

Letters to the editor*

Adverse effects of lingual and buccal orthodontic techniques

In their interesting and timely review¹ in the June 2016 issue of the *AJO-DO*, Dr Fadi Ata-Ali et al cited an article of ours² that was published in 2013 in a different journal (*Progress in Orthodontics*) and reported changes in the oral environment after placement of lingual and labial orthodontic appliances. Although we are pleased that the authors included our findings on the risk of caries and worsening of oral hygiene in patients treated by labial and lingual appliances, we would like to specify some important points to clarify the results of our clinical trial.

First and foremost, on page 826 of their review, Ata-Ali et al¹ stated that “Lombardo et al recorded significant results in terms of the counts of *S mutans* after 1 and 2 months.” However, in our study, we reported a significant alteration only after 8 weeks (T2), and not after 4 weeks (T1). We wrote: “The McNemar test showed a statistically significant increase in *S. mutans* counts between T0 and T2 ($P < 0.05$) in the saliva samples of patients treated with lingual appliance.”

Moreover, on page 827, the authors stated that “Lombardo et al recorded significant results ($P < 0.05$) for the plaque index measurements made before and 1 month after fitting the brackets, as well as for the gingival bleeding index measurements obtained before and 2 months after fitting the orthodontic appliances.” Although this statement is correct, we think readers would appreciate a more comprehensive insight into our findings: namely “No statistically significant differences were found at all time points in the two treatment groups as regards the salivary flow rate and saliva buffer capacity (pH).”

Furthermore, in our article, we described not only intragroup but also intergroup comparisons, and the latter, via the Mann-Whitney U test, “demonstrated no statistically significant differences at any time point as regards PI, salivary flow rate, and saliva buffer capacity (pH). Only the GBI value at T1 term was significantly higher ($P < 0.01$) in the patients treated with labial appliance (Table 4). The comparison between the two groups with Fisher's exact test demonstrated no statistically significant differences at

any time point in the *Lactobacillus* and *S. mutans* counts (Tables 5 and 6).”

Although we are aware that the results of our study could appear complicated and somewhat contradictory, and that there is perhaps insufficient space in a systematic review to report all the aspects, we do feel that readers should be given the opportunity to evaluate the findings as a whole, rather than only in part.

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Am J Orthod Dentofacial Orthop 2016;150:723
0889-5406/\$36.00

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<http://dx.doi.org/10.1016/j.ajodo.2016.07.013>

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2. Lombardo L, Ortan YO, Gorgun O, Panza C, Scuzzo G, Siciliani G. Changes in the oral environment after placement of lingual and labial orthodontic appliances. *Prog Orthod* 2013;14:28.

Authors' response

We were pleased that our study, “Adverse effects of lingual and buccal orthodontic techniques: A systematic review and meta-analysis” (Ata-Ali F, Ata-Ali J, Ferrer-Molina M, Cobo T, De Carlos F, Cobo J. *Am J Orthod Dentofacial Orthop* 2016;149:820-9), has been of interest to you. We wish to thank you for your comments and for allowing us to clarify some of the issues raised.

We agree with Lombardo et al that the results of their study could appear complicated and somewhat contradictory. Furthermore, we agree that for obvious reasons, a systematic review cannot detail all aspects of a single study.

With regard to the second part of the letter, we wish to point out that some points need further consideration or correction in the study. First, the sample size per group was small; this has implications in terms of type I and type II errors. The authors decided to use a long

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