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On the selection and preparation of a wire for the labial bow of an orthodontic retainer

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ABSTRACT

The Hawley retainer is often prescribed by the practitioner for part-time wear during the retentive period subsequent to a program of active, maxillary arch, orthodontic therapy. The labial bow of this retainer, while engaged, may be subjected to contact forces from sources other than the maxillary anterior teeth. The bow also experiences small deformations during placement and removal of the appliance from the oral cavity. Potential failures of the bow are: 1) inelastic bending from individual masticatory actions that change its as-prepared shape; and 2) fracture due to fatigue arising from many cycles of removing and replacing the retainer. Reported in this paper, a sequel to a previous article, are the outcomes of two experiments and a nonparametric analysis that led to the development of a set of recommendations pertaining to the selection of the wire and preparation of the labial bow. Controlled variables in this study were as-received size, alloy and temper of the wire, and heat-treatment following fabrications of bow-specimens.

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