

## Sleep Disorder Breathing: 9 Clinical Cranial Morphological Indicators for Dentists

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**Abstract:** Sleep disordered breathing (SDB) is a condition characterized by intermittent partial or complete airway obstruction that disrupts normal ventilation during sleep and normal sleep patterns.<sup>1</sup> Approximately 10% of 6-8 year olds have SDB according to a Finnish study.<sup>2</sup> There is no consensus on the definition of pediatric SDB, but clinically there is a spectrum of symptoms, in which the milder forms only have primary snoring and mouth-breathing, while the more severe forms have symptoms similar to the more defined entity obstructive sleep apnea syndrome (OSAS), i.e., intermittent breathing pauses (apneas), habitual snoring, snorts or gasps, disturbed sleep, and daytime neurobehavioral problems with impaired school performance.<sup>3</sup> The impact of SDB on the growth and development of children may have detrimental effects on health, neuropsychological development, quality of life, and economic potential.<sup>4</sup> Understanding the parameters of early diagnosis and treatment are paramount to stemming this problem.

**Key words:** Sleep disorder breathing, SDB, sleep apnea, OSA, lingual frenum, retruded mandible, long face, hyoid bone, UARS, upper airway restrictions, high palate, crossbite, mouth breathing, tonsils

### Nine Cranial Morphological Indicators of Sleep Disorder Breathing

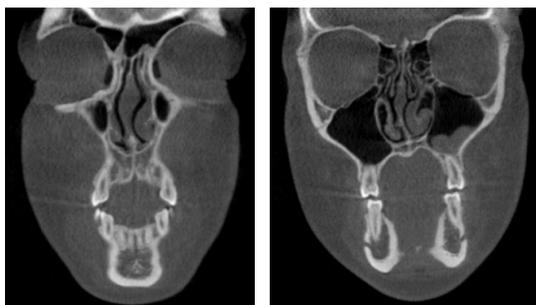
1. A retruded maxilla and/or mandible,<sup>5</sup> a long face height and restrictions in the space of the upper airway.<sup>6,7</sup>



2. A long face height<sup>5,6</sup>



3. Restrictions in the space of the upper airway<sup>5,6</sup>



4. Study model analyses demonstrated that OSA subjects differ significantly from control subjects in palatal height measurements.<sup>6</sup>



5. Crossbite and open bite malocclusions were associated with SDB, and may be predictive of SDB in children.<sup>7</sup>



6. Lingual frenum ... leads to a skeletal malocclusion, with the degree being influenced by the different levels of attachment of the frenum on the tongue.<sup>8</sup>



7. The vertical position of the hyoid bone is believed to be a predictor of obstructive sleep apnea (OSA).<sup>9</sup>



8. Mouth-breathing can influence craniofacial and occlusal development early in childhood.<sup>10</sup>



9. Enlarged tonsils, childhood OSAS (obstructive sleep apnea syndrome) usually stems from adenotonsillar hypertrophy. OSAS in infants is usually related to craniofacial anomalies.<sup>11</sup>



Sleep disorder breathing (SDB) is the current buzz around the medical community. In the July 23, 2012 edition of the *Fiscal Times* an article on “Sleepless in America” indicated that sleep is a \$32.4 billion dollar business.

Dentist should be the first line of diagnosis for SDB, dentists see their patients more frequently than most pediatricians and internists. Understanding and recognizing the cranial morphological indicators of sleep disorder breathing and then treating or referring are paramount in stemming this ever increasing healthcare problem and expense

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