Open bite due to lip sucking: a case report
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Lip sucking, in spite of being less frequent than other habits, can cause malocclusion, which in turn may favor the appearance of other new habits such as tongue thrust. The elimination of this habit can lead to the spontaneous correction of malocclusion. The case report of a three-year-old male with a lip sucking habit is presented. After eliminating the habit, the open bite that it had caused, corrected spontaneously.

INTRODUCTION
The presence of an oral habit can be no longer considered as normal in a child older than three years. It is certain that the presence of a habit does not necessarily entail the production of a malocclusion and that more than 50% of children presenting a habit will not develop any malocclusion, but if the presence of malocclusion in a child with habits is observed, it is appropriate to act before permanent incisors erupt. Damage caused by habits depends on a series of factors such as beginning time, duration, intensity and growth pattern of the patient; but in any case, the habits have a negative influence on the craniofacial growth, with the possibility of an alteration of form due to improper function.

The most frequent habits in childhood are mouth breathing, tongue thrust, thumb sucking and lip sucking and it may happen that several of them co-exist in the same patient.

CLINICAL CASE
Three-year-old male child presented with multiple caries in both arches that were treated with amalgam restorations, pulpotomies or steel crowns depending on the seriousness of the affection of each dental situation.

Both maxillary central incisors were treated with pulpectomies and restored with a fixed prosthesis treatment (Figures 1 & 2).

The child had a sucking habit of the lower lip (Fig. 3) and during the clinical examination, a cuspid to cuspid open bite was observed (Figures 4 & 5).

After a conversation in which we explained to the child the damage that lip sucking could cause to his teeth, we placed a maxillary acrylic appliance with a palatal crib, which prevented the practice of the habit and reminded the child of the necessity of changing his lip posture (Fig. 6).

The positive attitude of the child towards treatment was periodically encouraged and, after one year, the occlusion had been normalized, a normal overbite had been achieved and the habit had disappeared.

The palatal crib was removed and, after six months, the occlusion is still stable and the habit has not reappeared (Figures 7 to 9).

DISCUSSION
Sucking of the lower lip, is a habit, which professionals pay less attention to than to other habits. However, it appears in all ages with a certain frequency, especially, in situations when concentration is requested.

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Figure 1. Anterior radiographic view showing the open bite.

Figure 2. Pretreatment occlusal view of the maxillary arch.

Figure 3. Pretreatment frontal facial view showing the sucking habit.

Figure 4. Pretreatment frontal intraoral view showing the open bite.
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Figure 5. Pretreatment right side view of occlusion showing the open bite and overjet as result of the lip sucking habit.

Figure 6. Upper palatal view showing the appliance with the rake.

Figure 7. Posttreatment frontal intraoral view showing the open bite has closed to a normal position.

Figure 8. Posttreatment left side view of occlusion showing the corrected open bite and normal overjet.

Figure 9. Posttreatment frontal view showing more relaxed facial muscles and no lip sucking.
This habit can cause serious dentoskeletal malformations such as vestibular upper incisors, lingual lower incisors or open bite, and the treatment consists of the use of appliances that prevent the lip insertion between the dental arches. The most frequently used appliances are the activator, the lip bumper and the oral screen.  

The same appliance, that was used in this case is most often used in tongue thrust patients because the open bite could favor the appearance of this habit. The palatal crib in this case was placed very close to the palatal of the upper incisors so that it could interfere with the lower lip.

The spontaneous self-correction of malocclusion after the suppression of the habit which interfered the growth of the anterior alveolar bone, also occurs in cases in which the causing habit is tongue thrust or thumb sucking.

The practice of some exercises or functional myotherapy of the lower lip by the upper lip might have helped to solve the lip sucking problem. Nevertheless, we did not use functional myotherapy in this case.

CONCLUSIONS
A habit causing a malocclusion in a child older than three years (as it occurred in this case) must be treated.

The palatal crib was effective in treating a lip sucking habit, making the habit disappear. When the habit was eliminated, malocclusion spontaneously corrected.

REFERENCES