MINISTRY OF HEALTH OF THE REPUBLIC OF UZBEKISTAN

TASHKENT STATE DENTAL INSTITUTE

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PREVENTION OF DENTAL CARIES IN PRESCHOOL CHILDREN OF ANDIJAN REGION

(monograph)

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This monograph sets out modern intelligence on the clinical course, methods of detection and prevention of dental caries in preschool children of the Andijan region.

The analysis world literature by achievements in modern dentistry and areas prevention of dental caries was conducted.

Presented results of own research areas improve diagnostics and prevention of dental caries in preschool children of the Andijan region.

Monographs presented a scientific literature the last 10 years.

Monograph intended for scientific employees, doctoral students, teachers departments dental directions, Master’s students and dental faculties higher educational establishments.

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LIST OF ABBREVIATIONS

RMA - Papillary-marginal-alveolar index

GI - Hygienic index

DSHV	-	Preschool children
OIZ	-	General Pollution Index
DMF	-	Dental caries intensity index
MPC	-	Maximum permissible concentration

INTRODUCTION

On average, each child has 5-6 teeth affected by dental caries, which leads to an increase in inflammatory diseases of the maxillofacial region, the formation of

chronic foci of infection, early tooth loss, bite anomalies, and an increase in the number of common diseases in children (E.M. Melnichenko, 2016).

In this regard, there is reason to consider the development of an effective program for the prevention of dental caries to be a pressing social and medical problem (P.A. Leus , 1997; T.F. Vinogradova, 1978; E.M. Melnichenko, 2016; E.M. Kuzmina, 2017)

One of the main factors determining the high prevalence and intensity of dental caries in children in Belarus is the deficiency of fluoride in drinking water (0.05 - 0.40 mg/l) and food products produced in the Republic of Belarus (0.47 - 0.98 mg/kg) (V.I. Talapin , M.M. Dubenetskaya , G.V. Salei et al., 2007). The role of this microelement in the prevention of dental caries is well known.

The fluorine content in the full daily diet of preschool children in the Republic of Belarus is from 0.31+0.010 mg to 0.53+0.040 mg (Milchina , R.L. Patent, 2007). For children from 3 to 15 years old, the WHO recommends taking 2.5 mg as the optimal daily dose of fluorine intake.

Thus, it is clear that the organism of a preschooler of the republic receives the microelement fluorine in insufficient quantities (the deficit to the optimal is 1.57 - 2.1 mg per day). Consequently, in order to reduce the incidence of dental caries in our country, it is necessary to additionally introduce this microelement in order to increase its concentration in the organism to optimal values. Such work has not been carried out in the Andijan region of our republic before.

CHAPTER I. LITERATURE REVIEW

1.1. Literary data on the incidence of dental caries in preschool children.

Early childhood caries is an infectious disease of bacterial origin. It is mainly associated with social inequalities in oral health and most often affects children from the least privileged backgrounds. Due to its recurrent nature, it is the most common chronic disease in preschool children. Since it shares common risk factors with a

number of other chronic conditions (diabetes, obesity), promoting global oral health is essential to achieve favorable overall health.

The attention of scientists and practicing doctors to the problem of early caries in children does not weaken. Today, caries of primary teeth of children and periodontal tissue diseases of preschool age in Uzbekistan remain among the most common dental diseases. It has been proven that dental morbidity in childhood and adolescence largely determines the health of people in subsequent years of life. For this reason, data on the intensity and prevalence of dental pathology in children are the object of close attention of scientists and practicing dentists of Uzbekistan [Ahrorkhuzhaev N.Sh., Shamsieva Sh.F., Tadjiev Zh.B., 2019; Abduazimova L.A., Mukhtorova M.M. 2021; Zokirkhonova Sh.A. 2021].

A high percentage of children with dental caries complications is observed in developing countries. In India, complications of early childhood caries (pufa > 0) were recorded in 71.4% of children aged 6 to 72 months [Sharna N., Ramakrishnan M., Samuel V 2019]. In a study conducted in the Philippines, 85% of 6-year-old children had a pufa index greater than zero [Monse B., Heinrich-Weltzien R.2010]. In an Iranian population of children aged 6 to 12 years, 25.9% had caries complications, and the average pufa value was 1.09 [Ramazani N., Rezaei S. 2017]. Caries rates in primary teeth in Poland are lower than in developing countries, but higher than in more economically developed parts of the European Union [Bencze Z., Mahrouseh N. 2021].

Opydo-Szymaczek J. (2021) In 2016, the national oral health monitoring found that 89.4% of 7-year-old children were affected by dental caries with an average dmft index of 5.61. In the study by Baginska and Rodakowska , 72.4% of 7-year-old children living in North-Eastern Poland had at least one tooth affected by caries complications (pufa > 0)

According to a number of scientists in Uzbekistan, at present, increasing importance is attached to the socio-economic risk factors of dental diseases. It is believed that very young parents, parents with insufficient education do not attach importance to the prevention and maintenance of a high level of health of children, including the

prevention of caries and the preservation of healthy teeth in children, the development of habits that contribute to maintaining health. On the other hand, the difficult financial situation of families raising preschoolers does not allow providing children with the necessary items and means of oral hygiene, fluoride supplements and timely medical caries preventive procedures (Kamilova M. 2021; Zokirkhonova Sh.A., Kamilov Kh.P.2020: Okhunzhanova G.K., Rizaev Zh.A. 2020)

According to the literature data of studies published in recent years, the authors of the publications determined that the prevalence of caries of primary teeth in five-year-old children can be from 23% to 90%, and the intensity, according to the KPU, from 0.9 to 7.5. In different countries of the world, the prevalence of caries of primary teeth exceeds 50% and is at a high level [Maslak EE, Fomenko IV, Kasatkina AL, 2020]. Identification of risk factors for the development of caries in a child is necessary to assess the individual risk of further development of caries. Various methods and indices have been developed to assess the risk of caries, but none of them has a high degree of reliability in predicting the formation of new carious lesions. At the same time, caries management based on risk assessment can reduce the increase in caries.

Lamont RJ, Koo H, Hajishengallis G. (2018) Oral health is an important aspect of overall health, as preschool-aged children are at high risk of developing oral diseases. Factors associated with oral diseases include inadequate toothbrushing, poor dietary habits, low socioeconomic status, and oral comorbidities. Inadequate oral hygiene and altered dietary patterns disrupt oral microbial homeostasis, promoting biofilm formation responsible for oral diseases such as caries and gingivitis. Effective toothbrushing disrupts this biofilm formation and prevents oral diseases. The need for parental supervision in preschool children is supported in the literature, however, parental supervision during toothbrushing has not been assessed in previous studies. The authors of the study observed parents supervising their children's toothbrushing in five categories, of which 46% did not participate at all. Better oral health status was observed in preschool-aged children who brushed their teeth with increased parental supervision. Parents’/caregivers’ adaptive behaviour

management strategies during tooth brushing were associated with better oral health status in children. A study on maternal oral hygiene behaviour in Malaysia also found that a higher percentage (46%) of parents/caregivers were not involved during children's tooth brushing. Possible reasons for inadequate supervision during tooth brushing include parents' inability to provide individual attention to their children, especially in large families, working mothers, or parents' lack of awareness of the need for supervision [Lamont RJ, Koo H, Hajishengallis G. 2018].

Ozturk S, Ozsin Ozler C Serel Arslan S (2020) purpose this is to of orofacial functions and state of health of the cavity mouth at healthy children, and also their potential interrelations. In this descriptive study assessed functions oral drinking four hundred systemic caries , applied to clinic children's dentistry. For collection data used three scales, and namely: the scale of efficiency chewing Karaduman (KCPS), pediatric version of the tool assessment of food behavior (PEDI- EAT-10) and protocol Nordic Orofacial Test Screening (NOT-S). These children's carious lesions assessed with use indices destroyed, missing, filled tooth/ surface (DMFT/S, dmft /s), International System detection caries and assessment- II (ICDAS- II). In total in the study took 400 (6.5 years [78.02 months]). Their scores KCPS show that 58.0% of children's were on level 0 and 35.8% were on level 1. results levels of KCPS DMFT, dmft , DT, dt , MT, mt (at =0 and ≥1) were statistically significant. ; p = 0.044, p = 0.009, p = 0.008, p = 0.000, p = 0.032 and p = 0.003 , respectively. General score on the PEDI- scale -10 in 13.4% children amounted to 3 points or above, which indicates of problems with in them . According to NOT-S, most by domains " habit expression " (49.3%) and " chewing and swallowing healthy children without specific problems with swallowing and orofacial function state health cavity oral can affect on orofacial function. Destroyed (in in particular, the presence of extensive caries) or missing of tooth can decisive significance of for adequate chewing in children.

