ISSN 2518-1432 (Online); ISSN 2227-4782 (Print) https://doi.org/10.21856/j-PEP.2025.2.09

THE EFFECTS OF OVERWEIGHT AND OBESITY ON THE STATE THE ORAL CAVITY IN CHILDREN AND ADOLESCENTS*

A. I. Maksymenko[1], O. V. Sheshukova[1], A. V. Onyshchenko[2], T. V. Polishchuk[1], V. P. Trufanova[1], K. S. Kazakova[1], S. S. Bauman[1], O. A. Pysarenko[1]

[1] Poltava State Medical University, Poltava, Ukraine;
[2] Municipal Enterprise «Children's City Clinical Hospital of the Poltava City Council», Poltava, Ukraine
a.maksymenko@pdmu.edu.ua

The problem of obesity in modern society is becoming increasingly significant in terms of health and social issues. Obesity is one of the most common chronic diseases among the population of different age groups in all countries of the world and has been recognized by the World Health Organization (WHO) as a «new epidemic of the twenty-first century» [1–4].

Over the years, there has been an upward trend in the number of overweight and obese people, given the inactive lifestyle of modern society, the increase in refined carbohydrates in the diet, and the presence of constant emotional stress, which leads to an increase in the incidence of obesity at any age [5–8].

According to the WHO (2022), about 60% of the European population is overweight and obese, which in turn creates preconditions for more severe infectious and non-infectious diseases and, as a result, an increase in the number of deaths. Obesity in Ukraine ranks second in both prevalence and morbidity after grade 1 diffuse goiter [1, 9, 10].

WHO experts identify the concepts of «overweight» and «obesity» as pathological or excessive accumulation of fat, which poses a significant health risk. Obesity is nowadays commonly known as a chronic multiethiological disease associated with several genetic and neurological factors, changes in the functions of the endocrine system, metabolism, which develops because of lifestyle and eating behaviour disorders, is recurrent and manifested by the accumulation of adipose tissue in the human body [11].

The term «overweight» is broadly defined as a person's body weight exceeding what is considered normal for their height. Weight gain can occur not only due to fat storage, but also because of fluid retention in the body and is common among people with developed muscles [12].

The most used measure of overweight and obesity is currently the body mass index (BMI). The BMI is calculated by dividing a person's weight in kilograms by the square of their height in meters (kg/m²). However, it should be noted that this measure is an epidemiological

* The study was initiated by the authors within the search topic.

The authors guarantee full responsibility for all the information published herein.

The authors guarantee absence of competing interests and their own fi nancial interest when carrying out the research and writing the article.

The manuscript was received by the editorial staff 01.04.2025.

tool developed more than 150 years ago and is not a reliable indicator of prevalence, which is more appropriately assessed by combining other indicators of obesity, such as waist circumference, waist-to-hip ratio, fat fold thickness and, in particular, accurate assessment of body fat. For adults, a BMI of 25 or higher is defined as overweight and 30 or higher as obese [2, 3, 13, 14].

For children, there is no generally accepted classification system based on BMI, because for children and young people BMI is not a static measurement, but changes from birth to adulthood and is gender specific, so the interpretation of BMI values in children and young people is difficult [12].

It has been established that the most informative indicators for diagnosing overweight and obesity are waist and hip circumference and fat fold thickness [15, 16].

The rising rate of obesity among children is especially worrying. Obesity in children is not only a medical but also a social and psychological problem today. The number of children diagnosed with obesity doubles every three decades. Ukraine is among the European leaders in the prevalence of obesity. Every year, 18–20 thousand new cases of obesity among children and adolescents are recorded in our country. It is known that obese children suffer from this disease in adulthood [6, 11, 13, 15, 17, 18].

