

PROPERTY EVALUATION OF CHILDREN’S ORAL FLUID DURING ORTHODONTIC TREATMENT

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Introduction

During the period of correction of dento-maxillary anomalies (DMA) children have an increased risk of developing dental caries. Early detection of individual risk factors and estimation of the chances of new carious cavities contributes substantially to the effective prevention of dental caries.

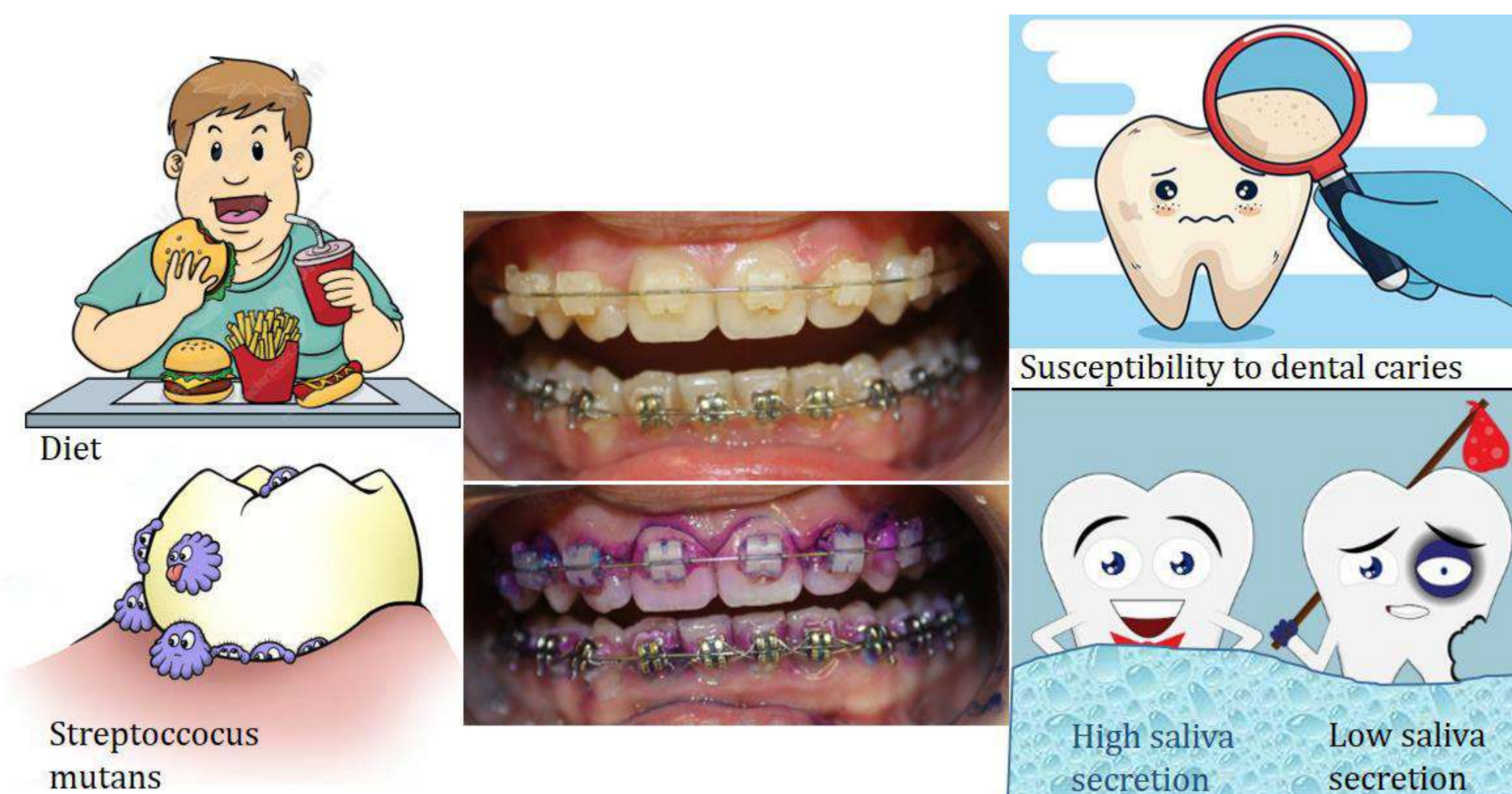


Fig. 1. The influence of individual risk factors to developing dental caries

Keywords

Oral fluid, *Streptococcus mutans*, orthodontic treatment.