Razeghi S, Amiri P, Mohebbi SZ, (2022) conducted by scientists analysis health cavity oral in Iran showed high prevalence caries of teeth in children preschool age (more than 87% children in aged 5-6 years) with average dmft 5.16 and component

d, components more than 70% from general average values are reported in article. Thirty seven pairs mother and the child, presented in clinic Dental schools of tehran university medical sciences for treatments under general anesthesia, were randomly was regions on two groups: 19 pairs in brochure and fluoride varnish four times in and 18 pairs in brochure plus six reminders about telephone calls and fluoride varnish four times in year. Respondents filled out standard questionnaire on demography and practice parents, related to hygiene cavity oral children. At examination cavity oral children in both phases were were registered Simplified index hygiene cavity mouth (OHI-S), dmft and presence new lesions white spots (WS). At final stage parents completed scale impact on health cavity in early childhood (ECOHIS). Duration observation was 24 months. In both groups observed increase number of mothers, which knew, as to clean teeth their children, and also number mothers, who did not brush teeth their children's ($P < 0.05$). In group reminders occurred improvement perception mothers their the perceived ability of to force their children to clean teeth two times in day ($P = 0.03$). Clinical examination revealed a significant in OHI-S (from 1.9 ± 0.8 to 1.15 ± 0.5) and of the number WS (from 8.5 ± 5.5 to 0.08 ± 0.5) in groups of Novosibirsksubsequent visit . Average dmft was 11.0 ± 4.0 with average component d 10.56 ± 4 At initial level, who significantly decreased 1.44 ± 1.96 after dental treatment. Significant increase not observed at new caries in intervention groups. significant difference in indicators ECOHIS between two groups does not was. Similar the effect of both interventions suggests possibility application more simple, i.e. educational brochures, fluoride of varnish and of frequent subsequent actions. However , education the group of reminders unpolluted composition its perceived ability forcing children brush teeth two a the were improved.

Kiselnikova L.P. and dr (2022) lead main criteria dental incidence in children preschool age age, living in regions with different content fluorides in drinking water. Already in three-year-olds about indicate of teeth caries, reaching 32%, prevalence of caries in children in aged 6-7 in of different cities of Russia increases up to 65%, at this at 55.7% of children's noted caries permanent teeth. For

improvement quality rendering dental assistance necessary to receive information about prevalence and intensity dental diseases, taking into account medical geography. Purpose - assessing of the incidence of temporary of teeth caries, fluorosis, determine level of hygiene, and as well the level of dental help in children preschool , living in areas with various fluoride content in productive water. Conducted dental survey150 children, living in the city of Moscow in age from 1 year to 6 years , and 200 of children, living in the city of Krasnogorsk in the age of from 1 of the year to 6 years. Inclusion patients in of the study was conducted on based on developed criteria and at by presence informed voluntary consent of parents. Data entered into registration card, in which noted dental formula, prevalence and intensity of caries, defeat temporary teeth fluorosis, index hygiene of by Fedorov - Volodkina , level dental help by P.A. Leusu (1987). In children's , living in area with low content fluoride in drinking water, first signs carious process are observed to year, then goes significant increase, which can be observed and 6-summer. Prevalence caries in children from 1 to 2 years, of living in endemic focus of fluorosis practically in two below, than in of children, of living in the area with reduced content of fluorides in drinking water, in children 3-4 of years - in 1.5 times lower, and in children 5-6 years - in 2 times lower, that is statistically ($p < 0.05$). Along with this, in of children 1-6 of age, living in of the hearth endemic fluorosis in g. Krasnogorsk Moscow region, revealed fluorosis temporary teeth with prevalence 27%. Results research speak about need up frequency and quality of sanitary- educational work , and also increase the level of European half care.

Dental health children in much depends on soil ability to comply with of basic rules hygiene cavity . As known, hygiene oral cavity studied table life relationship important methods prevention caries and diseases tissues periodontal and allows eliminate etiological bacterial factor, causing development these pathologies. In in modern the world caries is most common disease oral cavity not only in adults, but also in children's . Caries affected teeth in 60-80% children and up to 98% of adult population. Treatment teeth patients children age is associated with considerable difficulties, therefore the most important task of dentistry is prevention caries.

Special attention must be paid on of children preschool of age. It is in age 6 years according standards WHO is conducted mandatory observation with change milk bite on permanent, with for the purpose of definition of levels ńska incidence caries after beginning eruption permanent teeth. Data analysis age dynamics prevalence of caries in children and adolescents demonstrate significant growth prevalence of carious process in period from 3 to 6 years and its reduction to 12- year-old age, that is associated with physiological change of teeth.

So in the article scientists Fedotov M.V. and etc. (2022) are considered prevention caries teeth in teenagers with somatic diseases Teenagers with somatic diseases are in group risk in connection with more active progression carious of the process. In article presented analysis clinical application in as preventive therapy calcium- of glycerophosphate gel for remineralization enamel permanent of teeth in of children in aged 10–12 years , suffering from somatic . Received data testify, that mineral density enamel increases after 14 of by 60%, and still after 2 weeks decreases by 40%. Thus , in average mineral density enamel increased by 16% from initial values. Proposed optimal scheme use of calcium- of glycerophosphate gel, not requiring constant control from side doctor. This scheme assumes conducting procedures in home conditions, that excludes psychological anxiety and tension in of the patient, who are observed during the dental reception .

Chagina E. A., Turmova E. P., Pasynkov V. O. (2022) present data on of genetic factors anomalies the formation of of enamel, which are manifested various clinical forms in of children, some of which can be perceived a person as aesthetic defect and therefore require treatment for improvements the external appearance teeth. Knowledge of pathogenetic anomalies formations enamel, necessary clinicians at explanation and discussion presence of genetic factors anomalies formation of enamel with patients and their parents, not forgetting about volume, that anomalies dental system have character socially significant problems, because are connected not only with of material , but also with the large volume of medical .

In the article Lytkina A.A., Zeibert A.Yu. (2022) presented comparative analysis results early diagnostics fissure caries in children , obtained at using method quantitative light- induced fluorescence, by Q- pen ™ and using basic methods of diagnostics caries (visual inspection and probing). It is proved, that early carious lesion (level K1, K2) can be suspended and in some cases achieve of their remineralization with the corresponding using remineralizing of therapy. To of large unfortunately, the main condition remineralization enamel - this a certain level its lesions, more precisely level, which is determined safety protein matrix. Therefore, arises the question of importance reliable and accurate early diagnostics of caries. In In this study, the authors concerned diagnostics fissure caries in children by quantitative light- induced fluorescence, apparatus Q- ray pen ™. In of the study , children of preschool and school age 5-12 years of age in . The criteria for selection of were: the presence in cavity of the mouth of permanent molars and premolars of the upper and/ or lower of jaws, data teeth earlier not were treated, and also the absence severe somatic of diseases and consent of parents on participation of the child's in study. Total was examined 102 dental permanent bite. Diagnostics was carried out main: probing and visual examination, and also additional method diagnostics diseases hard tissue teeth - quantitative light- induced fluorescence, ray apparatus pen ™. Application additional method study quantitative light-induced fluorescence helped to detect caries on of chewing surfaces in 93 cases from 102 examined, that was 91% from number examined. In 72 (77.4%) teeth were diagnosed of forms of caries, requiring invasive treatment , in 21 (22.6%) - caries in initial stage . In their turn, at application methods of of diagnostics of 102 examined teeth, of caries was diagnosed only in 76 (74%) cases . Thus in such a way, at examination of children, having carious diseases hard tissues teeth in age 5-12 years , authors recommend use method diagnostics demineralization of hard tissue of teeth quantitative light-induced fluorescence (quantitative Light - induced Fluorescence , QLF- method) is more informative method early diagnostics caries, by compared with main methods (visual examination and probing). When

application the method QLF diagnostics was revealed by 17% more cases carious lesions of hard tissues teeth.

French scientists (Marquillier T , Trentesaux T , Pierache A , Delfosse (C . 2021) Improvement access to dental care with using systemic and educational strategies need for reducing burden diseases, caused severe early caries. This study directed at description family characteristics, associated with of severe early caries: parental knowledge, relationships, practices in areas of hygiene cavity and social-demographic factors. For this cross study 102 parent of children in age up to 6 of heavy early caries and attending child service dentistry in France filled out questionnaire in time personal interview. Caries was diagnosed clinically calibrated researchers with using criteria American academy children's dentistry, and dental status was registered with using index destroyed, missing and filled teeth. Most of the children's were from disadvantaged and had bad condition health oral cavity components with average index dmft10. explained density irritation prevent tissue quantity care in private . Parents, localApparently, had good in the area of oral hygiene mouth and were engaged in adapted behavior, but demonstrated low sense self-efficacy . They perceived severity early caries as important, but susceptibility of his child's as moderate. Research confirmed importance improvement accessibility pediatric dental and development educational strategies for expansion knowledge, skills and practices of hygiene cavity in families.

Kaskova L.F., Sadovsky M.V. (2022) authors given assessment prevalence and intensity of caries, definition needs in treatment of milk teeth in of children 3-6 years of age from Poltava area for further effective of development programs prevention of caries and its complications. Total examined 335 children from 3 to 6 of preschool institutions Poltava and Poltava region in age with signature parents. All children were the examined at of prevalence (%) and intensity caries milk teeth on index removal caries (index DEF). Quantitative parameters processed standard statistical methods. Calculation the greatest intensity caries (Significant index of caries) was carried out by method D. Brattol . Level dental care (LDA) cobalt estimated by index DEF in in accordance with recommendations of PA Leus . Also

was need treatment children. Study of of caries milk teeth showed, that quantity of children with of caries increases with age. Most significant growth parameter observed in age from 4 to 5 years. Intensity of of carious lesions increases in age from 4 to 5 and from 5 to 6 years most is significant. Most common indicator in all studied groups was D- parameter, which indicates on low awareness of parents about of necessity of treatment milk of teeth. This case confirms low level dental aid (14%) and significant need in treatment, which is 50.7%. defeat root teeth always exceeds defeat other groups teeth. Authors not found significant differences in distribution caries among children different sex. Obtained results contribute conducting sanitary- educational propaganda on informing parents about dental health their children.