Obesity can be a disease and a cause of many other diseases, disabilities and reduced life expectancy. The main characteristics of obesity are an increase in the proportion of visceral fat, insulin resistance, and hyperinsulinaemia. It is known that severe, pathogenetically determined consequences of obesity are disorders of carbohydrate, protein, and lipid metabolism and the development of persistent low-intensity inflammation [19, 20]. Obesity leads to several medical problems, in particular, metabolic disorders (type 2 diabetes mellitus, insulin resistance, metabolic syndrome), cardiovascular disease (arterial hypertension, heart failure, stroke), respiratory disease (bronchial asthma), reproductive disorders, depression, early disability, etc. [21, 22].

These processes affect both the whole body and the oral tissues. The data on the relationship between obesity, overweight and dental and periodontal health are generally very controversial. Existing studies suggest that there is a correlation between these parameters [23].

The dental status of a person differs in different social and age groups, by regions, as well as by many other definitions. These facts can be explained by some reasons. The most important are the medical awareness and motivation of the population, the level of social and educational culture. The state of dental health depends on the level of oral hygiene, the intensity of carious lesions and its complications, the impact of various orthodontic pathologies, the peculiarities of the course of inflammatory and dystrophic-inflammatory processes in periodontal tissues, as well as the presence of comorbidities in the child's body [13, 15, 24, 25].

Dental health often depends on diet. Veretilnyk et al. (2019) found in a questionnaire that almost 95% of overweight children eat sweets every day, in contrast to children with regular weight (50%). Only 12% of overweight children have cereal or dairy products for breakfast, but the majority (83%) prefer sandwiches, unlike children of regular weight [15].

It has been established that obese people who abuse carbohydrate foods, sweets, and fast food have a high intensity of caries, impaired ability to mineralize saliva, which indicates a high activity of the caries process. The frequency of consumption of foods containing sugar is directly proportional to the intensity of the caries process [26–28].

It is a known fact that dental caries in combination with overweight is a multifactorial disease that affects the health and psychosocial development of a child. Recent data from Australia, Denmark, Mexico, and Sweden indicate a positive correlation between dental caries and BMI and show that behaviours that contribute to the development of obesity, such as snacking between meals in early childhood, predict the development of caries in later life [29–31].

In Ukraine, the impact of overweight on the state of dental hard tissues was studied by Kostura V. and Bezvushko E. (2015). The researchers examined 12- and 15-year-old schoolchildren in Lviv and found that behavioural habits in overweight children are justified risk factor and indicator of dental caries. The resear-

chers found that the intensity of caries in obese children was one and a half times more compared to children with normal body weight [32].

It has been proven that overweight and obesity are significant risk factors for children's dental health. In a clinical observation by Panagiotou E. et al. (2021), children aged 7–15 years with obesity showed a greater level of caries in temporary and permanent teeth, a predominant prevalence of gingivitis, a worse level of oral hygiene, reduced salivation and saliva buffering capacity compared to children with normal BMI [33]. A study of 8–11-year-olds found a significant relationship between overweight, obesity and caries prevalence [34]. Obese individuals aged 11–18 years had a more frequent occurrence of caries, gingivitis, and dental plaque compared to those with normal body weight, and a significant association between obesity and the amount of dental plaque was also found [35]. The presence of subgingival calculus, hygiene indices, bleeding on probing, and probing depth > 4 mm were also significantly higher in obese children and adolescents [36, 37].

In the past decades, it became clear that periodontal diseases are closely related to the pathology of internal organs [29, 38]. Obesity has been recognized as a significant predisposing factor for the development of periodontitis, as well as a factor determining the severity of its course. Scientists all over the world believe that these diseases are heterogeneous in terms of etiological and pathogenetic factors. Their causes and mechanisms include a whole range of immunological, biochemical, structural and other pathological changes in the processes of inflammatory alteration around dental tissues, and metabolic disorders in the body are accompanied by pathological, morphological, immune and biological effects in the periodontium [29, 39–42].

According to several scientific studies, obesity is characterized as a state of chronic subclinical inflammation, which can lead to exacerbation of chronic inflammatory diseases, including periodontitis. The severity of the inflammatory-dystrophic process in the periodontium is directly proportional to the degree of obesity. In conditions of excess visceral and subcutaneous fat, adipocytes release numerous proinflammatory adipocytokines into the bloodstream: TNF-α, IL-6, which stimulate the production of acute inflammatory proteins, such as C-reactive protein, and disrupt the body's immune response, increasing the susceptibility to bacterial infection [14, 43, 44].

