

[\[Print Version\]](#)

[\[PubMed Citation\]](#) [\[Related Articles in PubMed\]](#)

*The Angle Orthodontist*: Vol. 67, No. 4, pp. 271–276.

## The mechanism of Class II correction during Herbst therapy in relation to the vertical jaw base relationship: A cephalometric roentgenographic study

Sabine Ruf, DDS, Dr. med. Dent;<sup>a, b</sup> Hans Pancherz, DDS, Odont. Dr.<sup>c</sup>

<sup>a</sup>Dr. Sabine Ruf, Dept. of Orthodontics, Justus-Liebig-University of Giessen, Schlangenzahl 14, D-35392 Giessen, Germany, Tel. (business) 49-641-99-46121, Fax. 49-641-99-46119, E-mail: [Sabine.Ruf@dentist.med.uni-giessen.de](mailto:Sabine.Ruf@dentist.med.uni-giessen.de)

<sup>b</sup>Sabine Ruf, professor, Department of Orthodontics. University of Giessen, Germany.

<sup>c</sup>Hans Pancherz, professor and head, Department of Orthodontics. University of Giessen, Germany.

### ABSTRACT

This retrospective Herbst study analyzes and compares the sagittal dental and skeletal effects contributing to Class II correction in subjects with small or large pretreatment mandibular plane angles. Lateral headfilms of 15 hypodivergent ( $ML/NSL \leq 26^\circ$ ) and 16 hyperdivergent ( $ML/NSL > 39^\circ$ ) Class II subjects treated to a Class I occlusal relationship with the Herbst appliance were analyzed. Radiographs were taken before and after an average treatment period of 7 months. Cephalograms were evaluated according to the method of Pancherz.<sup>1</sup> In both groups, improvements in sagittal incisor and molar relationships were achieved by greater dental than skeletal changes. The amount of skeletal changes contributing to overjet and molar correction was larger in the hyperdivergent group (37% and 44%, respectively) than in the hypodivergent group (25% and 25%, respectively). Dental and skeletal changes contributing to Class II correction were found to be independent of the vertical jaw base relationship. Thus, a hyperdivergent jaw base relationship did not affect the treatment response unfavorably.

**KEY WORDS:** Herbst appliance, Class II, High angle, Low angle, Treatment effects, Skeletal effects, Dental effects, Mandibular plane angle.

Submitted: June 1996

Accepted: October 1996.