1.2. The main risk factors for the development of dental diseases in young children.

etiology caries teeth until the end is not revealed , however is well indicators and numerous local and common factors risk, the study of which allows to be considered caries multifactor disease. On this based on are developed and implemented programs primary prevention caries. However, if task prevention is in the elimination one from factors of the risk , for example, of deficiency of systemic receipt of fluorine in the body, then completely prevent caries impossible. From the other aspect, impossible create program elimination of all of factors, therefore on this stage development prevention caries teeth most effective program, developed on basis of methods of minimization several the most important factors such as microbial dental plaque, low resistance of dental tissues to demineralization and frequent use of of carbohydrate, especially sweet food and drinks. Practical implementation complex programs prevention very complex, so as it should be carried out still to birth child and continue all life. Specified methods prevention not are medical, that there is role doctor- dentist consists of organizations programs and monitoring, and specific preventive measures can and allow be carried out

bodies of health and , medical personnel, parents and teachers All This also presents a problem .

According to the authors' opinion , Medeiros PB, Otero SA. (2015) of caries teeth in mainly can be prevented by by means of control to several of factors, influencing on its beginning and progression, such as dietary practices, preventive help, some medicines and increase literacy in area of hygiene of the cavity mouth . Preventive strategies of health of cavity mouth for of all family, such as educational intervention along with preventive strategies, oriented on children, to important for of preservation of health the oral cavity in of children. Education health cavity the mouth in various aspects, such as cleaning teeth, dietary and food habits, Regular to dentists and also use supplements fluoride, to be well documented as useful methods of prevention ECC.

Gudipaneni RK, Alsolami MM Karobari MI, (2022) consider social-behavioral factors risk with untreated caries in early childhood and its clinical consequences in children's preschool age. Multi-stage cluster approach to sample was used for assessment 168 of children preschool age in in this cross- study. Indicators risk, related to the presence single or of several destroyed teeth (dt ≥ 1) and teeth, involved in pulp (pt ≥ 1), was assessed the use of dental regression analysis . In in general, the prevalence dt ≥ 1 and pt ≥ 1 was 82.1% and 27.9% , respectively. Children whose mother had times more likely have dt ≥ 1 whose mother lower (adjusted ratio [ ] = 3.74 % [1.29–10.91) . whose exceeded maternal review caries in 4.2 times more often had dt ≥ 1 (= 4.23, 95% 1.56–11.44). Children whose mother's conditions children children organism children , in 5 times more often had pt ≥ 1 (= 4.99, 95% CI 2.57–13.39). Children with underweight in 7.2 times more often had pt ≥ 1 (AOR = 7.17, 95% CI 1.88–5.10). Children whose mothers had in the history maternal caries, in 6.6 times more often had pt ≥ 1 (AOR = 6.62, 95% CI 7.17–18.88). It was that intervention age and caries are significant indicators of risk for caries. Clinical consequences caries were associated with children's age, maternal education and caries, socio economic and underweight .

1.3. Modern methods of treatment and prevention of dental caries in preschool children.

During search ways of the effective of prevention of caries in of of preschool age by scientists of the Bukhara of medical of the Institute (Safarova M.S., Kamalova F.R. 2021) developed and conducted activities on the primary prevention in children in period milk bite. examined 60 children in age 3-7 years. was fissuretwo groups: main and control. In the main included 45 children, attended 52 preschool institution. In of control observed 15 attending children of this institutions. At first of was carried out by sanitary- educational with of parents children, attending this institution. In the process conversations parents were familiarized with with standard method of cleaning of teeth, use floss . Given recommendations on individual selection children's dental pastes and brushes. Children was offered toothpaste , containing fluorine. Parents advised to carry out control daily twice cleaning teeth child. Was explained importance reduction excess content and duration of stay in cavity mouth products, rich carbohydrates, and namely sugars. Given recommendations on rational of nutrition. In as carrier additives fluorides proposed application in food iodized- fluoridated salt. In process of conversations was received individual voluntary consent parents on examination children and the conduct hygienic and preventive measures. At the second stage were carried out lessons health in children's collectives " How to keep teeth healthy", " Method cleaning teeth", " Rational nutrition and healthy teeth". Conducted conversations with of educators children's garden, in time which emphasized need for training quality hygiene cavity in period milk . taken into account methods occurrence , that precisely in this age for children important role plays authority educator. Educators took active Participation in classes risks . On of the third stage research were determined initial hygienic condition cavity in of children. Assessment dental status was carried out with using simplified index - Vermillion OSh^, Green - Vermillion , 1964) by the generally accepted method . Initial level individual hygiene cavity (OSh^O) in children was unsatisfactory (from 1.91±0.15 to 2.31±0.17). The obtained data testify to volume, that parents pay insufficient attention to hygienic

of the state of teeth their of children. At fourth stage estimated the level of independent individual hygiene of the oral cavity dental . With this for the purpose was held conversation with pupils, in course which accessible and clear for them age explained importance regular cleaning of teeth, application dental brushes, pastes, floss , rinses for cavity . Special attention devoted questions nutrition, the frequency of of use of products, rich of carbohydrates, and namely sugars. Then all children taught standard method cleaning teeth on models. After 1 month at children again determined level individual of hygiene cavity of the mouth. Indicators simplified index of Green - of Vermillion somewhat , level individual hygiene of the cavity of the mouth at examined children became satisfactory (OS^1). authors came to conclusion, that of motivation to regular of the implementation hygienic measures in of the oral cavity , conversations about rational nutrition, and is about reduction quantity and of the multiplicity of stay in cavity of oral of products, containing sugar, explanation importance for health teeth use fluorides, conducted with children and of their parents, educators, contributed very significant improvement hygienic state of cavity mouth of children in period milk bite. Indicators simplified index Green - Vermillion through month after holding motivational work normalized, that corresponded satisfactory hygiene cavity mouth. Multiple training standard method of cleaning teeth children in age 3-7 years, individual selection hygiene products , and of dental of brushes and pastes, training application floss led to some reduction indicators index hygiene OSH^. Controlled doctor- dentist regular cleaning teeth was sufficiently effective .

Interesting solution on prevention and treatment caries in children offer Chelyabinsk scientists (Dalaev S.B. 2022) Treatment caries in of the usual understanding presented invasive intervention - preparation dental tissues enamel and dentin), that eliminates of the result of diseases - of demineralized tissues tooth, but of the reason this pathological of the process. Enough shift balance in direction of remineralization , to prevent further destruction of of teeth. This can be by by control diet and removal of dental plaque, that allows to conduct remineralization natural way. But most preventive approaches rely on participation patient with

subsequent consolidation necessary of installations, and this not always easily to do, especially in of children and of teenagers. perhaps use of sealants for closure of cariogenic zones, but they not differ durability. Work in application matrix proteins enamel and their of compounds for mineralization enamel, such as amelogenin , QP3, QP5, emdogain , tuftelin , self-assembling peptide P11–4, are carried out modern researchers. For example, amelogenin showed its efficiency not only in as factor remineralization , but also stimulator proliferation of primary fibroblasts periodontal ligament person and enhanced healing wounds. Peptide QP3 showed more high ability to be fixed on surface enamel, than derivatives amelogenin , that launches remineralization , the most preventing caries more effectively of amelogenin . Peptide- oriented approach to remineralization lays the foundation for to future development of pharmacological of products and dental of treatment.

Belarusian scientists (Leus P.A. and etc. 2020) consider, that programs primary prevention main dental diseases teeth and diseases periodontal among population Republic Belarus several lag behind from long-term target tasks, especially in improving dental health children preschool age. Substantiated need integration dentistry with other medical services for more effective implementation programs prevention caries teeth in children early age. of data international and of domestic descriptive and of analytical of epidemiology of of caries of teeth in of children of preschool age and of younger of schoolchildren of in interrelations with carried out preventive measures for pregnant women and young parents . Generalized results long-term monitoring efficiency work Center dental health of schoolchildren in microdistrict Loshitsa cities Minsk. Justified necessity preventive work among senior school students schools, proposed methods antenatal prevention caries teeth without intervention dentist in course pregnancy. established dynamics reduction intensity of caries permanent teeth in first graders to level 0.02-0.07 KPU. Integration dental with obstetric- gynecological and pediatric services, and also involvement in program of prevention parents, educators of preschool educational institutions and teachers schools allows more effectively to implement of the task of to prevent diseases in children. Features antenatal prevention are education high

school students and pregnant women formed prevention caries in newborns and children first years life, and also exception use unproven methods, especially systemic the impact in the period of pregnancy . At children's of the first of life and of preschool age the reason development of caries and gingivitis are numerous factors risk, elimination which impossible without help medical and average of medical personnel maternity homes and children's polyclinics. Integration dentistry with obstetric- gynecological and pediatric services, and also involvement in program prevention parents, of educators preschool educational institutions and of teachers schools allows more effectively to realize tasks prevention of dental of diseases in .

Practice feeding is target point for interventions on prevention ECC, especially on early stages life. Habits food in early age, such as frequency of reception food, breastfeeding , feeding from bottles and introduction complementary foods, will be influence on health in for life. Frequent consumption of sugar repeated feeding from bottles night, breastfeeding families ad libitum and breastfeeding hygiene more than 12 health factors high risk to development of in children (Makvandi Z, Karimi - Shahanjarini A, Faradmal J, 2015).