It has been established that the risk of periodontal disease and its manifestation strongly depend on the age of the child. Children 6–12 years of age with obesity, with the same indicators of oral hygiene, were characterized by significantly more intense clinical manifestations of gingivitis compared to their peers with normal body weight [38, 45].

Untreated gingivitis in obese individuals tends to transform into periodontitis, especially in people with chronic diseases that affect the body's immune response, such as diabetes mellitus, obesity, autoimmune diseases, some other endocrine diseases, etc. [46–48].

Studies by foreign authors have shown that obese patients have an increased tendency to bleeding gums, tartar formation and formation of periodontal pockets. The study found a direct impact of obesity on periodontal disease [49, 50]. Pedersen S.D. (2013) found that obese individuals had an increased prevalence of gingivitis in combination with the severity of periodontal tissue damage (significantly greater probing depth and loss of tooth-gingival attachment). The study found a direct effect of obesity on periodontal disease [51].

The predisposition to periodontal disease also depends on the oral microflora, which varies depending on the degree of hard tissue damage, the number of teeth in the oral cavity and the state of the immune response. It has been established that in obesity and metabolic syndrome, the structure of the microbiocenosis of periodontal pockets is characterized by a decrease in the number of saprophytic microflora and a greater colonization with periodontopathogenic microorganisms [52, 53].

Clinical evidence suggests that obese patients also suffer from osteoporosis, and the severity of the latter correlates with the amount of excess adipose tissue. Obesity has a negative impact on bone homeostasis, disrupting the balance of osteoblast and osteoclast activity and causing increased bone resorption. The reasons for this condition may be excess fat in

the bone marrow with an increase in the number of adipocytes and their size, and as a result, a change in the differentiation of bone marrow stem cells with a decrease in the number of osteoblasts, which disrupts bone integrity. The problem of osteoporosis is directly related to the bone component of the periodontium. Hormonal regulatory mechanisms have a direct impact on the bone tissue of the alveolar bone. Numerous studies have shown an inverse correlation between the degree of mineralization and the severity of generalized periodontitis [54–56].

There is no tendency for an increased prevalence of orthodontic pathology in obese children. Overweight children are more likely to have crowding of teeth in the lower jaw and tortoanomalies [15].

CONCLUSIONS

Consequently, the analysis of scientific sources shows the presence of significant pathological changes in the oral cavity in overweight children. It has been established that the prevalence of periodontal disease, as well as obesity, is steadily increasing in all age groups of the world's population. Obesity, as a factor that modifies the systemic immune response, significantly increases the risk of periodontal tissue diseases and affects the severity of their course. At a young age, periodontal diseases are dominated by gingivitis, which transforms into periodontitis in older age.

A conceptual solution to this problem can be achieved through close interaction between paediatricians, endocrinologists and paediatric dentists. If a paediatrician detects a child's tendency to be overweight and obese, it is essential to refer such a patient to a dentist for a consultation. Considering the above statements, detection of periodontal diseases at early stages, proper treatment and monitoring is the key to preventing the occurrence of irreversible changes that may be accompanied by bone resorption and loss of tooth-epithelial attachment.

