

# 3 Dimensional Evaluation of Maxillary Sinuses After Rapid Maxillary Expansion and Following One Year Retention Period

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The purpose of this study was to evaluate volumetric differences of the maxillary sinus on computed tomography data taken before RME, after 3 months of retention and 1 year following retention. Twenty one consecutive patients (11 girls, 10 boys ) who required RME with cap splint Hyrax appliances as part of their orthodontic treatment were studied. Volumetric measurements before (T1), after retention period (T2) and one year following the retention period (T3) of RME were performed using a 3D tomography prototyping software (Mimics v.14.0, Materialise, Belgium). Maxillary sinus regions were isolated in every slice and then the 3D images were constituted. Sinus volumes were measured. The acquired data were compared for three periods by using repeated measures ANOVA and post-hoc comparisons were made by paired samples t-test. In the volumetric evaluation of maxillary sinuses in RME patients, sinus volume increase was statistically significant in all three times ( $P<0.001$ ).

**Key words:** XXXXXXX XXXXXXXXXXX XXXXXXX