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Pediatric obstructive sleep apnea and the critical role of oral-facial growth: evidences

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**Aims:** Review of evidence in support of an oral-facial growth impairment in the development of pediatric sleep apnea in non-obese children. **Method:** Review of experimental data from infant monkeys with experimentally induced nasal resistance. Review of early historical data in the orthodontic literature indicating the abnormal oral-facial development associated with mouth breathing and nasal resistance. Review of the progressive demonstration of sleep-disordered-breathing (SDB) in children who underwent incomplete treatment of OSA with adenotonsillectomy, and demonstration of abnormal oral-facial anatomy that must often be treated in order for the resolution of OSA. Review of data of long-term recurrence of OSA and indication of oral-facial myofunctional dysfunction in association with the recurrence of OSA. **Results:** Presentation of prospective data on premature infants and SDB-treated children, supporting the concept of oral-facial hypotonia. Presentation of evidence supporting hypotonia as a primary element in the development of oral-facial anatomic abnormalities leading to abnormal breathing during sleep. Continuous interaction between oral-facial muscle tone, maxillary-mandibular growth and development of SDB. Role of myofunctional reeducation with orthodontics and elimination of upper airway soft tissue in the treatment of non-obese SDB children. **Conclusion:** Pediatric OSA in non-obese children is a disorder of oral-facial growth.

**Keywords:** pediatric sleep-disordered-breathing, non-obese, oral-facial anatomy, hypotonia, oral-facial growth, oral-facial myofunctional dysfunction

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