REFERENCES

1. Spinelli A, Buoncristiano M, Kovacs VA, et al. *Obes Facts* 2019;12(2): 244-258. https://doi.org/10.1159/ 000500436
2. Güngör NK. *J Clin Res Pediatr Endocrinol* 2014;6(3): 129-143. https://doi.org/10.4274/Jcrpe. 1471.
3. Jebeile H, Kelly AS, O'Malley G, Baur LA. *Lancet Diabetes Endocrinol* 2022;10(5): 351-365. https://doi.org/10.1016/S2213-8587(22)00047-X
4. Zhang X, Liu J, Ni Y, Yi C, et al. *JAMA Pediatr* 2024; 178(8): 800-813. https://doi.org/10.1001/jamapediatrics.2024.1576
5. Brix N, Ernst A, Lauridsen LLB, et al. *Int J Epidemiol* 2020;49: 834-844. https://doi.org/10.1093/ije/dyaa056
6. Dereń K, Nyankovskyy S, Nyankovska O, et al. *Sci Reports* 2018;8(3625): 1-7. https://doi.org/10.1038/s41598–018–21773–4
7. Dereń K, Wyszyńska J, Nyankovskyy S, et al. *J Clin Med* 2020;9(4): 2-10. https://doi.org/10.3390/jcm9041060
8. Weihrauch-Blüher S, Wiegand S. *Curr Obes Rep* 2018; 7(4): 254-259. https://doi.org/10.1007/s13679–018–0320–0
9. Ohnyev VA, Pomohaybo KH. *Ukrayina Zdorov'ya natsiyi* 2016;4(1): 172-176.
10. Haqq AM, Kebbe M, Tan Q, et al. *Child Obes* 2021;17(4): 229-240. https://doi.org/10.1089/chi.2021.0003
11. Zabolotna IE, Yashchenko YUB. *Ukr Zhurn Dytyachoyi Endokrynolohiyi* 2017;3-4: 9-14.
12. Zabolotna IE. *Klin Profilakt Medytsyna* 2019;2: 36-46. https://doi.org/10.31612/2616-4868.2(8).2019.04
13. Yatsula MS, Nyan'kovs'kyy SL. *Dytyachyy Likar* 2021; 4: 5-11.
14. Menezes CC, Barbirato DDS, Fogacci MF, et al. *Braz Oral Res* 2024;38: e031. https://doi.org/10.1590/1807-3107bor-2024.vol38.0031
15. Sheshukova OV, Veretil'nyk AV. *Visn Ukr Med Stomat Akad* 2019;4(68): 77-82. https://doi.org/10.31718/2077-1096.19.4.77
16. Coll I, Vallejos D, Cuesta R, et al. *J Clin Med* 2024; 13(23): 7283. https://doi.org/10.3390/jcm13237283
17. Dyachuk D, Yaschenko Y, Zabolotna I, Yaschenko L. Georgian Med News 2019;(289): 62-67.
18. Skrypnyk M, Petrushanko T, Neporada K, et al. *Folia Med (Plovdiv)* 2023;65(5): 800-807. https://doi.org/10.3897/folmed.65.e98856
19. Srivastava G, Fox CK, Kelly AS, et al. *Obesity (Silver Spring)* 2019;27(2): 190-204. https://doi.org/10.1002/oby.22385
20. Dâmaso AR, Masquio DCL, Campos RMDS, et al. *Ann N Y Acad Sci* 2024;1542(1): 25-50. https://doi.org/10.1111/nyas.15251
21. Chait A, den Hartigh LJ. *Front Cardiovasc Med* 2020;7: 22. https://doi.org/10.3389/fcvm.2020.00022
22. Prinz N, Putri RR, Reinehr T, et al. *PLoS Med* 2023; 20(1): e1004165. https://doi.org/10.1371/journal.pmed.1004165
23. Leary SD, Ha DH, Dudding T, Do LG. *Community Dent Oral Epidemiol* 2025;53(1): 50-57. https://doi.org/10.1111/cdoe.13006

24. Sheshukova OV, Kuz IO, Kostenko VO, et al. *Wiad Lek* 2022;75(3): 654-658. https://doi.org/10.36740/WLek202203116

25. Maksymenko AI, Sheshukova OV, Kuz IO, et al. *Wiad Lek* 2021;74(6): 1336-1340. https://doi.org/10.36740/WLek202106109

26. Bombin A, Yan S, Bombin S, et al. *Physiol Rep* 2022; 10(7): e15254. https://doi.org/10.14814/phy2.15254

27. Mahboubi Z, Pakdaman A, Yazdani R, et al. *Health Promot Perspect* 2021;11: 271-280. https://doi.org/10.34172/hpp.2021.35