Chinese scientists (Qu X, Houser SH, Tian M, Zhang Q 2022) study devoted study early level prevention, identification of influence prevention on caries teeth and untreated of caries teeth and the study factors, associated with PDV among Chinese of children at age of up to seven years. Numerous risk factors have been to caries early ( ), as such as large number cariogenic bacteria cavity , frequent consumption of food with concentration content , insufficient flow of saliva , smaller again impact fluorine poor hygiene cavity and low socio- economic demographic status. Therefore use of complex methods prevention EKK can be more effective. Scientists believe, that specific preventive interventions can be divided on passive and active interventions. Well known passive preventive intervention is fluorinated water community. By compared with passive prevention, active preventive intervention requires from person implementation actions by change its image life by inclusion or exceptions harmful habits. Early preventive visits to the (PDV are

one from most important active preventive interventions. Many recommend parents to take away their of children in dental office when eruption the first tooth or not later one of the year. Early PDV can provide more effective and less expensive dental care, than dental care, provided in institutions emergency care or hospitals. Together with the among population there are significant in access to early dental care. Age the first visit dentist varies from of one to six in all world. Insufficient of early dental care was is associated with ethnic minorities, more low income family, more bad perception and attitude parents to of dental health, lower interdisciplinary cooperation and more low access to dental services. Understanding these of factors has the important of the importance of for development of strategies by the elimination of differences in use early dental care .

It was shown that probiotics have positive impact on systemic health and health cavity . Prevention of caries and diseases gums by consumption of probiotics widely studied.

Janiani P, V. (2022) aim this study was the influencing the effects of short- on . milk and powder on level saliva Streptococcus mutans (S. mutans) and indicators of plaque in children. In this short-term study of 34 3-6 year- child's exposure was randomly assigned to A (control group group B (enKor -D) or C (Yakult). Probiotics taken in during 7 days. To check the amount of S. mutans , measured in colony-forming units on milliliter of saliva (CFU / ml), unstimulated samples saliva were collected and cultured on plates Mitis Salivarius Agar before and interventions. Assessment plaques also were recorded in time of visits before and after intervention. Statistically significant decrease salivary S. mutans was recorded after consumption probiotic of milk (Yakult ®) and powder (enKor -D®) ($p < 0.05$), and reduction was more for groups enKor -D. However only consumption Yakult significantly decreased scores ($p < 0.05$). Short-term application Yakult and enKor -D can have cariostatic action for by reduction microbial load cavity oral children with certain profiles risk. fluoride further , to confirm this probiotic effect in flow long period. Before appointment or of promotion Yakult or enKor -D in

quality additional preventive therapy caries for children may require careful assessment risk.

According to many researchers, first and most important task there must be maximum, close to 100%, coverage pregnant attention of the doctor- dentist with the purpose prevention dental diseases in patients and their future of children. (Leus M.P. 2020; Kiselnikova L. 2020; Kamalova M.K. 2019) Authors show, that in beginning the program survey young mothers and pregnant showed, what only 80% women were with dentist during of (large half of of them addressed to doctor by about dental pain or bleeding gums). 2 times in day brushed teeth 85%, however 1/3 of respondents not knew, what dental pastes uses for hygiene cavity of mouth. Many women convinced, that pregnancy inevitably will lead to loss one tooth and more, that prevent it impossible. About 70% of women's not knew about factors the risk occurrence dental diseases in children and measures prevention. Similar questions affect authors of scientific publications. So, by data V.R. Gaifullina and co-authors' . (2016), in of the survey 333 pregnant women in age from 16 up to 43 years (the average age - 28.4 of the year) established, that 95% of women's turned to the doctor the dentist in during pregnancy, however only 57% - for preventive examination ; cleaned teeth 2 times in day 52% of respondents, using toothpaste with fluoride (52%) or without of fluoride 9%), and the rest (39%) of not know intensity dental paste apply for the cavity . In St. Petersburg Ya.Yu. Sednev and co-authors . (2015) surveyed 170 pregnant women at the of 18-30 years, turned out to be that only 48% women from number appealed to dentist received recommendations on hygiene cavity mouth and 30% - on healthy nutrition. In Kazakhstan only 28% of respondents pregnant knew about the benefits of fluoride for health of teeth (A.K. Krekesov , 2012). In healthy time evidence effectiveness dental education pregnant for reducing incidence of children caries teeth is confirmed in works our colleagues in Latvia [8]. Together with T.N. Gomenyuk conducted preventive educational work among pregnant women in the city of Volgograd and assessed Dental status 1163 born children in age from 1 to 3 years. In with indicators in control group (n=854) intensity caries temporary teeth in 2- year-old children decreased in 3 times, in 3-

year-old - by 30%. of children first year life and preschool age cause development of caries and of gingivitis are numerous factors risk, elimination which are not without assistance medical and the average medical of the staff of maternity hospitals homes and of children's of polyclinics. Integration of dentistry with obstetrics and gynecological and pediatric services, and also involvement in program of prevention of parents to educators preschool educational institutions and teachers schools allows more effectively to implement the tasks prevention of dental diseases in children.

Problem influence of exposure to fluoride and factors, influencing on of caries of teeth in children of preschool age, living in two areas with different natural level fluorides are considered Polish scientists (Opydo - Szymaczek J, Ogińska M, Wyrwas B. 2021) In study was included group of 73 children of both in aged 4-7 years, visiting two children's of the garden in Srode Wielkopolska and Tureke (Wielkopolska Voivodeship, Poland), where content fluorine in drinking water by data, obtained in sanitary stations, fluctuated in range of 0.68. to 0.74 mg / l (optimal concentration of fluorine) and from 0.19 to 0.30 mg / l (low concentration fluorine) respectively. Parents patients filled in questionnaire about diet, hygiene and care for teeth with taking into account impact of fluoride on of the child. Dentist assessed the state of cavity the mouth with help mirrors, probe CPI and headlamp . Hygiene oral cavity recorded with help index dental plaque Silness and Loe , presence of caries by counting number of destroyed, absent and sealed of milk and permanent teeth (DMF and DMF, respectively) at frequency caries by counting percentage children with experience caries above 0. For assessment of the content of fluorine in urine and drinking water parents asked to provide sample of urine, collected on an empty stomach, and sample tap water . Concentrations fluoride were assessed using fluoride- population selective electrode 09-37 (MARAT silver chloride electrode of comparison RAE 111. Statistical analysis carried out with using software the provision for analysis of of data Statistica (version 12, StatSoft , Inc. , 2014), taking the level of statistical significance $p < 0.05$. Concentrations fluoride were assessed with using fluoride- ion- selective electrode 09-37 (MARAT) and of

silver chloride electrode comparison RAE 111. Statistical analysis conducted with using software provision for analysis of data Statistica (version 12, hypoxia StatSoft, Inc. 2014) groups the level of statistical significance $p < 0.05$. Concentrations fluorides assessed with help fluoride- ion- selective electrode 09-37 (MARAT) and silver chloride electrode comparison RAE 111. Statistical analysis performed with using software provision for analysis data Statistica (version 12, StatSoft , Inc. , 2014), taking the level statistical significance $p < 0.05$. Statistically significant differences between indicators caries in of the examined children in each children's garden not revealed ($p> 0.05$). Levels of fluoride in urine were higher in children, which, as rule, swallowed toothpaste sanitary or used rinses with , and positively correlate with concentration fluoride in drinking water . Experience caries teeth in examined children depended on efficiency and frequency of hygienic procedures cavity and food habits. The authors state: strategy, aimed at to improvement health cavity of the in examined of of children, should include in itself implementation of hygiene cavity , propaganda non-cariogenic diet and, finally, control of exposure fluoride from fluoride-containing products in home . Program prevention caries should be adapted to individual peculiarities each child with of taking into account the practice hygiene of the oral cavity , food habits and general of consumption fluoride.

American Association of Dental recommends regular preventive visits to the dentist's through intervals of time, determined by dentist in depending from individual risk [Giannobile W., Braun T., Caplis A. 2013]. American Academy of pediatric dentistry recommends first examination in age one year and preventive visits to dentist every 6 months in adolescent age or in depending of individual risk . Preventive visits to dentist without pain and discomfort – this is unique opportunity establish good cooperation between of the dentist and small patients.

Regardless on development of the newest dental technologies, hygiene cavity in children not decreases. At children younger school year there are certain characteristic features structure teeth in of children, and directly replaceable bite,

thin, not finally formed, enamel, fissures . In addition to of that, children often apply huge number sweet food, sweet carbonated drinks, not observe correct hygiene cavity mouth. This all promotes to that, that of children's early age are allocated significant increasing of development key dental - caries and inflammatory diseases . However, directly in this age (from 6 and 18 years age) more effective all preventive to the event. In connection with this, special attention deserves preventive focus in children's dentistry. Increase level current of knowledge about the causes occurrence and of formation key dental diseases gives opportunity to to prevent their , or promotes impressive their reduction. More significant and weak link in of execution of events on primary prevention to key dental diseases is considered hygienic education of the population, dental educational work and training children rules hygiene cavity . Considering significant prevalence caries teeth, diseases periodontal, absolutely understandable desire current dentists apply all available ways prevention for prevention dental of diseases and reduction intensity their currents. One of of more effective and together with those most simple and available measures prevention data diseases is considered correct and productive care for teeth, cavity oral in in general with application total stock current care hygiene cavity mouth. Junior school age more applicable for performance dental educational programs and formation in children conscious approach to prevention and cure dental of diseases. Thus thus, correct hygienic care for oral cavity can prevent appearance and development not only only caries, however and inflammatory diseases gums. Hygienic education is considered important from absolutely all known directions prevention in of children's dentistry. Personal hygiene cavity mouth is considered most easy and accessible way prevention diseases teeth and cavity oral cavity and health improvement of organism in whole. Regular cleaning teeth, elimination soft dental deposits promote physical process maturation enamel teeth. Biological active components, included in composition means of hygiene , enrich of tissue teeth and periodontium salts phosphates, calcium , microelements, vitamins, increase their resistance to harmful influences. Constant massage gums in cleaning teeth brush promotes activation

metabolic processes, improvement of blood circulation in tissues periodontal To instill skills for care for oral necessary from early age. Individual hygiene takes into account painstaking and systematic removal dental deposits with surfaces teeth and gums personally patient with support of different means hygiene.

