

Are Sleep Disordered Breathing Symptoms and Maxillary Expansion Correlated? A Prospective Evaluation Study

Study Background: The aim of this study was to investigate whether Sleep Disordered Breathing (SDB) symptoms are common in patients needing maxillary expansion and whether maxillary expansion could influence Sleep Disordered Breathing symptoms on a short-term.

Methods: In this prospective study, questionnaires were administered at baseline (T1) in 62 children (CST1) and 33 adults (AST1) in need of maxillary expansion. Three months after the start of orthodontic retention (T2), 39 children (CST2) and 31 adults (AST2) filled in the questionnaires for comparison.

Results: Children who needed maxillary expansion (CST1) reported more mouth breathing compared to the control group (CCo) ($P=0.003$). The mean score of the Pediatric Sleep Questionnaire and the score of the behavior subscale significantly improved after treatment ($P=0.010$ and $P=0.015$ respectively). AST1 patients were characterized by a higher prevalence of shortness of breath ($P=0.012$). No statistically significant improvements were seen in adults after treatment (AST2).

Conclusions: Breathing related symptoms such as mouth breathing and shortness of breath during the night had a higher prevalence in patients in need of maxillary expansion. Sleep Disordered Breathing symptoms improved after treatment in children. Further follow-up is needed to clarify the role of maxillary expansion in the treatment of Sleep Disordered Breathing.

Current Knowledge/Study Rationale: Several studies have shown the positive effect of maxillary expansion on SDB symptoms. This study aimed to document whether SDB symptoms are common in patients needing orthodontic maxillary expansion and if SDB symptoms improve after treatment. **Study impact:** If SDB symptoms are more common in patients needing orthodontic expansion, screening is advised to improve or prevent SDB symptoms.