28. Pandey P, Nandkeoliar T, Tikku A, et al. *J Int Soc Prev Community Dent* 2021;11(3): 256-265. https://doi.org/10.4103/jispcd.JISPCD_42_21

29. Roa I, Del Sol M. *Colomb Med (Cali)* 2018;49(4): 280-287. https://doi.org/10.25100/cm.v49i3.3919

30. Ma T, Wu Z, Lin J, et al. *Front Cell Infect Microbiol* 2023;13: 1102650. https://doi.org/10.3389/fcimb.2023.1102650

31. Skrypnyk M, Petrushanko T, Neporada K, et al. *Acta Fac Medic Naissensis* 2022;39(3): 296-307. https://doi.org/10.5937/afmnai39-35901

32. Bezvushko EV, Kostura VL. *Visn Probl Biolohiyi ta Medytsyny* 2015;2: 351-355.

33. Panagiotou E, Agouropoulos A, Vadiakas G, et al. *Eur Arch Paediatr Dent* 2021;22(5): 861-868. https://doi.org/10.1007/s40368-021-00643-0

34. Barbosa MCF, Reis CLB, Lopes CMCF, et al. *Glob Pediatr Health* 2021;8: 2333794X2110012. https://doi.org/10.1177/2333794X211001237

35. Marro F, De Smedt S, Rajasekharan S, et al. *Eur Arch Paediatr Dent* 2021;22(1): 99-108. https://doi.org/10.1007/s40368-020-00534-w

36. Li LW, Wong HM, Sun L, et al. *Adv Nutr* 2015;6(6): 828-841. https://doi.org/10.3945/an.115.010017

37. Araujo DS, Klein MI, Scudine KGO, et al. *Front Pediatr* 2020;8: 429. https://doi.org/10.3389/fped.2020.00429

38. Onyschenko AV, Sheshukova OV, Yeroshenko HA. *Wiad Lek* 2021;74(3): 423-428. https://doi.org/10.36740/WLek202103108

39. Kuz IO, Sheshukova OV, Maksymenko AI, Pysarenko OA. *Stomat Bull* 2022;118(1): 89-96. https://doi.org/10.35220/2078-8916-2022-43-1.16

40. Akimov OY, Kostenko VO. *Ukr Biochem J* 2016;88(6): 70-75. https://doi.org/10.15407/ubj88.06.070

41. Tarasenko LM, Neporada KS, Klusha V. *Bull Exp Biol Med* 2002;133(4): 369-371. https://doi.org/10.1023/a:1016250121896

42. Skrypnyk M, Petrushanko T, Neporada K, et al. *Dent Med Probl* 2024;61(2): 197-207. https://doi.org/10.17219/dmp/157294

43. Deng Q, Wong HM, Peng S. *Heliyon* 2023;10(1): e23782. https://doi.org/10.1016/j.heliyon.2023.e23782

44. Yelins'ka AM, Akimov OY, Kostenko VO. *Ukr Biochem J* 2019;91(1): 80-85. https://doi.org/10.15407/ubj91.01.080

45. Vaziri F, Bahrololoomi Z, Savabieh Z, Sezavar K. *J Indian Soc Periodontol* 2022;26(1): 64-68. https://doi.org/10.4103/jisp.jisp_899_20

46. Maksymenko A, Sheshukova O, Polishchuk T, et al. *Probl Endocrine Pathol* 2024;81(3): 61-67. https://doi.org/10.21856/j-PEP.2024.3.08

47. Williams A, Porter J, Kingsley K, Howard KM. *Pathogens* 2024;13(4): 338. https://doi.org/10.3390/pathogens 13040338

48. Kuz I, Akimov O, Kostenko V, et al. *Probl Endocrine Pathol* 2021;78(4): 34-39. https://doi.org/10.21856/j-PEP.2021.4.05

