

**Introduction:** Despite the high rate of science development and intensive research in preventive dentistry, tooth decay remains the most common dental disease. The nowadays market offers a large variety of products that help dentists worldwide to prevent caries, but the dilemma is which product to choose: a modern one, or one with many years' proven results? In this paper I will refer to the prevention and treatment of incipient caries - a major problem in caries - prone and post-orthodontic patients with both aesthetic and functional implications.

**Objectives:** To evaluate the clinical efficiency of the two methods proposed in this study in the treatment of early carious lesions: a two week therapy with Flor-Opal versus immediate infiltration with Icon.

**Methods:** For this study a number of patients with early carious lesions were selected and divided into two groups. For the first group we will use topical applications of fluoride varnishes and for the second we will use the infiltration method of demineralized enamel. Both groups received professional scaling and brushing. The first group received treatment with Flor-Opal from Ultradent company, which is sustained-release source of 0.5% fluoride ion (1.1% Neutral NaF) in a sticky, viscous gel. The product was designed for at-home use when fluoride application is needed and is available in syringes or disposable trays. Due to the necessity of repeated appliance (a 2-week therapy) we decided to manufacture multi-use individual trays. The second group received treatment with the caries infiltrant- Icon from DMG America. The working technique is quite simple and requires no more than 15 min: after isolating the required sector (preferably with rubber dam) the demineralized (white) spots are etched with Icon-Etch (hydrochloric acid gel) for 120 sec, washed, dried, and then desiccated with Icon-Dry (99% ethanol). On the so-prepared surface is applied the Icon-Infiltrant for 3 min setting and then it is light-cured for 40 sec. After the procedure is repeated one more time, the surface is finished with polishing cups.

**Results:** After a 2 week 6 and 12 months recall we evaluated the former regions with early carious lesions by aesthetic and functional criteria. In the first group we observed the persistence of white spot lesions and in one patient the caries progressed and needed common treatment of cavities. The second group showed neither aesthetic modifications nor caries evolution.

**Conclusions:** The results were conclusive, but the decision to use one or other treatment strategies is to be made by the doctor and the patient's consent. The choice will rely on the criteria: cost effectiveness / improvement of aesthetics/ efficiency to stop decay.

**Keywords:** Prevention, early carious lesions, fluoride varnish, Icon.

## PECULIARITIES OF THE ROOT GROWTH ZONE AND DIFFERENTIAL DIAGNOSIS OF GRANULOMATOUS APICAL PERIODONTITIS

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**Introduction:** Chronic apical periodontitis, as the last evolution stage of an untreated pulp disease, has the area of development in the periapical dental space, an important zone from the cellular point of view infected with bacteria. The large number of chronic apical periodontitis cases encountered in daily dental practice, especially in younger patients, requires an accurate assessment of the periapical status changes caused by the microbial activity. The question is the correct diagnosis of the growth zone from an apical chronic inflammatory process, because the clinical and laboratory similarities can contribute to an erroneous diagnosis.

**Purpose:** The study of the structural features of the growth zone of the root apex and the differential diagnosis between the non-edified root and radicular granuloma in the permanent young teeth. Analysis of bibliographic data on the subject. Radiological study of the permanent teeth with the root non-edified apex at different stages of evolution. Comparative analysis on the base of radiological data of the growth zone and radicular granuloma.

**Materials and methods:** 97 radiological clichés of children from 5 to 17 years with the roots of teeth in different stages of formation and 12 radiograms with radicular granulomas have been studied. Macroscopically, 20 teeth, extracted for various reasons, with unformed roots were studied.

**Results and discussion:** Analysis of radiological data of the tooth roots revealed the peculiarities of the growth zone in comparison with the destructive changes characteristic for the chronic granulomatous periodontitis in the form of extended centre of rarefaction with the bone missing in the middle, the periodontal space widening on the account of the cortical lamina resorption and the absence of the spongiosa involved in the inflammatory process.

**Conclusions:** Inflammation and pulp necrosis disturb the process of development of young permanent teeth roots, especially that the inflammatory processes in children are diffuse, affecting the adjacent tissues of the centre. Chronic apical periodontitis, occurring especially in younger patients, requires an accurate assessment of the periapical changes.

**Key words:** chronic apical periodontitis, root growth zone, root apex.

## CARIES IN CHILDREN. THE INCIDENCE STUDY

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**Introduction:** Actuality of the subject is determined by the growing incidence of dental caries, by its severity, by local and general complications that occur. Dental caries by its progressive and irreversible evolution is the most common cause of morphofunctional imbalance of the components of the stomatognathic system. Caries diagnosis, apparently simple, sometimes proves to be difficult.

**Purpose:** To evaluate caries incidence in children and to increase the diagnostic efficiency during prophylactic examinations.

**Material and methods:** To achieve the established purpose, 89 schoolchildren from theoretical high school in Zîmbreni, Ialoveni were included in the study. Mean age of patients within the study was  $14,37 \pm 0,9$  years with a range between 12 and 16 years. The total cohort of patients comprised 37 boys (41,57%) and 52 girls (58,43%). Examination was performed according to the WHO methodology, by direct and indirect inspection using a dental mirror and by palpation with a dental probe. Clinical examination by inspection was, in some cases, insufficient to establish the diagnosis of proximal caries. In cases of the enamel color change or undermining of the marginal ridge, a complementary examination method was applied using the floss - sign of the floss. Inspection findings and observations were recorded in dental health records.

**Results:** Of the 89 examined subjects, 77 schoolchildren (86,52% of cases) had dental caries in permanent teeth. Examination of subjects by direct and indirect inspection with a dental mirror and dental probe allowed determining caries in pupils (97,4% of cases). Combination of clinical and complementary examination through the method of the floss sign allowed establishing diagnosis of dental caries in 2 pupils (2,6% of cases).