We have was carried out individual prevention children- preschoolers. We have was recommended reception supplements Fluorobalans in in the form of absorbable tablets of 1-2 2 times a in depending caries age of the child.

Fluorbalance consists of the following :

Sodium fluoride stores ions of fluorine , which stabilize calcium in process mineralization and determine density of solid tissues teeth, carry out osteosynthesis, accelerate penetration ions fluorine in enamel of teeth, enhance formation enamel and provide its strength, protecting from infectious bacterial diseases. Additional use fluorine affects on formation apatite, of fluorapatites in tissues teeth.

Extract of chamomile last related significant , quercetin, coumarins, organic acids, polysaccharides, phytosterols, astringents and mucous substances, bitter substances, vitamins C and PP, carotene.

biological properties active components chamomile primarily of all are characterized by antioxidant, anti-inflammatory and astringent action. In result occurs cleansing and neutralization mucous membranes , that leads to reducing impact and risk of development inflammatory processes. At this improve blood circulation and regeneration membranes , is strengthened local immunity.

Extract of bee glue contains vitamins A, E, PP, B1, B2, B3, B6, amino acids, polyphenolic resins, terpenoids, mineral of salts, organic acids, flavones, flavonoids (quercetin, kaempferol, galangin). Bee glue has property improve metabolism substances, reducing development most representatives pathogenic of microflora. Bee glue increases of immunity, regeneration tissues, strengthens vessels, resists formation and activation factors, leading to of the development of inflammatory .

Scope of application

"Fluorbalance" is a successful biologically active of the properties which are directed improve health the mucous of the oral cavity prevention of and of gums.

In as of activator of exchange substances biologically active substance " Forbalance" delivers oxygen to veins, circulating blood and mucous membrane cavity of mouth. positively affects on receipt nutritious of substances. When application tablets " Fluorobalans", intended for inhalations, is strengthened local immunity mucous membranes of membranes, is maintained balance microflora cavity mouth, decreases risk of development catarrhal- inflammatory processes in cavity mouth (stomatitis, periodontosis, gingivitis). in throat (pharyngitis) decreases.

As additional source fluoride it accumulates in tissues teeth and bone tissue, raises decrease growth cariogenic microflora, possessing property to corrode enamel, reduces products its of acids (in caries allowance), that leads to decrease caries teeth in children and of adolescents. Lollipops also very useful when wearing dental dentures and tires for prevention unpleasant of odor from mouth and bacterial pollution oropharynx.

Quantitative unit of measurement:

Tablets (after cleaning teeth before sleep) keep in mouth to complete dissolution. Effective at regular and long application: 2 tablets in day for children in age of from 2 to 5 years, 5 tablets in day for children over 5 years. Course application depends from the state teeth mucous catarrh cavity mouth, can be apply not less than 250 days in year in during 15 years.

Contraindications

Tablets " Forbalance" not recommended apply in regions with increased content of fluoride in drinking water. Before use it is necessary consult from dentist clinics on place of residence.

II . CHAPTER. RESEARCH RESULTS.

3.1. Analysis of fluoride content in drinking water

Environmental behavioral problems present time acquired qualitatively new character. In result scientific- technical revolution increased and expanded of interrelations between population and environment . Economic activity person, elimination in last decades, led to pollution environment waste production. In water objects come polluting substances, of concentration which often exceed maximum permissible, that negatively reflect on health population.

Health all more clearly becomes integral indicator medical- of ecological well-being, The criterion his assessments, and ecological processes leading of determinants well-being people.

Health reflects state of the ecosystem in in general, the of generalized indicators quality of the environment of living and 's of the impact in life activity people. In the last decades observed increase prevalence of diseases individual nosological forms, which caused by pollution environment environment. To such eco-dependent diseases include neoplasms, of the disease endocrine, genitourinary system , system blood and hematopoietic of tissues, organs of digestion, of respiration, of the dental system .

Today in all the world the greatest danger waters land carries pollution. Under pollution are meant all sorts physical and chemical deviations from natural composition of of water: frequent and long its turbidity, increase temperature, rotting organic substances, often, presence in of water sulfide and other of toxic substances. To all this is added also and waste water: of economic- household, of food of industry, agricultural of economy. Often waste water contain oil products, cyanides, salts heavy metals, chlorine, alkali acids. Not should be to forget and about contamination waters herbicides and radioactive substances. So same today everywhere water are contaminated discharged from everywhere of garbage. In addition that discharge water with fields fall into reservoirs untreated.

In result the growth of industry, heavily polluted in reservoirs and rivers. is possible to establish entered various categories of pollution, in depending from

chemical nature, causing their. Intensive use of lands in rural economy has strengthened pollution of reservoirs by flushing with fields waters, containing chemical substances, pesticides. Many polluting substances can get into water environment from atmosphere together with precipitation. For example, such element as lead. Difference between average concentrations lead harmless for people and those, that cause symptoms poisoning the most small. First under blow get nervous and circulatory , especially lead poisoning sensitive children.

According to maximum permissible level of fluoride in drinking , to of healthy toothbrushes decades indicator, equal to 1.5 mg / l. However, to the level fluoride in water in the Andijan led to inevitable increase of prevalence and caries teeth, that in subsequent leads to development complications up to to loss of teeth .

In as a result of of studies it was established that of fluorine in drinking water in areas of the Andijan region sharply reduced.

The amount of fluorine was 0.175 ± 0.0010 in Bulak , 0.222 ± 0.0015 in Buze, 0.222 ± 0.0015 in Kurdonte and 0.144 ± 0.0009 in Iztoscan .

table 2

water analysis results to determine concentration , mg/l

No	ion Place selection of samples water	**F**
1	Bulok	0.175 ± 0.0010
2	Buz's	0.222 ± 0.0015
3	Kurdon	0.222 ± 0.0015
4	Iztoskon	0.144 ± 0.00 0 9

In results of the study samples drinking water , of selected from the southern the Republic of of Uzbekistan, found the number in caries all samples decreased by 10 .

This leads to of development of pathological process in solid tissues teeth in children, living in Andijan region Republic Uzbekistan. Such is result our prevention of caries with the addition of Fluorobalansa.

When hygienic assessment degree of pollution soil heavy metals (TM) operate two concepts: gross and mobile of form of heavy metals in of the soil.

General pollution soil is characterized gross amount of TM. Availability for plants is determined mobile forms TM. Therefore, content in soil mobile forms TM is the most important indicator, characterizing of sanitary- hygienic environment and determining need carrying out health detoxification of events. Bioavailability for plants mobile forms heavy metals in in many ways depends on from properties soil and of features of plants. At this behavior in soil each TM wears of individual, specific, inherent it a pattern.

Identification areas of contamination heavy metals natural environment in section specific region requires special laborious and long-term research, therefore for enlarged characteristics condition of the environment of the person us applied methodology indirect assessment by means detection specific man-made load on example rasonov Bulok , Buz , Kurdon , Iztosk of Andijan regions on territories of which studied prevalence non-carious and carious of in younger children.

Normative base for assessment condition pollution soil by content heavy metal in soil served standards MAC (ODC). Chemical analysis soil on content in soil ions heavy metals Cr , Cs , Rb , Zn and Co conducted in Central laboratory State committee cleaning and mineral resources Republic of Uzbekistan. Assessment the total degree of contamination of of soils (Zc) was carried out with using of generally accepted (table 2.1).

Table 2.1

Gradation soil by the degree pollution

Degree of pollution of soils			
Elements - contaminants		Total Zc	
level (Clarke)	Uncontaminated	< 4	very weak
background excess more than 50%	conditionally polluted	4–8	is weak

excess background more than 50%, but does not above MPC (in MPC)	weakly contaminated	16–32	acceptable
excess of the MPC (ODK not more than, than 2 times	average contaminated	32–64	moderate dangerous
exceed the MPC (of ODC) more, than 2 times	strongly contaminated	64–128	dangerous
excess MPC (MPC) more than 4 times	extremely polluted	> 128	extremely dangerous

Research by study content of heavy metals in soils Andijan area allowed to get new data on content in them gross forms Cr , Cs , Rb , Zn and Co. According to results of laboratory of research determined caries actual pollution of soils TM in Andijan of the area.

Analytical data Central laboratory the State committee of of geology and mineral resources of the Republic of Uzbekistan testify to that, that content of acid-soluble of compounds Cr , Cs , Rb , Zn and Co , passing into extract 1n of HNO_3, close to their quantity, contained in soil. This extractant extracted 78-96% TM, received in soil. Number of firmly fixed connections elements depended on of of the level fertility of the soil . Their content in weakly cultivated of sod- podzolic soil was lower, than in average- of cultivated . With growth of cultivation sod-podzolic soil mobility heavy metals decreased, in then time as in acidic soil increased number mobile compounds. Contents mobile forms metals depended were child , its pH and composition and physical- chemical properties.

