[**Print Version**]
[**PubMed Citation**] [**Related Articles in PubMed**]

A meta-analysis of mandibular intercanine width in treatment and postretention

Stephen P. Burke, DDS, MS;[b] Anibal M. Silveira, DDS;[a, c] L. Jane Goldsmith, PhD;[d] John M. Yancey, MA, PhD;[e] Arthur Van Stewart, DMD, PhD, FACD;[f] William C. Scarfe, BDS, FRACDS, MS[g]

[a]Dr. Anibal M. Silveira, University of Louisville School of Dentistry, 501 South Preston Street, Louisville, Kentucky 40292, E-mail: amsilv01@ulkyvm.louisville.edu

[b]Stephen P. Burke is in private orthodontic practice in Dayton, Ohio. This paper represents part of the work he performed for an MS degree in oral biology, Department of Orthodontic, Pediatric, and Geriatric Dentistry, University of Louisville, Louisville, Ky.

[c]Anibal M. Silveira, associate professor, Department of Orthodontic, Pediatric and Geriatric Dentistry, University of Louisville School of Dentistry.

[d]L. Jane Goldsmith, director, Health Science Biostatistics Center, University of Louisville.

[e]John M. Yancey, professor, Department of Diagnosis and General Dentistry, University of Louisville School of Dentistry.

[f]Arthur Van Stewart, professor, Department of Orthodontic, Pediatric and Geriatric Dentistry, School of Dentistry, University of Louisville.

[g]William C. Scarfe, assistant professor, Department of Diagnosis and General Dentistry, School of Dentistry, University of Louisville.

ABSTRACT

The meta-analysis technique of literature review was applied to a total of 26 previous studies to assess the longitudinal stability of postretention mandibular intercanine width. Weighted averages and standard deviations for the means of 1,233 subjects were compared for linear changes in intercanine transverse dimensions during treatment (T1), immediately after treatment (T2), and after removal of all retention (T3). Net change was defined as the difference between means at T3 and T1 . Dimensional changes were also evaluated on the basis of patient pretreatment Angle classification, extraction, and nonextraction treatment modalities of each group. Paired two-tail *t*-tests were performed between T3 and T1 means on all groups at the *a priori* level of significance set at a ≤ 0.05. Statistically significant differences were observed for the following groups: all patients; nonextraction; extraction; Class I; Class I extraction; Class II extraction; and, Class I Division 1 nonextraction. The findings of this study indicate that regardless of patient diagnostic and treatment modalities, mandibular

intercanine width tends to expand during treatment on the order of one to two millimeters, and to contract postretention to approximately the original dimension. While statistically significant differences could be demonstrated within various groups, the magnitudes of the differences were not considered clinically important.