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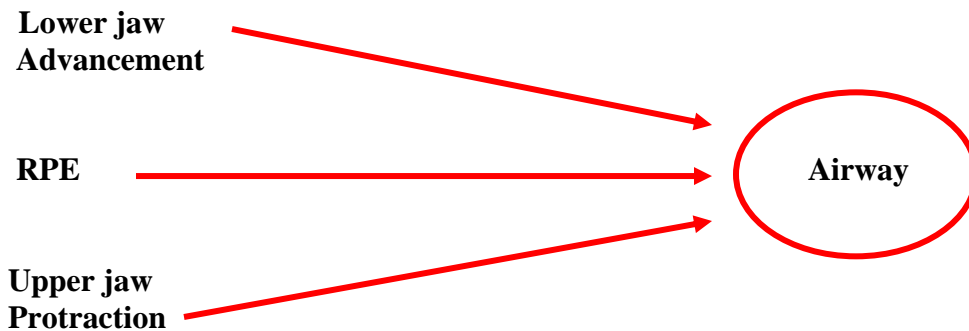
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## Some airway problems maybe improved by orthodontic treatment

A compromised nasal airway can be responsible for a host of problems for the growing child. It may induce Long Face Syndrome, mouth breathing, dry lips, swollen gums, reduction of daily activities, lack of concentration both at school and at home due to not enough sleep and other related matters.<sup>1 2 3</sup>

Before puberty, in most cases, the suture lines that form the upper jaw have not yet fused together,<sup>4</sup> so it is possible to expand the upper jaw for the young child. Whenever the upper jaw is expanded, the nasal cavity will get bigger as well and air volume is increased. For some children, this expansion of the nasal cavity can improve their airway. This concept has many published documents to support it.<sup>5 6 7 8</sup> Unfortunately, due to the complexity and sophistication of the human body, the treatment outcome may vary from individual to individual.

Certain malocclusions (such as under bite, smaller lower jaw, and narrow upper and lower arches) may have some association with airway problems in some children. Very often, by correcting the malocclusion, the person's airway may improve and the facial growth may improve as well.<sup>9 10 11</sup>



In treating concerns regarding the nasal airway, our recommendation is to have a thorough medical exam with various health professionals such as Pediatrician, Family Physician, Allergist, ENT, Pedodontist and Orthodontist according to the patient needs. Another very useful tool in diagnosing the problems is the three dimensional imaging of the airway.

<sup>1</sup> Mark, Meyer B. Stigmata of respiratory tract allergies

<sup>2</sup> Linder-Aronson, Sten, Woodside, Donald. Excess Face Height Malocclusion

<sup>3</sup> Ricketts, R.M., Bench, R. W., Gugino, C.F., Hilgers, J.J., Schulhof, R. J. Bioprogressive Therapy

<sup>4</sup> McMinn, Hutchings, Logan. Color Atlas of Head and Neck Anatomy

<sup>5</sup> McNamara, Jr., J., Brudon, Williams. Orthodontics and Dentofacial Orthopedics

<sup>6</sup> Patti, A., Perrier D'Arc, G., Clinical Success in Early Orthodontic Treatment

<sup>7</sup> Riski, J., Nasal Airway Interference: Considerations for Evaluation. *Int'l Journal of Orofacial Myology. Vol. 14, No. 1*

<sup>8</sup> Weimert, T., Gottlieb. Airway Obstruction in Orthodontic Practice. *Journal of Clinical Orthodontics, Feb.,1986*

<sup>9</sup> "Changes in Airway Dimensions with Maxillary Protraction", Article reviewed by Brent E. Larson, DDS, SayinsuK, IsikF, Arun T.

Sagittal Airway Dimensions Following Maxillary Protraction: APilot Study. *Eur J Orthod 2006;28(April): 184-189*

<sup>10</sup> "Effects of Maxillary Protraction on the Pharyngeal Airway", Article reviewed by Vincent G. Kokich, DDS, MSD, Kaygisiz E, Tuncer BB, et al. Effects of Maxillary Protraction and Fixed Appliance Therapy on the Pharyngeal Airway. *Angle Orthod 2009; 79 (4): 660-667*

<sup>11</sup> Shapiro, Peter. Stability of open bite treatment. *AJO-DO Vol. 121, No.6, June 2002*