

## MANAGEMENT OF FLUOR DEFENDER USAGE FOR PRESCHOOL CHILDREN. CASE REPORT

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**Abstract:** Prevention is the most effective and low cost measure to promote oral health. The use of cariostatic action of fluoride varnishes is one of the main directions of preventing tooth decay. Prophylactic services provided to preschool children can be difficult to manage due to their young age and psychological characteristics. The aim of this paper is to describe how flour defender application can be managed in dental caries prevention to a preschool 3 years old boy. During his first visit to our dental office, we were able to cooperate with him and to provide a non invasive treatment to all deciduous teeth, except upper central incisors that were affected by incipient caries. We used a protective enamel with fluoride for children containing 0,1% fluorosilane.

### INTRODUCTION

Oral diseases are a major public health concern because they affect the individual's quality of life.(1) People are susceptible to dental caries because of their lifestyle, food habits and oral hygiene behaviours, so that 99% of people will have tooth decay during their lifetime.(2)

Primary teeth are the basis of permanent teeth and more susceptible to caries compared to permanent dentition.(3) Preschool children develop many dental problems as tooth decay may lead to pain and infection. Though dental caries is a chronic infectious disease, it is not treatable by antibiotics. Despite the fact that is highly preventable, dental caries remain one of the most common chronic childhood diseases.(4,5)

Prevention of oral disease is the most efficient and cost-effective method of ensuring oral health.(6) The main preventive attitudes may include: a good oral hygiene, healthy eating and drinking habits, the use of fluoride's cariostatic action, regular dental check-ups, protection of the tooth surface by sealing of grooves.(7,8)

Recent reports in dental literature demonstrate that the use of fluorides in different forms is recognized as one of the most successful measures for caries prevention.(9,10)

Fluoride toothpaste is the most significant form of fluoride used globally and the most rigorously evaluated vehicle for fluoride use, but due to the age of the target population, 3 to 6 years old, the fluor concentration is very small, under 600 ppm.(11,12) In comparison with fluoride toothpaste, fluoride varnishes applied to dental surfaces keep a longer contact with enamel. In addition to their remineralizing action resulting from ion release, it is likely that these products act as a physical barrier that protects the enamel against acid attack.(13,14)

The purpose of this paper is to evaluate the management of fluor varnishes usage to a preschool population. The products intended to use consist in: caries prophylaxis, improvement of enamel strength and building protective layer on the enamel's surface. Despite the increased interest in promoting the prophylactic services that can provide a good oral health, there is still reluctance in using them at such young age, 3 to 6 years old. The main issues that can interfere with the

medical act is the child's disruptive behaviour, fear of dentist, fear of pain, increased salivation.(15,16,17)

### CASE REPORT

Here, we aim at presenting a case of a 3-year old boy that referred to our dental office along with his parents for a dental check-up.

From the data provided by his mother, it was the first visit to a dentist. There were no pathological records of oral and dental conditions.

The patient was cooperative, and we managed to assess a complete oral check-up using an illuminated dental mirror and a dental probe. A clinical observation sheet was completed with the results of our examination. All deciduous teeth were fully erupted on the dental arches. Incipient caries were detected by probing and exploring with dental floss the mesial face of teeth 5.1 and 6.1 (upper central deciduous incisors).

We had the parents' agreement to proceed to a non invasive procedure to all erupted teeth.

The intervention consists in applying a fluoride varnish to the surface of all healthy teeth.

**Figure no. 1. Fluor Defender**



The product that we used contains 0,1% fluorosilane (1600 ppm F<sup>-</sup>), HEMA, and it is not indicated for children under the age of 3.

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## CLINICAL ASPECTS

The intended use is to build a protective layer on the enamel's surface and to improve its strength. Due to fluoride content, it provides caries prophylaxis.

### Varnish application procedure

Teeth surface were cleaned up with rotative dental brush and dried with air stream. The operative area was isolated with cotton rolls. About 3 drops of the preparation were placed in a small dish. A thin varnish layer was applied with the single use brush applicator supplied, using paint on brush technique. In the decreased interdental spaces, dental cord was used to apply the preparation evenly. Teeth surface were dried gently with stream of air, about 30 seconds. Parents of the subject were instructed not to allow eating or drinking for at least 45 minutes after treatment.

**Figure no. 2. Varnish application procedure**



## DISCUSSIONS

**Table no. 1. SWOT ANALYSIS**

SWOT ANALYSIS	
Strengths	Weaknesses
Non invasive procedure	Young age patient-cooperation management
Easy to use preparation	Salivation control-isolation of the operative area
Fast application of the product	
Opportunities	Threats
Improvement of enamel strength	Using the product under the age of 3 or in case of inflammation
Caries prophylaxis	Hypersensitivity to the product's components

Previous research already proved the cariostatic use of fluoride.(9,10,13,14)

Our study managed to describe a non invasive procedure with a fluor defender product that was very easy to use and created a great improvement of enamel strength. However, some difficulties were related to the young age of the patient and the lack of salivation control.

We also had some limitations of the study due to the product's indications that ruled out children under 3 years old and those who had a hypersensitivity to one or more of the product's components.

## CONCLUSIONS

The reported case helped to the assessment of some important conclusions in pediatric dentistry. First of all, prophylactic services can be provided to a very young group target population such as preschool population. In our case, the minimal age to use the fluor defender varnish was 3 years old, according to the product's table of recommendations. We have chosen a lower age limit patient to show that this kind of product is easy to use. The management of fluor varnish application was not difficult, for it is a non invasive procedure.

Minimal dental tools and materials were necessary such as examination instruments, cotton rolls, air stream and one vial of 1 ml of the product and a single-use brush applicator.

Prevention is the most effective and low cost measure to maintain a good oral health.

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