

**FEATURES
SECTION**

Evidence-based orthodontics

Structured abstracts of clinical trials

American Journal of Orthodontics and Dentofacial Orthopaedics 2001, 121, 9–17.

Effectiveness of early treatment of Class II malocclusion.

Wheeler TT, McGorray SP, Dolce C, Taylor MG and King GJ.

Objective: To examine and identify factors associated with the effectiveness of headgear/ biteplane or bionator treatment for Class II malocclusions.

Design: Randomized controlled trial.

Setting: University of Florida, Gainesville, USA

Participants: Two hundred and seventy seven patients with \geq unilateral $\frac{1}{2}$ unit Class II molars and \leq 3 permanent canines or premolars erupted.

Interventions: *Experimental*—Headgear (MPA \leq 40 degrees—cervical; MPA $>$ 40 degrees—high-pull), and a URA with FABP or bionator followed by retention or no retention. *Control*—Observation only.

Outcome measures: *Primary*— Class I molar relationship.

Factors examined—Initial molar relationship and overjet, MPA, demographic characteristics, bone age, and compliance.

Results: Two hundred and forty eight patients (89.5 per cent) completed phase I. Class I molar relationship was obtained in 65 per cent of the headgear/biteplane group; 44 per cent of the bionator group and 8 per cent of the observation group by the end of the active treatment/ observation period ($p = 0.001$) and 50, 38, and 13 per cent, respectively, at the end of phase I ($p = 0.001$). Logistic regression suggested a milder molar relationship, older bone age, higher compliance score, male sex, non-white race, pre-treatment alignment and headgear/ bite plane treatment increased the probability of success ($p = 0.001$) at the end of phase I. Logistic regression identified treatment success, white race, treatment goal, and female sex as being associated with greater relapse.

Conclusions: When factors affecting the outcome of treatment are taken into account headgear/ bite plane is superior to a bionator at correcting Class II molars.

Implications: Headgear/biteplane treatment appears to be the preferred option when you want to correct a Class II molar relationship.

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The psychological impact of orthognathic surgery: a systematic review.

Hunt OT, Johnston CD, Hepper PG and Burden DJ.

Objectives: To assess whether orthognathic surgery gives patients psychological benefits and, if so, what they are and how long they last.

Design: A systematic review.

Data sources: MEDLINE, PsycINFO, Science Citation Index, Social Science Citation Index databases were searched. Key orthodontic, oral surgery, and psychology journals from 1984 (or date of first publication) to 2000 were handsearched together with reference lists from relevant articles. There were no language barriers.

Data selection: RCTs; prospective and retrospective studies \pm controls; cross-sectional or longitudinal studies using interviews, questionnaires and/or clinical examination of patients who were considering, about to undergo or had completed orthognathic surgery were eligible. Studies of patients with syndromal conditions were excluded. A total of 1175 articles were identified as potentially relevant, of which 112 were concerned with the psychological aspects of orthognathic surgery and 29 were included in the review.

Data extraction: Two reviewers independently assessed the abstracts and papers, and extracted data. One cohort study with concurrent controls, 16 prospective and 10 retrospective uncontrolled studies and two cross-sectional studies were identified. Twenty-nine different validated and some unvalidated questionnaires had been used to assess the psychological status of orthognathic patients.

Data synthesis: No formal data synthesis was undertaken. Descriptive synthesis of the results indicated that patients may gain many psychosocial benefits from orthognathic surgery.

Conclusions: Orthognathic surgery does have psychosocial benefits although the strength of evidence was weak. The benefits included improved self-esteem; self-confidence; body image; facial-attractiveness image; personality; social functioning; emotional stability; interpersonal relationships; employment prospects. Reductions in anxiety and self-consciousness were noted. The benefits appeared to remain.

Implications: The psychosocial implications of orthognathic surgery should not be overlooked. Well controlled longitudinal studies, using appropriate validated psychological tools, need to be undertaken to allow a more objective assessment of the impact of orthognathic surgery to be made.

Angle Orthodontist 2002, 72, 61–71.

Effects of a modified acrylic bonded rapid maxillary expansion appliance and vertical chin cap on dentofacial structures.

Basciftci FA and Karaman AI

Objectives: To assess the effects of an acrylic bonded RME appliance, with and without a vertical chin cap, on dentofacial structures.

Design: Controlled clinical trial.

Setting: Selcuk University, Turkey.

Participants: Thirty-four patients, in the permanent dentition, with a posterior crossbite and maxillary collapse.

Interventions: Acrylic bonded RME appliance without (Group 1) or with (Group 2) the addition of a vertical chin cap.

Outcome measures: Primary—crossbite correction.

Secondary—Twenty-three cephalometric measures and six measurements from plaster models.

Results: All patients had their posterior crossbite corrected. There were significantly smaller changes SNB ($p < 0.05$), ANB ($p < 0.001$), SN-MP ($p < 0.001$), MP-PP ($p < 0.05$), ANS-Me ($p < 0.01$), SN-6 ($p < 0.01$) and OB ($p < 0.001$) occurring in Group 2 during treatment. Changes occurring in the two groups during retention were not significantly different. Differences in treatment changes were maintained during retention.

Conclusions: The addition of a vertical chin cap controls the vertical changes that occur during RME treatment thus preventing downward and backward rotation of the mandible and a reduction in overbite.

Implications: In cases where expansion of the maxilla is required and the overbite is reduced, it is worth considering the addition of a vertical chin cap to prevent the undesirable consequences of RME treatment and maintain vertical relationships.