49. Deng Q, Wong HM, Peng S. *Heliyon* 2023;10(1): e23782. https://doi.org/10.1016/j.heliyon.2023.e23782

50. Jia R, Zhang Y, Wang Z, et al. BMC *Endocr Disord* 2023; 23(1): 119. https://doi.org/10.1186/s12902-023-01366-7

51. Pedersen SD. *Best Pract Res Clin Endocrinol Metab* 2013; 27(2): 179-193. https://doi.org/10.1016/j.beem.2013.02.004

52. Polishchuk TV, Lokhmatova NM, Sheshukova OV, et al. *Wiad Lek* 2021;74(1): 39-42. https://doi.org/10.36740/WLek202101107

53. Rahman B, Al-Marzooq F, Saad H, et al. *Nutrients* 2023; 15(4): 826. https://doi.org/10.3390/nu15040826

54. Kolisnyk DA, Sylenko YUI. *Ukr Stomat Al'manakh* 2007; 4: 22-24.

55. Fintini D, Cianfarani S, Cofini M, et al. *Front Endocrinol (Lausanne)* 2020;11: 200. https://doi.org/10.3389/fendo.2020.00200

56. Zhao P, Xu A, Leung WK. *Biomolecules* 2022;12(7): 865. https://doi.org/10.3390/biom12070865

THE EFFECTS OF OVERWEIGHT AND OBESITY ON THE STATE THE ORAL CAVITY IN CHILDREN AND ADOLESCENTS

A. I. Maksymenko[1], O. V. Sheshukova[1], A. V. Onyshchenko[2], T. V. Polishchuk[1], V. P. Trufanova[1], K. S. Kazakova[1], S. S. Bauman[1], O. A. Pysarenko[1]

[1] Poltava State Medical University, Poltava, Ukraine;
[2] Municipal Enterprise «Children's City Clinical Hospital of the Poltava City Council», Poltava, Ukraine
a.maksymenko@pdmu.edu.ua

The relevance of the problem of overweight is beyond doubt. Obesity in children is not only a medical but also a social and psychological problem of our time. Our country is among the European leaders in terms of obesity prevalence. The results of scientific research show that obesity causes many diseases, including dental ones.

Dental health depends on oral hygiene, the intensity of dental caries and its complications, the impact of various orthodontic problems, the peculiarities of inflammatory processes in periodontal tissues, as well as the presence of concomitant general somatic diseases in the child's body.

Dental health often depends on what a person eats. It has been established that obese children who overconsume cakes, sweets, bakery products, and carbohydrate foods have a strong intensity of caries, as well as impaired saliva mineralization, which indicates an extensive activity of the caries process. The frequency of consumption of sugar products directly affects the intensity of caries development. It has been established that dental caries, together with overweight, is a multifactorial disease that affects the health and psychosocial development of a child.

In recent decades, it has been determined that obesity plays a significant role in the predisposition to periodontal disease and negatively affects the severity of gingivitis and periodontitis. The adverse effect of obesity on periodontal disease may be due to a state of chronic systemic inflammation. Proinflammatory cytokines such as interleukins (IL-6, TNF-α), adipokines (adiponectins and leptins) and other biologically active substances can have a direct impact on the condition of periodontal tissues.

Metabolic disorders play an important role in the pathogenesis of periodontitis. It has been found that in obesity and metabolic syndrome, the structure of the microbiocenosis of periodontal pockets is characterized by a decrease in the number of saprophytic microflora and a significant contamination with periodontopathogenic microorganisms.

Many researchers suggest that overweight patients also suffer from osteoporosis. The problem of osteoporosis is also of interest to paediatric dentists, as it directly affects the bone component of the periodontium. Many studies have shown an inverse correlation between the degree of mineralization and the severity of generalized periodontitis.

Therefore, the analysis of scientific papers confirms the presence of significant pathological changes in the oral cavity in overweight children. Interdisciplinary collaboration between paediatricians, endocrinologists and paediatric dentists will allow for a deeper investigation of the common causes and mechanisms of the pathogenesis of periodontal diseases in obese children, which will further substantiate an integrated approach to the diagnosis, treatment and prevention of major dental diseases.