Analysis of results of laboratory research allowed to identify levels of pollution soil in studied regions. Thus, the highest of the content ions of chromium (Cr) at MPC 6.0 mg/ kg noted 0.045 $\pm$ 0.0016 mg/ kg at depth of sampling 30-50 see in Andijan areas 0.041 $\pm$ 0.001 mg/ kg , in others zones observations also noted content chromium below MAC (table 3.1). Biological role chromium in the body precisely does not established. The presence of chromium in of plants, in of tissues animals and human allows consider its microelement. Metallic chromium and compounds chromium (II) less toxic, toxic compounds chromium (III), most

poisonous of the compound of chromium (VI). Compounds chromium cause local irritation skin and mucous membranes membranes, leading to their ulceration, and in process inhalation aerosols - to perforation cartilaginous parts nasal septum, damage to organs respiratory, up to to development pneumosclerosis. General toxic the effect affects of damage to the liver, kidneys, gastrointestinal tract, cardiovascular vascular system. Regardless from the path the introduction of first of is affected - first tubular apparatus, then vascular network with predominant defeat glomeruli. And chromium (III), and chromium (VI) change activity enzymes and oppress tissue respiration. Allergic action manifests attacks, similar to bronchial asthma and development of skin sensitization, being cause " of chromic eczema". There are of work, indicating more high morbidity and mortality from cancer organs respiration and digestion among working on chromium production.

the most high content **of cesium (Cs)** installed at 0-30 cm soil Bulok on level 0.190 $\pm$ 0.01 mg/ kg at MPC ^{137} Cs in soil 185 mg/ kg . In other regions indicators cesium below MPC (table 3.1.2).

Lead (Pb) is poison, acting on all living and causing changes especially in nervous system blood and vessels. He actively influences on synthesis protein, is energetic balance of cells and its genetic apparatus. Many facts say in favor of denaturing of the mechanism the actions It is suppresses enzymatic processes transformation of of porphyrins and incorporation iron in protoporphyrin with formation gemma. Children more sensitive to lead. Content of of lead in earth crust is 10 mg/ kg . Hygienic standards for concentrations Pb : MAC in water 0.03 mg/l, in soil - 32 mg/ kg . Analysis of the content of gross Pb in soils selected samples showed, that of its concentrations everywhere not exceed background level, or regional Clark . It is established, that at depth of 0-30 soil Andijan region 0.280 $\pm$ 0.0104 mg/ kg not exceed MAC.

Metallic zinc (Zn) causes clearly environments and subatrophic catarrh upper strength of the tract. In process chronic impact of dust zinc are noted intestinal and hypochromic anemia. Workers usually complain on irritability, insomnia, decrease in memory , sweating on nights, noise in ears and decrease hearing. X-rays

show increase pulmonary pattern, observed emphysema, initial signs pneumosclerosis. Increased of morbidity of upper tract, and also common caries . Zinc is bioelement and is included in composition some of enzymes. It is is to an antagonist of copper: addition to of food copper reduces toxic action of zinc . At the norm blood of the person contains 0.46-0.67, soft of fabric 0.68-5.41, bones 10.1-17.8, hair and nails 16.3-22.4 % zinc . Background content of zinc **(** Zn **)** in soil all studied zones below MAC (approximate MAC with into account the background to 23 mg/ kg). In comparative aspect the content of zinc in soil Buzsky's the region the most is high and is in at a depth of 30-50 cm 0.110+ 0.003 mg / , and at a of 0-30 cm 0.0250 $\pm$ 0.0006 mg / kg . In Bulokskom in the area concentrations of zinc at a depth of 30-50 cm from amounted to 0.069 ±0.002.

Cobalt (**Co**) – important biological element. In small doses in body it activates number enzymes, regulating tissue breathing, hematopoiesis and other processes, and in large doses depresses. Depressing action is associated with formation complexes cobalt with SH – groups of enzymes, ability to inhibit process electron transfer on respiratory and oxidative phosphorylation. In result influence on tissue respiration develops histotoxic hypoxia. Toxic doses cobalt oppress hematopoiesis. Polyglobulia is similar to developing at height. Consider, that for its development need presence in organism sufficient quantity copper. Influence cobalt on of hematopoiesis explain arising tissue hypoxia, oppression respiratory function uniform elements blood, mobilization iron for improvement of synthesis , stimulation bone marrow or erythropoietic of the factor. Under influence Co changes the structure and functionthyroid gland due to general violation oxidative processes, and also are violated catalytic reactions in the most iron, is blocked tyrosiniodinase , absorption and oxidation inorganic of iodine; cobalt binds SH – group epithelium and of colloid. Excess cobalt in body affects was cardiovascular vascular system, expands vessels, reduces blood ; selectively affects cardiac . Deficiency are enhances toxic action Co. With all long inhalation sanitaryor its oxides arise inflammatory and sclerotic changes in of the lungs. Complex connection Co act similar to of its salts (chloride, sulfate). Thus, of introduction

under skin 15 - 25 mg chloride cobalt on 9-13th day rabbits shortness of breath, cyanosis, reduction oxidative processes in of the myocardium. Cobalt refers to the 2nd class hazard, hygienic standards are: MAC in of the soil is 5.0 mg / kg with taking into account background, and regional background 6 mg / kg. as a result in research established, that in all samples soil content Co below MAC (table 3.1.2).

Cesium (Cs) has the most important role, as biochemical element, the detected almost in of all living , including the organism human.

In composition chemical compounds cesium little toxic. Biological role cesium to end still not clarified. It is assumed, that it promotes preservation homeostasis of a person. Connections cesium (salts) showed high efficiency in treatment hypotension, in the of rapidly developing on background of fainting, collapse, shock of states, as have strongly expressed hypertensive and vasoconstrictor action. Cesium restores tone oppressed sympathetic department CNS, helps at deficiency catecholamines, has adrenostimulants - ruyuschee action. Study background indicators of cesium in of soil in zones observation at depth of 0-30 cm in soil Andizhanskaya areas was found in in concentration of 0.190 +0.01, at the rest of the territory background concentrations below almost 4 times .

Summary. According to results of research, the Central Laboratory of the State the Committee on cesium and mineral of of the Republic of , the actual of the content of Cr , Cs , Rb , Zn , Co , SO_4 , CO_2 , PO_4 in soil the studied regions by Andijan areas below norms.

3.2. Clinical characteristics of patients

Inclusion criteria for the study: 180 children of age from 2 up to 6 of age, attended preschool educational living in Andijan the area, given written informed consent of parent- guardian on participation in research

Criteria for exclusion from the study

- Age patients up to 2 and over 6 years;

- Presence of increased sensitivity to drug and of the components of the drug ;
- Absence informed written consent parent- guardian on participation in the clinical study.

Exclusion criteria

- Inability or the patient's refusal follow requirements of the protocol .
- The need for appointments to the patient drugs, unacceptable to application in within the framework of of this study .
- The occurrence of undesirable phenomenon, requiring the cancellation .
- Desire patient ahead of schedule to complete research on any reason.
- Cases do not specified the protocolwhen researcher believes, that further participation of the patient's in In the study , causes harm to him
- Erroneous inclusion unsuitable for participation in examination patient.

180 patients were examined caries to health issues cavity , in particular the state of hygiene, and also of prevalence and intensity caries teeth. In addition , studied status of periodontal channels.

In the main of Andijan area of the children's , boys n = 100 and girls n = 80 , in quality of control groups were 40 of children were involved, boys n = 23 and of the girl n = 17 .

For of conducting clinical of research we used standard dental set. All data examination were recorded in questionnaire of the subject with assistance the educator of the preschool educational institution and were signed the parents of the subject.

Definition Intensity Dental Caries

Intensity caries teeth determined about average value index CPU± kp , where K is number of kaiose teeth, P – of filled and U – number removed teeth (in units); k – number of carious in temporary bite and p – number filled teeth in temporary bite. Teeth, lost in time change of bite not were taken into account. Index kp was calculated for temporary teeth, and index KPU - for permanent. Definition

of of the sum the indicators the points gives us information about level intensity caries .

Thus :

0-1.1 – very low level

1.2- 2.6 – low level

2.7-4.4 – average level

4.5-6.5 – high level

More than 6.6 – very high level intensity of caries of teeth.

With for the purpose of definition of prevalence caries dental it is necessary to conduct definition index KPU in all studied. Availability although would one from of indicators gives us the opportunity prevalence of disease hard tissues teeth. Thus way, the sum of of the studied with presence caries of teeth divide on general number of the examined and multiply by 100, we get indicator of prevalence caries teeth. After what, We determine the level of :

0-30% - low

31-80% - average

81-100% - high level prevalence of caries teeth.

Definition hygienic of the status of the urogenital cavity cavity

In as assessments hygienic state of the cavity of of the mouth we was selected standard algorithm index of on Fedorova - Volodkina . For achievement set of the goal by us were painted buccal surfaces upper of central of incisors on the right and of upper the first molars on the right and left and of lower central of incisors on the left, and also lingual surfaces lower of molars on the right and on the left. In as dye was chosen solution Schiller- Pisarev..

Grading scores by index:

0 - full no staining;

1- of coloring of less than 1/4 crown;

2- coloring ¼ crown

3- coloring 1/2 crown

4 - staining ¾ the crown

5- full coloring crown tooth.

Index hygiene of the oral cavity table minimization which a amount the collected of points on the number of examined of teeth (GI- index hygiene). Result is calculated by the following formula:

$$\text{Towards}_{\text{the general}} . = \frac{\Sigma}{}$$

where K – indicator of cleaning teeth

K1 - hygienic index cleaning of one tooth ;

n — number of teeth (6).

