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Nasal admixture during mouth breathing in awake normal subjects.

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We tested the flow-impeding properties of the nasopharynx in 27 healthy subjects with normal nasal resistance (mean +/- SD: 2.45 +/- 1.92 cmH₂O.l-1 X s). While the subjects inspired and expired deliberately through a rubber mouth-piece, a tight-fitting nose-mask was supplied with 100% O₂ from a filled 30-l rubber bag. Recording instantaneous FEO₂ at the mouth was a sensitive indicator of whether nasal flow was present during the preceding inspiration. On a theoretical basis, we are describing a method of calculating the mean percentage of nasal admixture during inspiration. Fluctuations in FEO₂ in relation to time revealed varying nasal flow in some individuals. The mean nasal admixture differed considerably between all subjects (mean +/- SD: 20.9 +/- 16.5%; range: 1-70%), showing no correlation to nasal resistance. Five of 27 subjects with a history of habitual mouth breathing had a significantly lower nasal admixture (2.5 +/- 1.7% vs 25.1 +/- 15.4%; p less than 0.005), with no statistical difference in nasal resistance. Present data indicate that upper airway patency is variable in normals during voluntary mouth breathing. We suggest that habitual mouth breathing with absence of nasal obstruction may be associated with velopharyngeal narrowing.

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