

## REVIEW

from

prof. Vladimir Emanuilov Panov, DMD, PhD, DSc  
Department of Conservative Dentistry and Oral Pathology,  
Faculty of Dental Medicine, MU-Varna

## ABOUT

Dissertation thesis for the award of the degree of „Doctor“ to Dr. Mariana Rosenova Kirova - Assistant Professor at the Department of Conservative Dentistry and Oral Pathology, Faculty of Dental Medicine-Varna, entitled 'Evaluation of changes in hard dental tissues in patients with bulimia', with scientific supervisor Assoc. Dr. Tsvetelina Borisova-Papancheva, PhD, and according to the order of the Rector of MU-Varna P 109-153/13.03.2025.

### Biographical data

Dr. Kirova was born in 1993 in Varna. In 2012 she graduated from the IV Language School in the town of Varna with a degree in Spanish. She completed her higher education at the Faculty of Dental Medicine at the Medical University 'Prof. Dr. Paraskev Stoyanov' - Varna in 2019. She started working in the same year as an assistant professor at the Department of Conservative Dentistry and Oral Pathology at the Faculty of Dental Medicine, Medical University - Varna. She taught Bulgarian and English speaking students.

### Topic Relevance

Eating disorders, in addition to having a negative impact on the general condition of the body, lead to significant consequences in the oral cavity. The most significant problem in patients suffering from Bulimia Nervosa giving direct impact on oral health is the recurrent episodes of vomiting which reduces the pH in the oral cavity.

As a result of the demineralization of the dental tissues, we can see erosions, irreversible loss of enamel, dentin. Excessive maintenance of oral hygiene, aggressive tooth brushing with abrasive toothpaste, also contributes to the damage of hard dental tissues, occurs in some patients. Increased incidence of new carious lesions are present. There are changes in the quality and quantity of saliva, which compromises its protective functions and leads to negative consequences for oral health, hyperesthesia.

One of the major contributors to the deterioration of oral health in patients with eating disorders is not seeking timely dental care. Due to lack of sufficient information about the impact of the disease on the teeth, fear or shame on the part of the patient, they seek dental care late. There is a lack of in-depth and comprehensive research on the subject. Patients suffering from this eating disorder are not aware of its impact on oral health. There is a lack of a protocol for the prevention of dental erosion, carious lesions and hyperesthesia and their consequences.

Dentists are often the first doctors to encounter the symptoms of an eating disorder manifested in the oral cavity. They can provide assistance to the patient regarding treatment of both the underlying disease and its oral consequences to reduce complications. In-depth research on this topic would contribute to the recognition of early symptoms in the oral cavity, such as the prevalence of carious lesions, erosive changes on the hard dental tissues at disease-specific sites, and hyperesthesia of teeth without any obvious pathological changes, making the study important and useful for this group of patients.

## Structure

The thesis contains 170 pages and is illustrated with 35 tables, 54 figures and 6 appendices. The reference list contains 299 articles, of which 18 in Cyrillic and 281 in Latin.

The introduction directs us to the idea of the study. The literature review discusses current data on the basic characteristics of eating disorders, etiology, epidemiology,



clinical presentation, the role for saliva as a diagnostic indicator, changes in parotid gland volume, and methods of treatment for erosions and hyperesthesia.

The aim is detailed - to investigate the relationship between Bulimia Nervosa and poor oral health due to the effect of self-induced vomitus as a leading risk factor and to clinically examine the oral complications resulting from the disease.

In order to fulfill the aim thus set, 3 objectives were formulated, which allowed the study to be carried out.

According to the first task, the object of the experimental studies is to analyze the saliva qualities in patients with bulimia nervosa, examining different parameters: stimulated and unstimulated saliva, quantity, viscosity, pH of saliva, buffering capacity and to compare them with the parameters of a healthy control group. A total of 60 patients were studied.

In the second task, changes in the dental status of bulimic patients were determined. The incidence of primary and secondary carious lesions, filled teeth and their localization were studied. The clinical picture of erosive defects of hard dental tissues was described, and their localization and size were evaluated.

The last task aims to investigate dentinal hypersensitivity in patients with bulimia nervosa. Two methods were used in conducting the study in order to provoke and investigate dentinal hypersensitivity, a tactile stimulus using a dental probe and a cold stimulus using an air jet from the dental unit.

## Results

The results of this study suggest that patients suffering from bulimia nervosa are significantly more affected by decreased salivary secretion compared to a control group. Decreased salivary secretion was found in 53.3%, a significant proportion, which was more than three times higher than that of the control group- 16.7%. This may be related to the frequent episodes of vomiting in these patients, which lead to salivary gland damage and decreased salivary flow, which can have serious negative consequences on oral health.