Purpose

Property evaluation of children’s oral fluid during orthodontic treatment.

Material and methods

The number of *Streptococcus mutans* in oral fluid (OF) was determined using the *Saliva Check Mutans kit*, pH, buffer capacity and OF flow rate by applying *Saliva-Check Buffer kit* to 48 children with ADM: 12 children with fixed systems, 12 children that were planning orthodontic treatment and 24 conventionally healthy children.



Fig. 2. Determining the concentration of *Streptococcus mutans* in the oral fluid with the use of the *Saliva-Check Mutans Kit*, GC
 Fig. 3. Appreciation of salivary pH, buffer capacity of the oral fluid and salivary flow rate by applying *Saliva-Check Buffer Kit*, GC

Results

In children undergoing orthodontic treatment with fixed systems the flow of OF was increasing and the pH decreased below 5. In most patients with fixed orthodontic appliances the number of *Streptococcus mutans* in OF was higher than 5×10^5 CFU / ml.

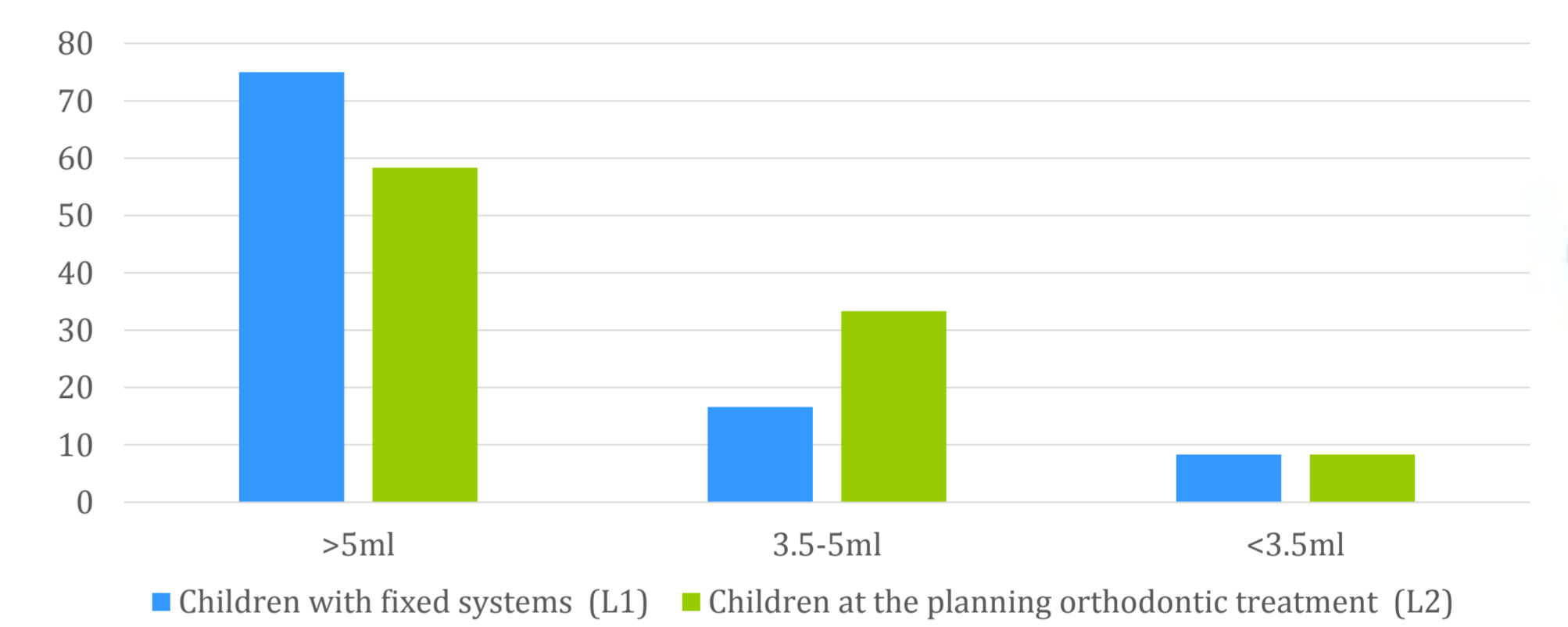


Fig. 4. Distribution of children according to salivary flow rate

