

Oral Breathing and Head Posture

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FROM ABSTRACT

Objective: To determine the head posture and cephalometric characteristics in oral breathing children.

Materials and Methods: Lateral cephalograms taken in natural head posture of 35 oral breathing patients (OB) (mean age 8.8 ± 2.2 years SD; range 5–13 years) and of 35 patients with varied malocclusions and physiological breathing (PB) (mean age 9.7 ± 1.6 years SD; range 7–13 years) were examined.

Conclusions: Our data suggest that OB children show greater extension of the head related to the cervical spine, reduced cervical lordosis, and more skeletal divergence, compared with PB subjects.

THESE AUTHORS ALSO NOTE:

Oral breathing changes human head posture.

“The head position relative to the cervical spine is the result of integration at the central nervous system level of different external and internal inputs, including visual, cutaneous, musculotendinous, and vestibular receptors.”

Breathing can have considerable effects on the morphology and on the craniofacial and cervical functions.

Head extension represents a functional answer to facilitate oral breathing (OB) in order to compensate nasal obstruction.

Studies show that procedures that increase the capacity of the nasopharyngeal airways leads to significant changes in the craniocervical angles. **[Important]**

Studies “indicate that total nasal obstruction, by the use of a nose clip, induces a change in head posture (head elevation).”

Improvement in nasopharyngeal resistance following tonsillectomy or adenoidectomy or after cortisone therapy in children with asthma and chronic rhinitis improves craniocervical angulation. **[Important]**

In one study, there was no improvement in nasal airway resistance following cranial extension obtained by manipulation. **[Important]**

In this study, the craniofacial measurements were obtained from radiographs.

Certain craniofacial measurements are associated with increases in nasopharyngeal airway resistance.

The postural radiographs were taken with the subject standing in neutral head posture.

DISCUSSION

"Oral respiration alters the muscle forces exerted by the tongue, cheeks, and lips upon the maxillary arch. Intraorally, the dentist might expect to find a narrow maxillary arch with a high palatal vault, a posterior crossbite, a Class II or III dental malocclusion, and an anterior open bite."

"An abnormal posture of the head changes the load in several joints of the craniovertebral region, resulting in unfavorable dentofacial and craniofacial growth."

"Our main finding is that in OB patients a well-defined postural picture is often evident: reduction of cervical lordosis and increased extension of the atlanto-occipital joint to maintain the Frankfurt plane horizontal."

"Several studies have shown that OB is connected with a variation in the head posture and with a increased craniocervical extension in order to increase the dimension of the airway and the oropharyngeal permeability with mandibular and lingual postural modifications, and of the soft palate as well."

Studies have demonstrated, by rhinomanometric tests, a significant relationship between smaller distance craniofacial measurements and impaired nasal breathing along with a wide craniocervical angulation and forward inclination of the cervical spine.

CONCLUSIONS

"Oral breathing causes an increase in head elevation and a greater extension of the head related to the cervical spine and influences hyoid bone position and intermaxillary divergence."

"Oral breathing during growth may alter neutral head posture, as well as craniofacial morphology."

"Changing the mode of breathing from oral to nasal early in adolescence may promote a tendency towards normalization of the craniofacial dimensions with growth."

KEY POINTS FROM DAN MURPHY

- 1) This study suggests that children who are poor nasal breathers become oral breathers.
- 2) Oral breathing children show greater extension of the head related to the cervical spine, reduced cervical lordosis, and increased skeletal divergence.
- 3) Oral breathing changes human head posture.
- 4) "The head position relative to the cervical spine is the result of integration at the central nervous system level of different external and internal inputs, including visual, cutaneous, musculotendinous, and vestibular receptors."
- 5) Breathing can have considerable effects on the morphology and on the craniofacial and cervical functions.
- 6) Head extension represents a functional answer to facilitate oral breathing in order to compensate nasal obstruction.
- 7) Studies show that procedures that increase the capacity of the nasopharyngeal airways leads to significant changes in the craniocervical angles. **[Important]**
- 8) Studies "indicate that total nasal obstruction, by the use of a nose clip, induces a change in head posture (head elevation)."
- 9) Improvement in nasopharyngeal resistance following tonsillectomy or adenoidectomy or after cortisone therapy in children with asthma and chronic rhinitis improves craniocervical angulation. **[Important]**
- 10) There is no improvement in nasal airway resistance following cranial extension obtained by manipulation. **[Important]**
- 11) There is an association between reduced craniofacial measurements and increases in nasopharyngeal airway resistance.
- 12) "Oral respiration alters the muscle forces exerted by the tongue, cheeks, and lips upon the maxillary arch. Intraorally, the dentist might expect to find a narrow maxillary arch with a high palatal vault, a posterior crossbite, a Class II or III dental malocclusion, and an anterior open bite."
- 13) "An abnormal posture of the head changes the load in several joints of the craniovertebral region, resulting in unfavorable dentofacial and craniofacial growth."

- 14) "Our main finding is that in OB patients a well-defined postural picture is often evident: reduction of cervical lordosis and increased extension of the atlanto-occipital joint to maintain the Frankfurt plane horizontal."
- 15) "Several studies have shown that oral breathing is connected with a variation in the head posture and with a increased craniocervical extension in order to increase the dimension of the airway and the oropharyngeal permeability with mandibular and lingual postural modifications, and of the soft palate as well."
- 16) Studies have demonstrated, by rhinomanometric tests, a significant relationship between smaller distance craniofacial measurements and impaired nasal breathing along with a wide craniocervical angulation and forward inclination of the cervical spine.
- 17) "Oral breathing causes an increase in head elevation and a greater extension of the head related to the cervical spine and influences hyoid bone position and intermaxillary divergence."
- 18) "Oral breathing during growth may alter neutral head posture, as well as craniofacial morphology."
- 19) "Changing the mode of breathing from oral to nasal early in adolescence may promote a tendency towards normalization of the craniofacial dimensions with growth."
- 20) It is acceptable to take postural radiography and to obtain meaningful measurements from them.

COMMENTS FROM DAN MURPHY

This study indicates that cervical spine postural distortions that many chiropractors consider to be clinically important, such as upper cervical extension and loss of cervical lordosis, may be the result of poor nasal breathing and consequent oral breathing. If these postural distortions occur in childhood and adolescence, they alter the normal growth of cranial bones and possibly of the cervical spine. This article should be of particular importance to chiropractors that perform the Nasal Specific Balloon Technique. This technique adjusts the cranial bones through the nasal passages improving nasal breathing and cranial-cervical posture.