## Evaluation of the Effects of One versus 4 Weeks Activation Intervals on the Rate of Orthodontic Tooth Movement: An Experimental Study

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Abstract

<p style="line-height: 1.785rem; margin-top: 1.43rem; margin-bottom: 1.43rem; color: rgba(0, 0, 0, 0.87); font-family: &quot:Noto Sans&quot:, -apple-system, BlinkMacSystemFont, "Segoe UI", Roboto, Oxygen-Sans, Ubuntu, Cantarell, "Helvetica Neue", sans-serif; font-size: 14px;"><span style="font-weight: bolder;">Objectives</span>: To evaluate the effects of one versus four weeks reactivation of the elastomeric chain on the rate of orthodontic tooth movement (OTM) and supporting structures. 1.785rem; margin-top: 1.43rem; margin-bottom: 1.43rem; color: rgba(0, 0, 0, 0.87); font-family: "Noto Sans", -apple-system, BlinkMacSystemFont, "Segoe UI", Roboto, Oxygen-Sans, Ubuntu, Cantarell, "Helvetica Neue", sans-serif; font-size: 14px;"><span style="font-weight: bolder:">Methods:</span>&nbsp:The 3<span style="font-size: 10.5px; line-height: 0; position: relative; vertical-align: baseline; top: -0.5em;">rd</span>&nbsp;maxillary premolars of 8 male mongrel dogs were extracted. Custom made appliance was constructed so that the 2<span style="fontsize: 10.5px: line-height: 0: position: relative: vertical-align: baseline: top: -0.5em;">nd</span>&nbsp;premolars were allowed to slide bodily. An elastomeric chain with calibrated force of 150g was attached to the hooks of soldered tubes on the 2<span style="font-size: 10.5px; line-height: 0; position: relative; vertical-align: baseline; top: -0.5em;">nd</span>&nbsp;premolarøs crowns. The sample was divided into two groups based on the interval of reactivation of the elastomeric chains used for tooth movement where in group I activation was scheduled every one week versus four weeks in group II. Measurements of the amount and rate of OTM were performed every week for 12 weeks using digital caliper. The animals were then sacrificed and specimens were prepared for decalcified histological examination using Hematoxylin and Eosin stains under light microscope. style="line-height: 1.785rem; margin-top: 1.43rem; margin-bottom: 1.43rem; color: rgba(0, 0, 0, 0.87); font-family: "Noto Sans", -apple-system, BlinkMacSystemFont, "Segoe UI", Roboto, Oxygen-Sans, Ubuntu, Cantarell, "Helvetica Neue", sans-serif; font-size: 14px;"><span style="font-weight: bolder;">Results:</span>&nbsp;No remarkable difference in the rate of OTM between the two groups was reported. The total amount of tooth oqxgogpv"kp" i tqwr "K" y cu"3066 o o "Õ"207"eq o r ctgf"vq"3068 o o "Õ"208"kp" i tqwr "KK0" Histological examination revealed a more favorable tissue reaction associated with 4 weeks reactivation as regards the new formed bone, root resorption and periodontal ligament structure.<p style="line-height: 1.785rem; margin-top: 1.43rem; margin-bottom: 0px; color: rgba(0, 0, 0, 0.87); font-family: "Noto Sans", -apple-system, BlinkMacSystemFont, "Segoe UI", Roboto, Oxygen-Sans, Ubuntu, Cantarell, "Helvetica Neue", sans-serif; fontsize: 14px;"><span style="font-weight:

bolder;">Conclusion: </span>Altering the reactivation interval of the elastomeric chains from four to one week doesnøt have a significant impact on the rate of OTM. However, four weeks reactivation interval showed a more favorable tissue reaction associated with orthodontic tooth movement.

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