Systematic literature research was carried out in the following databases: Scopus, PubMed, Web of Science, Embase, The Cochrane Library, MedLine.

K e y w o r d s : overweight, obesity, children, caries, gingivitis, periodontal disease, review.

ВПЛИВ НАДМІРНОЇ ВАГИ ТА ОЖИРІННЯ НА СТАН ОРГАНІВ ПОРОЖНИНИ РОТА У ДІТЕЙ ТА ПІДЛІТКІВ

Максименко А. І.[1], Шешукова О. В.[1], Онищенко А. В.[2], Поліщук Т. В.[1], Труфанова В. П.[1], Казакова К. С.[1], Бауман С. С.[1], Писаренко О. А.[1]

[1] Полтавський державний медичний університет, м. Полтава, Україна;
[2] КП «Дитяча міська клінічна лікарня Полтавської міської ради», м. Полтава, Україна
a.maksymenko@pdmu.edu.ua

Актуальність проблеми зайвої ваги не викликає сумнівів. Ожиріння у дітей — це не тільки медична, але й соціально-психологічна проблема сучасності. Наша країна входить до числа європейських лідерів за поширеністю ожиріння. Результати наукових досліджень свідчать, що ожиріння стає причиною багатьох хвороб, зокрема й стоматологічних.

Стоматологічне здоров'я залежить від гігієни порожнини рота, інтенсивності уражень карієсом зубів та його ускладнень, впливу різних ортодонтичних проблем, особливостей перебігу запальних процесів у тканинах пародонта, а також від наявності супутніх загальносоматичних захворювань в організмі дитини.

Здоров'я зубів нерідко залежить від того, чим харчується людина. Доведено, що діти з ожирінням, які зловживають тістечками, цукерками, хлібобулочними виробами, вуглеводною їжею мають високу інтенсивність карієсу, порушену здатність до мінералізації слини, що свідчить про високу активність каріозного процесу. Частота споживання продуктів з цукром безпосередньо впливає на інтенсивність розвитку карієсу. Встановлено, що карієс зубів вкупі з зайвою вагою — це багатофакторне захворювання, що впливає на здоров'я і психосоціальний розвиток дитини.

В останні десятиріччя доведено, що ожиріння відіграє значну роль в схильності до розвитку захворювань пародонта та негативно впливає на тяжкість перебігу гінгівіту та пародонтиту. Несприятливий вплив ожиріння на пародонт може бути обумовлений станом хронічного системного запалення. Прозапальні цитокіни, такі як інтерлейкіни (IL-6, TNF-α), адипокіни (адипонектини та лептини) та інші біологічно активні речовини можуть мати безпосередній вплив на стан тканин пародонту.

Велику роль у патогенезі пародонтиту мають метаболічні розлади. Виявлено, що при ожирінні та метаболічному синдромі структура мікробіоценозу пародонтальних кишень характеризується зменшенням кількості сапрофітної мікрофлори та значним обсіменінням пародонтопатогенними мікроорганізмами.

Багато досліджень показують, що пацієнти з надмірною вагою теж страждають на остеопороз. Проблема остеопорозу викликає зацікавленість і у дитячих стоматологів, адже безпосередньо стосується кісткової складової пародонту. Багатьма дослідженнями доведено зворотний кореляційний зв'язок між ступенем мінералізації та важкістю перебігу генералізованого пародонтиту.

Отже, аналіз наукових робіт доводить наявність значних патологічних змін у ротовій порожнині у дітей з надмірною вагою. Міждисциплінарна співпраця педіатрів, ендокринологів та дитячих стоматологів дасть змогу глибше дослідити спільні причини і механізми патогенезу захворювань пародонта у дітей з ожирінням, що надалі дозволить обґрунтувати комплексний підхід до діагностики, лікування та профілактики основних стоматологічних захворювань.

Було проведено систематичний пошук літератури в наступних базах даних: Scopus, PubMed, Web of Science, Embase, The Cochrane Library, MedLine.

Ключові слова: надмірна вага, ожиріння, діти, карієс, гінгівіт, захворювання пародонту, огляд.