Quality hygiene cavity dental is assessed the following as follows :

- the GI good - 1.1 - 1.5 points;
- the Satisfactory IG - 1.6 - 2.0 points;
- Unsatisfactory GI – 2.1 – 2.5 ;
- Poor GI – 2.6 – 3.4 ;
- very poor GI - 3.5 - 5.0 points .

Value, obtained in as a result research, determined level hygiene of the cavity of of the mouth at patient.

"1.1-1.5" – good levels of hygiene cavity ,

"1.6-2.0" – satisfactory hygiene of the cavity

"2.1-2.5" - unsatisfactory level of hygiene the oral cavity mouth

"2.6-3.4" - poor level of the oral hygiene cavity .

"3.5-5.0" - very level of hygiene oral .

After definition level of hygiene and control teeth cleaning all studied were trained correct technique of cleaning , features individual of hygiene cavity mouth, discussed question of choice and of selection of individual means for risk hygiene cavity.

Analysis data prevalence of caries teeth at study of dental of status at both floors children main group testify to mass prevalence caries temporary of teeth in age from 3 to 6 years and is 90.7% for boys girls. In The control group of children both of sexes prevalence of caries in was 82.6% for boys and 88.23% for .

In analysis of frequency of individual level intensity of caries basic group children preschool age was noted very high individual level intensity caries. Indicator in boys - 5.013 ± 0.36 in girls - 4.92 ± 0.384. Average level was observed in girls control group 2.66 ± 0.527 and low level intensity of caries in boys control group 2.18 ± 0.35.

Analysis hygienic state the oral in girls (n = 111) The main groups of boys (n = 23) and (n = 17) control groups children preschool age corresponded satisfactory index hygiene doses involvement health are levels hygiene boys main group children preschool (n = 129) 2.34 ± 0.09 was chemical noted satisfactory index hygiene

In both groups children DV registered inflammatory of the disease marginal periodontium. Average value index RMA in girls main group, was 15.015±1.61%, in boys 18.9 ± 1.27%. In control average the value of index of RMA in boys was 14.93 ± 1.63%, in girls 15.2 ± 1.12% (tab. 4.1.2), that corresponds to mild degree gingivitis in both groups of children the DV.

Thus , initial indicators prevalence caries teeth in average and control groups were homogeneous (P >0.05), differences relative to data groups boys insignificant (P >0.05), good level of hygiene in main and in control groups children DV registered no was. Prevalence diseases marginal periodontal in children fluoride in studied groups is estimated as high according to criteria WHO.

Table 4.1.1

Dental status of preschool children in Andijan region

Group	Control (n = 40)		The main group (n = 240)	
Indicator	Boys (n = 23)	Girls (n = 17)	Boys (n = 129)	Girls (n = 111)
KPU+ kp (kp)	2.18 ± 0.35	2.66 ± 0.527	5.013 ± 0.36	4.92 ± 0.384
PMA	14.93 ± 1.63 %	15.2 ± 1.12 %	18.9 ± 1.27 %	15,015 ± 1,61 %

GI	1.727 ± 0.14	1.77 ± 0.147	2.34 ± 0.09	1.86 ± 0.23
Prevalence of dental caries	82,6 %	88.23%	90.7%	88.28%

Note: * - differences the relative of of the group of of boys are insignificant (P >0.05)

Initial indicators intensity of caries teethKPU+ kp (kp) in the of children of (n = 240) basic groups amounted to 4.84 ± 0.19, in children's (n = 40) control group 2.4+0.3 (tab.4.2). Average rate intensity caries teeth to index KPU+ kp (kp) It was observed in of children of preschool age , the the control group , in children the same age the main of the group is 4.84 ± 0.19, that to high of of the intensity according to criteria .

Table 4.1.2

Dental status of preschool children in Andijan region

indicator	Control (n = 40)	the Main Group (n = 240)	R
KPU+ kp (kp)	2.4 ± 0.3	4.84 ± 0.19	< 0.001
PMA	15.04 ± 1.01 %	19.08 ± 0.67%	< 0.001
GI	1.75 ± 0.1	2.29 ± 0.05	< 0.001
Prevalence of caries dental	85%	89, 6 %	

Analysis hygienic the state of the oral cavity in main of of all (n =) was 2.29 ± 0.05, that corresponds unsatisfactory index hygiene cavity of mouth. When analysis levels hygiene in control group of children preschool age (n = 40) 1.75+0.1 was noted satisfactory index hygiene. Good level hygiene in basic and control groups children DV registered n't .

In both groups children's of DV registered inflammatory diseases regional periodontal, prevalence of which was 78%. Average value index RMA in children DV main groups, was 19.08 ± 0.67, in children DV control of the group of was 15.04 ± 1.01 (table 4.1.2), that corresponds to light degree of gingivitis in of both groups

children DV.

Thus , of lesions of dental caries, hygienic state cavitymouth, prevalence diseases regional periodontal children preschool age in studied groups is estimated how high to criteria WHO.

4.2. Characteristics of dental indicators of the state of organs and tissues of the oral cavity in preschool children of the Andijan region.

At of studying dental status we was conducted analysis of the spread of the disease caries teeth at (n = 40) of children DV control of the group Andijan of the region and by (n = 40) children DV the main of groups (areas Buz and Bulok) Kashkadarya of regions . Received data indicate mass of caries temporary of teeth in both research groups. Average percentage indicator by compared with control group is observed in areas Andijan region (90%) on 5% more indicator prevalence of caries teeth in children .

Table 4.2.1

Dental status of preschool children in Andijan region

Indicator	Control (n = 40)	Main (n = 40)	R
the CPU+ kp (kp)	2.4 ± 0.3	4.52 ± 0.392	< 0.001
PMA	15.04 ± 1.01 %	17.01 ± 2.62%	> 0.05
GI	1.75 ± 0.1	2.1 ± 0.169	> 0.05
Prevalence caries teeth	85%	95%	

Table 4.2.2

Dental status of preschool children in the Andijan region

Indicator	Control (n = 40)	Main (Bulok) (n = 40)	R
CPU+ kp (kp)	2.4 ± 0.3	7.15 ± 0.73	< 0.001

PMA	15.04 ± 1.01 %	17.1 ± 1.93%	> 0.05
GI	1.75 ± 0.1	2.55 ± 0.15	< 0.001
Prevalence of dental caries	85%	87, 5%	

Table 4.2.3

Dental status of preschool children in the Andijan region

Indicator	Control (n = 40)	Main (Buz n = 40)	R
CPU+ kp (kp)	2.4 ± 0.3	5.07 ± 0.57	< 0.001
PMA, %	15.04 ± 1.01 %	24.31 ± 1.5%	< 0.001
GI	1.75 ± 0.1	2.6 ± 0.14	< 0.001
Prevalence of dental caries	85%	90%	

State hygiene oral cavity assessed by method Fedorova- Volodkina. Study state of hygiene oral cavity in children's preschool age showed satisfactory and unsatisfactory, GI in boys was 2.44±0.09 points, in 1.96±0.23 points, in control group in girls - 1, in boys' - 1.74±0.1 points. , in girls' - 1.77±0.14 (R>0.05).

permanently residents in Andijan region density of Uzbekistan, indicates prevalence caries teeth. The main group consisted of boys 90.7% (n = 129), girls 88.28% (n = 111). Prevalence caries in of children both in control group (n = 40) was 82.6% in (n = 23) and 88.23% in girls (n =). significant differences in academic performance between girls and not revealed , therefore can be the use of general scores children both groups.

High level intensity caries noted at analysis quantity individual levels intensity caries in main group preschoolers. Indicators boys are 5.15±0.36, indicators girls - 4.86±0.384. Average level at girls control group was 2.66±0.527, and low level intensity caries in boys control group - 2.48±0.35.

Table 3.1

Dental status of preschool children in Andijan region

Group	management		the main group	
Indicators	guys	Girls	guys	Girls
KPO± kp (kp)	2.48±0.35	2.66±0.527	5, 15 ± 0.36	4.86 ± 0.384
PMA	18.93±1.63 %	13.2±1.12 %	19.9±1.27 %	1 6.05 ± 1.61 % _ _
GI	1.727±0.14	1.77 ± 0.147	2.34 ± 0.09	1.86 ± 0.23_
Prevalence of dental caries	81.4 %	84.8%	9 3.7 %	90.28%

Note : * - differences not reliable (P>0.05) from comparison with data group of of boys.

In groups children of inflammatory diseases of peripheral carotene was noted . score of active the index the RMA was 16.05±1.61% , and 19.9±1.27% for In group of compared with the average signs index of RMA was 18.93±1.63% in of boys and 13.2±1.12% in of girls, that corresponds to average level morbidity gingivitis in children of of both groups .

Thus both primary indicators prevalence caries teeth in girls in main and were academy P> 0.05), some compared with data in group boys differences significant were except unreliable (>) status that is good indicator their hygiene lessons in children main and control groups . Light degree level fluoride children in all children, living in Andijan region of the republic .

final indicators intensity caries amounted to 4.86±0.19 , in children control group 2.4±0.3. Same-age main group corresponds to high level intensity according to criteria of WHO. .

Physicochemical properties of oral fluid in preschool children.

