



# Condylar effects with stepwise mandibular advancement vs. maximum jumping



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## Aim

To compare condylar effects of stepwise mandibular advancement (HGA-S) and mandibular maximum jumping (HGA-M) respectively, in headgear activator treatment.

## Subjects

Two samples of consecutively treated skeletal Class II southern Chinese patients, i.e. one sample of 24 patients treated with HGA-S (13 years ± 1.2) and another sample of 31 patients treated with HGA-M (12 years ± 1.5). Growth data was extracted from HGA-M observed 6 months prior to treatment and deducted from treatment change.

## Methods

Cephalograms taken at start (T0), 6 months (T6) and 12 months (T12) after treatment were analyzed (Fig.1), with HGA-S advanced 4mm every 3 months with individualized bite opening for 12 months (Fig.2a,b). With HGA-M, the mandible was advanced edge-to-edge with 6mm interincisal opening, and no headgear was used during the late phase (T6-T12).

## Results

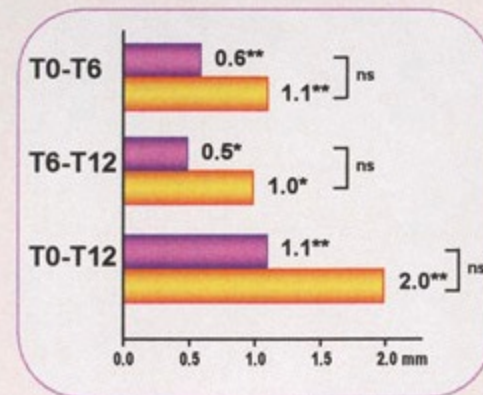


Fig.3 Sagittal condylar treatment effects

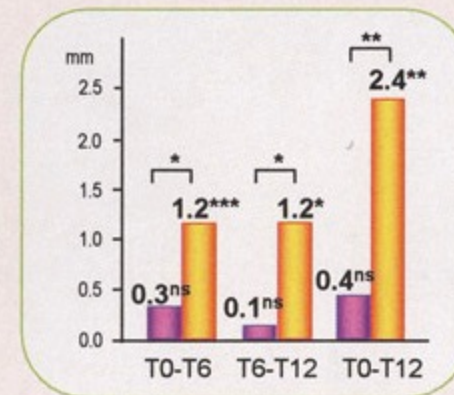


Fig.4 Vertical condylar treatment effects

- There was no statistical difference in sagittal condylar treatment effect between the two devices (Fig.3).
- HGA-S resulted in statistically significant vertical condylar effect during both initial (T0 – T6) and late (T6 – T12) phases, whereas there was no marked effect with HGA-M (Fig.4).

ns: p > 0.05; \*: p < 0.05; \*\*: p < 0.01; \*\*\*: p < 0.001

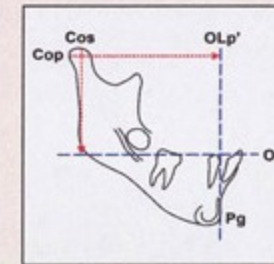


Fig.1 Condylar treatment effects

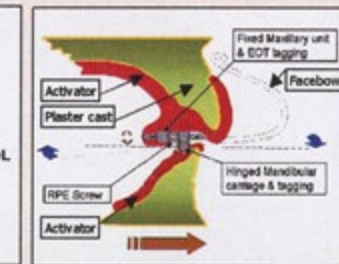


Fig.2a Cross-section of activator with stepwise advancement



Fig.2b Inferior lingual view of activator with screw for stepwise advancement

## Conclusion

The amount and frequency of bite jumping seem to be decisive factors for treatment effect on the condyles in the vertical plane only.