

## Université de Montréal

### MYOFUNCTIONAL APPLIANCES FOR CLASS II CORRECTIONS: EMG OF TWINBLOCK VS MODIFIED XBOW

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Class II correction with myofunctional appliances is common treatment with a growing child. The Twinblock is a popular appliance and researches about its effects on orofacial musculature are numerous. Electromyography (EMG) of the masticatory muscles were measured before and after appliance use and brought up results consistent with possible muscle adaptation. But researchers have not looked upon fixed appliances such as the Xbow<sup>®</sup>. The latter has proven to be more of a dento-alveolar correction but are the muscles affected as well? Given that the treatment goals is similar but the biomechanics are different, we hypothesised that the muscles should adapt in a similar manner whether a Twinblock is used or a modified Xbow. In a pilot study, 14 patients in CVS 2-3 and a class II malocclusion were selected and assigned in a randomised fashion to either one of the appliance. EMG of the suprahyoid muscles, of the masseter and temporal muscles were measured before appliance seat, then one week after, then 5, 13 and 20 weeks. The significantly different results seemed associated with the swallowing exercises, the bilateral masseter and the suprahyoid muscles showed a higher value with the Twinblock than with the Xbow (Repeated measures ANOVA :  $0.01 \leq P \leq 0.09$ ). According to the results, muscle adaptations are very similar in both appliances. It can be then infer that, although both appliance act in a different manner, the patient muscles adapts similarly. Given that data collection is still ongoing, more analyses will shed further light in the near future.