

## **Title: The fixed functional appliance MARA as the optimal mandibular growth enhancement appliance**

A Swedish study by Legrell, Reibel, Nylander et al. (1999) indicates that condylar injury or a displaced disc leads to impaired mandibular growth on the ipsilateral side. It is also evident from a study by McNamara (1975) that class II malocclusions have approximately 86 % mandibular and only around 14 % maxillary causes. Treatment of class II malocclusions, especially in growing patients (children and adolescents), should, therefore, concentrate on treating the mandibula. Furthermore, it is a fact that the relevant patient group is often not as compliant at wearing removable class II correction appliances as would be necessary for successful treatment. A solution to this problem complex is a fixed functional class II correction appliance. Several of them have been put on the market. Most common are the Herbst appliance, the Jasper Jumper and the Mandibular Anterior Repositioning Appliance (MARA). There are certain advantages of the MARA versus the Herbst appliance. It has been shown by Gönner, Özkan, Toll et al. (2005) that the MARA causes less lower anterior tipping than the Herbst. The MARA also exerts less “headgear effect” (global restraint of maxillary growth and distalisation of the upper molars) than the Herbst appliance, as a study by Pangrazio-Kulbersh, Berger, Chermak et al (2003) indicates.

How does mandibular growth stimulation with the MARA work? Is it really a stimulation of mandibular growth, i.e. is there really a notable skeletal effect? Or is the mechanism – as also in adult patients – dentoalveolar? Do we see a combination of both, but a different ratio in growing versus non-growing patients? What exactly are indications for the MARA and what are the limits? The talk will attempt to answer all these questions and give detailed insight into the clinical indications and effects of the MARA in growing patients.

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