Sleep-disordered breathing (SDB) in children

Childhood sleep-disordered breathing (SDB) can range from mouth breathing, snoring, upper airway resistance to obstructive sleep apnea. SDB causes abnormal gas exchange, interferes with sleep's restorative processes, and disrupts cellular and chemical homeostasis that increases neurobehavioral morbidity in children.

Mouth breathing usually appears as a first stage and obvious sign for breathing disorders. It has been studied since the beginning of the twentieth century, with scientific publications directed to the scope of dentistry emphasizing the occlusal consequences. This condition, considered as a public health problem, is attracting growing scientific interest in recent years, and greater coverage in the multidisciplinary aspects surrounding it. According to a Brazilian study, Abreu et al, 2008 reported that 55% of children aged from 3 to 9 years are mouth breathers in a sample of 370 children.

Signs and symptoms including daytime sleepiness, headache, agitation and nocturnal enuresis, frequent fatigue, poor appetite, bruxism, school problems and even learning deficits and behavioral problems. Some children are misdiagnosed with Attention Deficit Hyperactive Disorder (ADHD) while they are suffering from sleep disordered breathing; because most of signs and symptoms are common in both disorders.

Treatment with appropriate dental appliances in parallel with orofacial myofunctional therapy can overcome sleep-disordered breathing in children. Dental appliances guide child's teeth for proper occlusion, ensure proper tongue position against soft palate and promote nasal breathing. Moreover, special orthodontic appliances involve expansion of the upper arch or anterior posturing of the mandible and tongue during sleep.

Orofacial myofunctional therapy aims to train facial and oral muscles. This technique is based on the neuromuscular re-patterning and includes facial exercises and behavior modification techniques to promote proper tongue position, improved breathing, chewing and swallowing. Current literature demonstrates that orofacial myofunctional therapy decreases apnea-hypopnea index by approximately 62% in children as reported by Camacho et al., 2015. Moreover, Moeller et al., 2014 concluded that removing the tonsils and adenoids does not always change the breathing pattern from oral to nasal if not combined with orofacial myofunctional therapy.

A multidisciplinary approach is recommended to treat SDB in children; which involves the contribution of pediatricians, ENT specialists, pediatric dentists and orofacial myofunctional therapist.