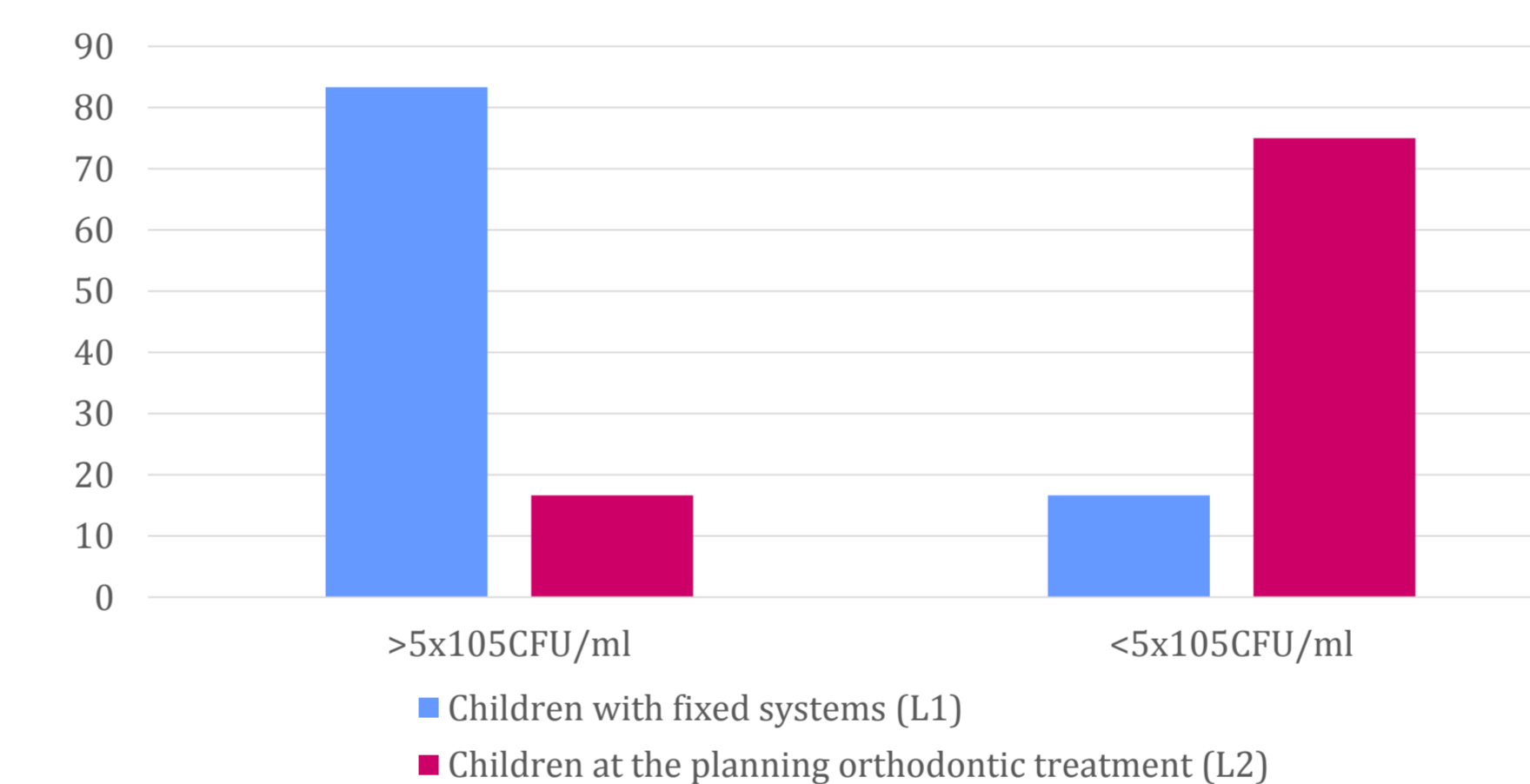


Fig. 5. Distribution of children according to quantity of *Streptococcus mutans*

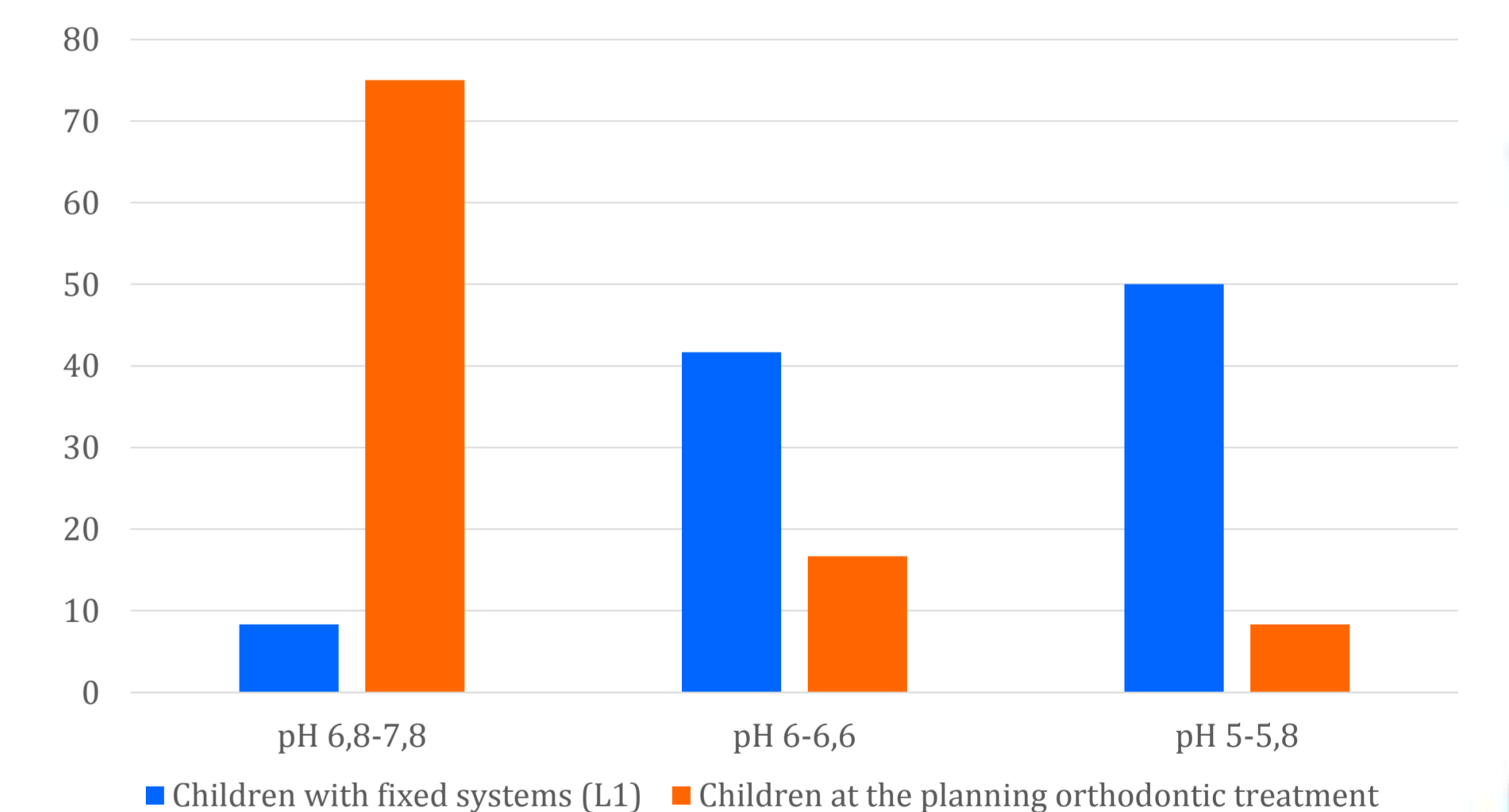


Fig. 6. Distribution of children according to salivary pH

Conclusions

The accumulation of dental biofilm in the fixed orthodontic system, the increased number of *Streptococcus mutans* and the decrease in the pH below 5, are important carious risk factors that must be considered when planning individualized preventive programs.