

[HNO](#). 1996 May;44(5):229-34. [Links](#)

[Effect of breathing mode and nose ventilation on growth of the facial bones]

[Article in German]

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Correlations between breathing mode and craniofacial morphology were investigated in 47 children at the ages of 6-15 years (average, 9.9 years). Apart from history and clinical examination, nasal endoscopy, rhinomanometry and measurements of cephalometric radiographs were included in the analysis. After separating the patients into a "normal face" group and a "long face" group by measuring the angle between the frontal skull base and the mandibular plane, we analyzed the data in attempting to correlate nasal obstruction with craniofacial development. Findings demonstrated a significant predominance of mouth-breathing compared to nasal breathing in the vertical growth patterns studied. Furthermore, significant differences were found during nasal endoscopy in the growth pattern and were attributed to large adenoids. These findings were confirmed separately in all patients up to the age of 9 years, but differences were clearer. Rhinomanometry and planimetric measurements of the sizes of the adenoids in craniofacial radiographs showed no unambiguous differences between the patient groups. Our present study was not able to establish clear causal correlations between mouth-breathing, craniofacial development and adenoid size, suggesting that existing genetically determined craniofacial growth patterns are modulated by exogenic influences. Nonetheless, our results show a correlation between obstructed nasal breathing, large adenoids and vertical growth patterns.

PMID: 8707626 [PubMed - indexed for MEDLINE]