In the control group 83.3% of patients had normal salivary secretion, whereas this percentage was significantly lower in BN patients (36.7%). The author suggests that healthy individuals retain normal salivary gland functions, and the disease negatively affects normal salivary secretion. Increased salivary secretion was observed in only three of the eating disorder patients studied, whereas there were no cases of increased salivary flow in the control group.

26.7% of bulimic patients had normal salivary viscosity, which was significantly less than the control group. At the same time, in the bulimic group there was an increased incidence of cases with altered salivary viscosity - moderately elevated and elevated. This indicates that bulimia can lead to disturbances in the physiological characteristics of saliva.

The study done by Dr. Kirova is clearly demonstrated that bulimic patients had significantly more frequent abnormalities in salivary viscosity compared to the control group. The results confirm that the disease has a negative impact on salivary viscosity.

Resting salivary acidity testing in the control group found that 60% of the subjects had normal pH and healthy saliva. The remaining 40% had moderate acidity and there was no patient with measured high acidity.

The largest proportion of patients had normal saliva. In the group of patients with BN, 63.3% of the subjects were found to have normal saliva quantity. In the control group, 80% of the subjects showed normal values of stimulated saliva. In the category of low amount of saliva, 36.7% of the bulimic group fell, and in the control group low amount was seen in only 20% of the controls.

Dr. Kirova proposes the tests for clinical assessment of saliva quality as easy and quick to use, with understandable and easily reproducible results that could be successfully used in daily clinical practice to support the diagnosis of eating disorders, as well as to serve as motivation for patients.

The results of the second task indicate that molars are the group of teeth with the greatest erosion involvement. Moderate erosions - B2 - were the most frequently



observed. Mild B1 erosions are also relatively common, while severe B3 erosions are rare. Incisors in the mandible are also relatively commonly affected, but mild forms of dental erosion predominate. Grade B2 erosions are rarely seen and grade B3 are not seen. Mild B1 erosions are most common, followed by grade B2. Severe B3 erosions are extremely rare. Canines show a relatively low incidence of erosions. Mild forms are most common in this group, but are relatively few compared to the other groups.

The dissertator observed a very high proportion of erosive defects in bulimics affecting both enamel and dentin. The presence of erosive lesions indicates a condition that has persisted for at least six months.

Dr. Kirova suggests that BN patients are more likely to have poor oral health with an increased incidence of dental erosions and carious lesions.

The discussion of the results of the third task found a high incidence of dentinal hypersensitivity in patients suffering from BN. Cold and mechanical irritants were found to be the most common provokers of hyperesthesia, which were clinically recreated by irritation using cold air from the dental unit and scratching the tooth surface with a probe. Dr. Kirova found that molars are most commonly affected by hyperesthesia, but it is not in them that dentinal hypersensitivity is most severe. The strongest hypersensitivity was recorded in the premolars of the mandible.

The study reveals that the severity of tooth wear is directly related to the severity of dentin hypersensitivity. The greater the BEWE index, the higher the sensitivity reported. The results shows that erosive changes are a predisposing factor for hyperesthesia. Dr. Kirova revealed that the presence of acids is a major predisposing factor for the development of dental erosions and hyperesthesia. The average measured scores that were obtained by using the VAS scale used in practice for clinical research purposes is about 4, which is also consistent with the results obtained by Wilson RF, 2001. After analyzing the results in the present study, the author concludes that dentinal hypersensitivity is a clinical indicator of an active erosive tooth wear process in patients with Bulimia Nervosa.

After the investigations, salivary changes, an increase in primary and secondary carious lesions, and an increased incidence of dental erosions accompanied by hyperesthesia in Bulimia patients were found.

A protocol has been developed for the prevention and treatment of oral complications. It contains instructions and motivation for the patient, as well as methods of prophylaxis and treatment depending on the progression of oral pathology in 10 points.

Dr. Kirova formulated 13 conclusions, 5 original contributions, 4 confirmatory contributions, and one applied contribution.

The abstract consists of 73 pages and presents in abbreviated form the main problems addressed in the thesis.

Results of the study are reflected in a list of three publications, all three in Bulgarian in the Varna Medical Forum Journal. The PhD student is the lead author in all articles, in co-authorship with her supervisor and colleagues from the department.

## Conclusion

Dr. Mariana Rosenova Kirova has submitted a completed dissertation that meets the requirements. I will give my positive vote for the award of the degree of „DOCTOR“.

Varna

28.04.2025

Заличено на основание чл. 5,  
§1, б. „В“ от Регламент (ЕС)  
2016/679

prof. Vladimir Panov