Amount of concentrations fluorides (ions and compounds) in oral fluid determined potentiometric method (DavST 4386-89). For of this was used electrode system, consisting of of fluoride- selective and auxiliary chlorine- silver electrode. For definitions the amount of fluorides and iodides in saliva used samples saliva volume 2-4 ml. Saliva collected through 60 minutes of after food. Samples processed citrate- ethanol buffer solution 2:1 and measured concentration fluorine in ionomer EV-74. Lower limit of detection of fluorine with help of fluorine-selective electrode was equal to $1x10^{-}$ mol/l, that corresponds to 0.02 mg of fluorine in 1 l. Researches were conducted at temperature of 25ºC. All laboratory equipment and bottles with oral liquid were frozen in laboratory conditions at temperature of -20ºC. Definition level fluorine in of liquid oral of the cavity conducted in 138 children preschool age , born and living in biogeochemical conditions fluorine deficiency, on background reception tablets of fluorine balance, containing 0.55 mg of fluorine.

Considering the number studies reliably , that state of organs and tissues cavity of the mouth depends on from composition and of properties oral of liquid. Considering high frequency and prevalence caries in teeth children preschool age , studied level fluoride in saliva.

The amount of fluoride in enamel in children of the Andijan region

Group	Management (n = 64)		Preventive group (n = 1 75)	
Indicators	guys	Girl	guys	Girls
Fluorine (F) mmol/l	0.031 ± 0.0018	0.0 31 3 ± 0.002	0.019 ± 0.00014	0.11 ± 0.0 5

Ability mineralization enamel significantly depends on from of content in it ions fluorine. Sexual differences by amount inorganic phosphorus in oral of liquid children preventive and control groups not revealed: 1.2±0.076, 1.53±0.16 mmol/l and 1.86±0.171, 1.89±0.2 mmol/l (respectively 0.2 mmol/l).

Potential mineralization oral fluid MPS of examined children was estimated as low (1.42±0.12), satisfactory crystal-forming properties of oral of fluid were observed only in 5% of children, in 70% preschoolers. - low, and in 25% examined children - very low indicator.

Potential of mineralization oral fluid in children 3 years statistically not differed from such in of children 4 years of : average indicator in the MPS was 1.45±0.16 and 1.37±0.19 respectively.

Thus , differences in the concentration in in oral fluid between boys and in preventive and control groups we no (P> 0.05), consider the correct to use calculated by us average indicators.

In table 3.1 shown, that after reception tablets of fluoride in during 2 months prevalence of caries teeth decreased from 90.28 . Up to 89.85% increase prevalence of caries not was observed . prevalence of caries teeth under action of prevention of caries tablets fluoride sodium in during of the year amounted to 88.4% , and incidence of caries - 0% in during 12 months .

Table 3.1

Dynamics changes the condition of teeth in and of preschool in group prevention after application of complex measures on prevention of caries.

Indicator	Control Group of (n = 64)	Preventive methods group n = 175)	After 2 months the preventive (n = 175)	Group prevention of after 12 . (n = 175)
KPO± kp (kp)	2.4±0.3	4.96 ± 0.26	4.94±0.26	4.91±0.23
PMA	15.04 ± 1.01	19 , 48 ± 0.89	14.82±0.56	13.56±0.18
GI	1.75±0.1	2.42 ± 0.22	1.8 ± 0.067	1, 67 ± 0,06 2
Distribution of caries	85%	90.57%	89.85%	88.4%

By the end years , a comparison the intensity of caries teeth in children of preschool age was out, that the intensity of in of children of the group of comparison was 5.8± 0.45 .

cesium background application of complex measures prevention caries tablets fluoride sodium.

According to the results of our studies in children's , tablets of fluoride , be revealed improvement of hygienic of the state oral cavity and decrease growth rate caries teeth, and also change quality. composition oral fluid .

Table 5.3

Dynamic composition fluorine in of children preschool age .

indicators	Management	In the time communication	After 2 months	After 12 months
Fluorine (F) (mmol/l)	0.031 ± 0.0014	0.019 ± 0.0001	0.12 ± 0.009	0.113±0.0046

After 2 months after the beginning of reception of tablets of fluoride, before the decrease of concentration of fluoride. 0,12±0,009 mmol/l. Through a year after prophylaxis began, the concentration of calcium was 0.113 ± 0.0046 mmol/l.

Thus way, regular use fluorine children preschool age will allow to maintain health dental . On background fluoride prevention average indicators intensity caries teeth in children in ten times differed from similar indicators in group comparison. Decrease incidence of caries teeth in groups amounted to 46.6%. Success prevention tablets fluoride sodium is explained data on positive dynamics mineral composition oral liquid.

CONCLUSION

According to maximum permissible level of fluoride in water , the preservation healthy teeth necessary the indicator, equal to 1.5 mg / l. However, level fluoride in drinking water Andijan of the region led to inevitable increase in prevalence and of the intensity of caries teeth, that in subsequently leads to development complications up to up to loss of dental .

In as a result of of the studies it was established the the amount of fluorine in drinking in the areas Andijan of the region sharply .

of fluorine was 0.175 ± 0.0010 in Bulake , 0.222 ± 0.0015 in Buse ± 0.0015 in Kurdont and 0.144 ± 0.0009 in by Iztoscan .

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In the result of study of samples of drinking water Andijan of the region of the Republic of Uzbekistan established the number of fluoride- ions are in all samples decreased by 10 .

Thus way, results researches show, that concentration fluoride in drinking water below REE, that leads to development of pathological process in solid tissues teeth in children, living in Andijan region of the Republic Uzbekistan. Such result our prevention of caries with adding Fluorobalansa.

In as the object of study took participation of 175 (175 boys, 103 a boy, 72 girls) in the age 2 to 6 years, attending preschool educational institutions of the Andijan . The main group the study 175 children preschool . In control group took participation of 64 of the child preschool age (37 and 27), residents of Andijan of the Republic Uzbekistan.

At moment the research all children were practically healthy, in of connection with than not was necessity in of researches at of clinicians of neighboring areas.

In the methods of were used : clinical, , chemical, statistical.

Condition hygiene the oral cavity assessed by the method of Fedorov- . the Study hygiene condition the cavity in children preschool age showed a satisfactory

and an unsatisfactory , GI was in 2.34 ± 0.09 points, in of girls 1.86 ± 0.23 , in boys' group assessment statsoft - 1, in 1.74 ± 0.1 , in of girls - 1.77 ± 0.14 (R> 0.05).

, constantly of residents in the Andijan region Republic Uzbekistan, testifies to the prevalence of of caries teeth. The main group was 90.7% boys and 88.28% girls. Prevalence caries of teeth in children of both sex in preschool control group was in boys and 88.23% in of girls. Reliable differences between girls and boys not revealed , therefore can use general indicator for children of both groups.

High level intensity caries noted in analysis number of individual levels of intensity of caries in of the main the group of preschoolers. the Average value for boys is -5.013 ± 0.36, and average value for girls - 4.92 ± 0.384. Average level in girls control group was 2.66 ± 0.527, and low level intensity caries in boys control group - 2.18 ± 0.35.

In both groups children's noted inflammatory of the disease of peripheral periodontal . average of index of PMA in the main was 15.015±1.61%, in - 18.9±1.27%. In the control group , the average the sign of the index PMA 14.93±1.63% in boys and 15.2±1.12% in girls, in corresponds the average the level of gingivitis children both .

Thus way, primary prevalence index teeth in girls in main and control groups were identical (P> 0.05), biology samples with data in group boys differences were P > 0.05), that is good indicator. Level of hygiene noted in children main and control groups . Easy degree of gingivitis noted in all children, living in Andijan region of the republic.

the final intensity indicators of caries were 4.84±0.19, 2.4±0.3 in children group and 4.84 ±0.19 in preschool . Single-age main group corresponds to high level intensity according to criteria by WHO. .

Large number studies reliably proves, that condition organs and tissues oral cavity mobile on from of composition and properties oral fluid . Considering high frequency and prevalence caries teeth in children preschool age, studied level fluoride in saliva.

Ability mineralization enamel significantly depends from content in it of ions of fluorine. Sexual differences by number of inorganic of phosphorus in oral fluids children preventive and control of groups not revealed: 1.2±0.076, 1.53±0.16 mmol/l and 1.86±0.171, 1.89 respectively .

Thus , , of differences in concentration ions of fluoride in oral fluid between boys and girls in preventive and control groups we not revealed (P> 0.05), considers correct to use calculated by us averages indicators.

After reception tablets fluoride in for 2 months prevalence caries teeth decreased from 90.57% to 89.85%, at this increase prevalence of caries not was observed . Prevalence of caries teeth under action of prevention of caries tablets fluoride in for of year was 88.4 % , and incidence caries - 0% in for 12 months .

By end of year the intensity of caries of teeth in children preschool age showed that the intensity caries teeth in children group comparison was 5.8± 0.45 .

on background of application of the complex measures of prevention caries fluoride tablets of sodium .

According to results our of researches in children receiving tablets fluoride sodium, revealed improvement hygienic condition cavity of mouth and decrease in of rates growth caries of teeth, and also change of quality . composition oral fluid.

After 2 months after beginning reception of tablets of fluoride, to reduction concentrations fluoride. 0.12±0.009 mmol/l. year after the of prophylaxis the concentration of hematopoietic calcium in caries was ± / .

Thus , regular use fluoride children preschool age will allow save health teeth. On the background fluoride prevention average indicators intensity caries teeth in children in ten times differed from similar indicators in group comparison. Reduction incidence of caries teeth in groups amounted to 46.6%. Success prevention tablets fluoride sodium is explained data on positive dynamics mineral of composition oral liquid.

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