analyzed. The information can be found directly on the manufacturers' websites or in the leaflets placed in the packaging of the dental materials. Insufficient information about the composition of the composite materials presented in the MSDSs has provoked personal correspondence with seven leading companies - Hereaeus Kulzer, GC, Ivoclar Vivadent, Kerr, SpofaDental, Voco and 3M ESPE, whose products are widely used in the Bulgarian dental market.

As a result of the third task, allergenic ingredients from the wide variety of dental materials, disinfectants and protective gloves have been identified and classified, which significantly optimizes the diagnostic process and provides complete and accurate diagnosis of suspected contact allergy to haptens from the clinical and laboratory environment.

#### **Task 4:**

Standardized allergens from the Swedish company Chemotechnique Diagnostics were used for the skin allergy tests under the fourth task, and the reporting of the results was done according to the criteria of the International Research Group on Contact Dermatitis. Skin allergy tests were performed on 329 dental staff members aged 22 to 76 years.

The presented results of the skin allergy test to 40 occupational allergens clearly outline the tendencies for sensitization to certain haptens in individuals from different work groups. Sensitization to constituents in disinfectants develops mainly in dental nurses, acrylic monomers are the main allergenic factor in dental technicians, and in dentists - both acrylic monomers and chemical compounds in protective gloves. In one third of the symptomatic staff, allergic mechanisms are the cause of dermatoses.

#### **Task 5:**

For the development of the fifth task, Microsoft's Access software product was used, which is a functional system for managing relational databases. The product allows: defining and storing data, data processing, and data control.

The volume of the research material is sufficient, the methods used and the statistical processing make it possible to obtain scientifically sound, comparable results.

With the creation of an electronic register for allergological diagnostics for the dental staff, the development of the dissertation is completed.

The diverse statistical processing of the survey data makes a particularly good impression.

The results of the research give grounds for Assoc. Prof. Stoeva to make nine general implementations .

### ***5. Dissertation contributions***

The presented dissertation is a modern scientific study that examines work-related skin and respiratory symptoms among dental staff. The contributions of this work are

topical, relevant, focused on practice and are the result entirely of the research of Assoc. Prof. Dr. Iliana Stoeva.

A significant contribution of the dissertation is the assessment of the prevalence of work-related-related skin and respiratory symptoms among dental staff.

Based on a regression model, the risk factors for the occurrence of work-related skin and respiratory symptoms among dental staff are derived.

Contact allergens from dental materials, protective equipment and disinfectants used in clinical and laboratory dental practice have been identified, which provides a complete and accurate diagnosis in case of suspicion of work-related allergy.

An electronic register has been created for the dental medical staff with work-related skin and respiratory symptoms.

#### **6. Author's summary**

The summary fully meets the requirements, contains 60 pages and presents in a synthesized form the main structural elements of the dissertation. It is illustrated appropriately and meets all requirements.

Copies of 3 chapters from collective monographs are presented on the topic of the dissertation. There are also 12 articles presented in international and Bulgarian peer-reviewed scientific journals. There are 6 scientific reports, of which 5 participations in scientific forums abroad and 1 participation in scientific forums in Bulgaria.


#### **7. Conclusion**

The dissertation: "Work-related-skin and respiratory symptoms among dental staff" for the award of the degree "Doctor of Science" is in-depth, analytical, focused and effective. It is a summary of many years of clinical and theoretical experience. The dissertation has scientific and applied nature, offers a comprehensive concept for diagnosis and prevention of people employed in the field of dental medicine, exposed to harmful factors with high sensitizing potential.

The dissertation fully meets all the requirements of the Law For The Development Of Academic Staff In The Republic Of Bulgaria; The Regulations for application of the same law and the respective Rules and Regulations of MU, Plovdiv.

All of the above gives me reason to give a positive assessment of the study and I propose to the members of the esteemed thesis committee" that Assoc. Prof. Dr. Iliana Lyubomirova Stoeva, PhD be awarded the scientific degree "Doctor of Science" in the Scientific specialty "Dental Clinical Allergology, Professional field : Dental Medicine.

Plovdiv  
22.02.2021

Statement drawn up by:   
(Assoc. Prof. Veselina Kondeva-Glavinkova, DDS, PhD)