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## **ALIGNERS ARE CYTOTOXIC**

Orthodontic practice has undergone major technological advances in recent years. One of the most important advances has been the possibility of aligning teeth with plastic aligners. Literature on the biological properties of these devices is lacking despite their widespread use in clinics. In case reports, the use of clear aligners has been associated with a wide variety of allergic reactions, ranging from sore throats to full-body rashes. To explore the possible cytotoxic potentials of these materials, Arab researchers evaluated and compared the cytotoxicity of several clear aligner systems (Invisalign, Eon, SureSmile, and Clarity).<sup>1</sup> The cytotoxicity assessment was performed by immersing three sets of aligners from each of the four systems in normal saline for 1 month at 37°C. Gingival fibroblasts were exposed

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to these solutions after being seeded in 96-well microplates for 48 hours. Optical density was then measured to determine cell viability and assess cytotoxicity. The thermoplastic materials of all of the systems (Invisalign, Eon, SureSmile, and Clarity) presented some degree of toxicity (slight to moderate), with statistically significant mean differences compared with the control.

### **THERE ARE NO DIFFERENCES IN BIOFILM FORMATION AMONG DIFFERENT LIGATION METHODS**

Dental biofilm control is a constant challenge in orthodontic practice. The presence of fixed orthodontic appliances favors the creation of bacterial niches that lead to the appearance of periodontal lesions and caries. A variety of strategies are used to reduce bacterial accumulation, such as replacing elastic ligatures by metallic ones, and using self-ligating brackets. However, the scientific evidence on the best strategy to reduce bacterial accumulation is controversial. To assess the available evidence, a group of New Zealand researchers conducted a systematic review<sup>2</sup> of studies that compared the microbiological and clinical effects of stainless steel ligatures with those of metal ligatures and self-ligating brackets in biofilm formation in orthodontic patients. Searches of the MEDLINE and EMBASE databases for eligible studies were complemented by additional manual searches. The Cochrane Risk of Bias 2 tool was used to assess the quality of the evidence. The review revealed no significant differences in biofilm formation between self-ligating brackets

and elastic ligatures. The stainless steel ligature showed less accumulation than the elastic ligature, but the difference was not statistically significant.

### **ORTHODONTIC TREATMENT IMPACTS THE CHOICE OF DENTISTRY AS A PROFESSION**

Various factors can influence the choice of a professional career. Many studies in the literature have analyzed the factors that prompt individuals to choose a career in dentistry. The reasons most commonly identified are that it offers reasonable working hours, which allows practitioners to spend more time with their families, and that it offers the opportunity to help underprivileged people. To explore further factors in the choice of dental careers, a group of Turkish researchers compared dentistry students with a control group of psychology students, to examine whether orthodontic treatment was associated with the pursuit of a career in dentistry.<sup>3</sup> They used an electronic questionnaire that consisted of multiple-choice questions and descriptive questions about the respondents' dental history and experiences in dental care. The questionnaire was sent to dental students and to the psychology students, who served as the control group. Statistical analysis of the responses revealed that the dental students had more positive personal experiences related to dentistry and orthodontics than the psychology students. The authors concluded that positive experiences with orthodontic treatment probably increased the probability of choosing dentistry as a career.

## **OVERJET IS A POTENTIAL CONDITION FOR BULLYING EVENTS**

The high prevalence of malocclusion in adolescence is a public health problem with physical and psychosocial consequences. It not only causes functional limitations, but can also make teenagers the targets of bullying. In a recently published study,<sup>4</sup> a group of Brazilian researchers investigated whether correlations existed between malocclusion and a history of bullying in adolescents. A questionnaire from the Brazilian National School Health Survey (PeNSE 1 and 2) was used to assess whether the subjects had been bullied, and to identify the victim and aggressor. The variables that were assessed included the age of the individual, environment (income, father and mother's education, housing, government assistance, and parental occupation), social and emotional well-being (CPQ11–14 domains), self-perceived need for orthodontic treatment, and clinical conditions (crowding, diastema, overjet, and anterior open bite). Although malocclusion did not correlate with a history of bullying in this study, an increased overjet affects self-perception among adolescents, suggesting a potential risk for bullying events.

## **THERE IS AN ASSOCIATION BETWEEN DELETERIOUS ORAL HABITS AND ASTHMA**

Deleterious oral habits are a common finding in pediatric patients. Studies have been conducted to investigate possible associations between these habits and local and systemic health problems. Following this line of research, a group of Brazilian researchers conducted a systematic review followed by meta-analysis to verify an association, previously observed in the literature, between deleterious oral habits and asthma.<sup>5</sup> They carried out a systematic search in the PubMed, Scopus, Lilacs, Web of Science, Google Scholar, and OpenThesis databases to identify observational studies that evaluated the association between deleterious oral habits (thumb sucking, pacifier use, onychophagia or nail biting, bottle feeding) and asthma in children aged 2 to 17 years. Bottle feeding and pacifier use, but not nail biting and thumb-sucking, were associated with asthma in children.

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