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### ORTHODONTIC BRACKETS AS PROVIDED BY MANUFACTURERS ARE CONTAMINATED

As an orthodontist, have you ever thought about disinfecting or even sterilizing the brackets provided by manufacturers before bonding them onto your patients' teeth? This might seem extreme care, typical of compulsive orthodontists obsessed with cleaning; however, would it really be extreme care? With a view to answering this question, Brazilian researchers conducted a study<sup>1</sup> to assess microbial contamination of orthodontic brackets of four different commercially available brands, as directly provided in the manufacturer's packaging. Results revealed that two bracket brands showed microbial contamination in their original packages. The authors highlight the risk patients run when these types of material are used. They also emphasize the need for sterilization of material before they are sold, so as to protect patients' health. Given that we cannot ensure total absence of microorganisms in orthodontic brackets, each one of us is responsible for providing our patients with free-of-contamination material.

### INTERPROXIMAL STRIPPING USING OSCILLATING METHOD INCREASES ENAMEL ROUGHNESS

In order to achieve good dental intercuspation as a result of addressing Bolton discrepancy or for gaining small spaces to attain tooth alignment, interproximal stripping is rendered necessary. Interproximal stripping is a routine procedure in the orthodontic practice and it is performed by means of several different tools. Manual files, diamond burs and, recently, oscillating strips (Fig 1) are the most common methods employed by orthodontists from all around the world. However, what is the end result of enamel roughness after stripping is performed by means of oscillating strips? Importantly, after interproximal stripping, the enamel should be as smooth as possible so as to prevent dental caries. With a view to answering this question, Swiss researchers conducted a study<sup>2</sup> to assess enamel

roughness after stripping was performed with oscillating strips. Results reveal an increase in enamel roughness when stripped enamel was compared to healthy enamel. These results suggest the need for orthodontists to adopt polishing techniques with thinner strips, so as to provide enamel with greater smoothness after treatment finishing.

### THE USE OF ALENDRONATE AFTER OVARECTOMY REDUCES ORTHODONTIC TOOTH MOVEMENT

The number of adult patients seeking orthodontic treatment daily increases. Treatment of these patients carries particularities that we cannot neglect. Osteoporosis is a common clinical situation shared by adult women subjected to ovariectomy. In this context, the following question arises: Would orthodontic tooth movement in these patients be different? Such doubt arises because alendronate inhibits bone resorption, a key phenomenon to tooth movement. With a view to answering this question, Brazilian researchers conducted a study<sup>3</sup> using female rats as animal models. The ovariectomized rats were treated with alendronate sodium and had their teeth subjected to orthodontic movement. Results reveal that alendronate sodium decreases tooth movement in ovariectomized rats.

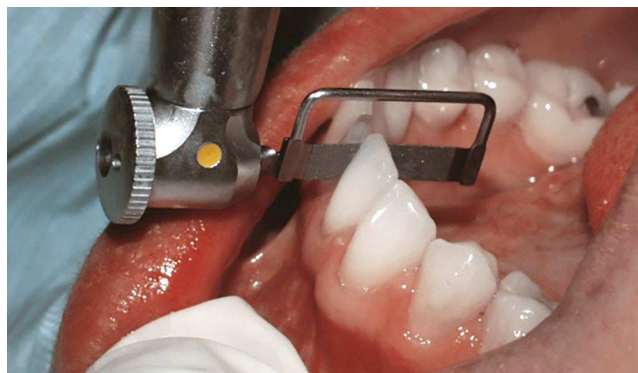


Figure 1 - Oscillating diamond strips for interproximal stripping. Source: [www.intensiv.ch/prodotti/ortho-strips-system](http://www.intensiv.ch/prodotti/ortho-strips-system).

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These results make us be on red alert and reinforce the need for the orthodontist to deal with patients in a broader sense, not only focusing on mouth and malocclusion.

### **SUPER ENGINEERING PLASTIC PROVIDES GOOD PERSPECTIVE FOR ORTHODONTIC WIRES MANUFACTURING**

Patients who will be subjected to orthodontic treatment long for esthetic orthodontic devices. To date, we count on non-metallic brackets with greater esthetic features when compared to metallic ones. In spite of such esthetic improvements, we are continually inquired by patients about the esthetic features of orthodontic wires placed into brackets slots. Esthetic wires are an alternative for demanding patients; however, they have some disadvantages, such as staining and breakage of esthetic covering. The quest to find different types of material capable of reducing such disadvantages has driven the development of plastic wires. In this context, a question arises: How will plastic wires mechanically behave? With a view to answering this question, Japanese researchers conducted a study<sup>4</sup> to assess three different types of super engineering plastic and the feasibility of using them to manufacture orthodontic wires. The authors concluded that all plastic material assessed prove suitable to be used for orthodontic wires manufacturing, which gives us the hope to, perhaps one day, have completely esthetic orthodontic appliances.

### **EFFERVESCENT TABLETS PROVE EFFECTIVE IN CLEANING THE ACRYLIC-RESIN SURFACE OF ORTHODONTIC SPLINTS**

Removable orthodontic appliances made of self-curing acrylic resin are key to the orthodontist armamentarium. They provide several possibilities of usage which range from minor tooth movement to retention after treatment with fixed orthodontic appliances. Nevertheless, there still is considerable doubt about the hygiene of such devices. Some orthodontists suggest that patients clean them with tooth paste or mild soap. In this context, effervescent tablets have been recently available on the oral hygiene market with promises of cleaning removable prostheses and/or orthodontic splints. However, would tablets clean orthodontic appliances effectively? With a view to answering this question, German researchers conducted an *in vivo* study.<sup>5</sup> To this end, a group of volunteers wore vacuum-formed maxillary splints with incorporated acrylic resin discs (Fig 2).



**Figure 2** - Vacuum-formed maxillary splint with four incorporated resin discs, each of them containing two specimens. Source: Fathi et al,<sup>5</sup> 2015.

Results reveal that effervescent tablets prove effective in cleaning the acrylic resin surface of orthodontic splints. According to the authors, effervescent tablets might be recommended as the cleaning method of choice for removable orthodontic appliances, in comparison to pure water, should no mechanical method be employed.

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