Sleep-disordered breathing occurs when there is interference of the free passage of air to and from the lungs through the nose and pharynx; often called sleep disordered breathing; hypopnea (low breathing) and apnea (complete stoppage) which interrupts a child’s sleep cycle and prevents them from completing a full night’s sleep and often has serious medical implications. Both of these symptoms can present from birth to any age. Nighttime mouth breathing also occurs frequently in children. Any child that snores fairly frequently and sleeps with their mouth open often suffers from lack of sleep and as a result also frequently has oxygen desaturation of the blood. The various symptoms listed below occur in about 1 out of 5 children who often snore.

Early intervention is effective in the deciduous through transitional dentition (4 to 10 years of age) to successfully treat children with sleep problems. There are several serious symptoms that can occur in children with improper sleep habits:

1. Snoring from 2 to 7 nights per week
2. Hyperactivity
3. Excessive daytime sleepiness
4. Daytime and/or nighttime mouth breathing
5. Attention deficit
6. Tooth grinding
7. Restless sleep  
8. Throat infections  
9. Difficult breathing while sleeping  
10. Bed wetting  
11. Poor ability to study  
12. Headaches in the morning  
13. Sleep talking  
14. Falling asleep watching TV  
15. Allergic symptoms  
16. Awakening at night

These common symptoms are over 2 times more prevalent in habitual snorers (5 to 7 nights per week) than in non-snorers (16.8% vs. 40.2%). In fact, in those children that snore periodically (2 to 4 nights per week) have 1.6 times the incidence of these 16 symptoms over those children that do not snore (16.8% vs 26.1%).

How to Identify, Treat, And Cure

A dentist is often the first in line to diagnose abnormal breathing symptoms, and is the logical person to initiate treatment of any associated orthodontic problems. As a result, the dentist can also be the one to initiate such interceptive treatment that can greatly benefit the young patient.

The Perfect Start Treatment is designed to address interrupted breathing habits. Sleep deprivation in children, particularly between 3 and 10 years of age, most often affects their behavior and these characteristics are often strong indications of problems

A Dentist should get more information from the parent by having them fill out a questionnaire.

Several important questions should be asked of the parent of a young child of 3 to 10 years of age. The following questions are the important ones to ask a parent:

1. Does your child snore?
2. Does the snoring occur 2 to 4 nights a week (moderate snoring)?
3. Or does it occur 5 to 7 nights a week (habitual snoring)?
4. Is it interrupted snoring where the child stops breathing?
5. Does this interrupted snoring last 4 seconds or more at least twice per hour?
6. Is your child hyperactive?
7. Does your child lack attention (attention deficit)?
8. Does the child have headaches in the morning?
9. Sweat profusely while sleeping?
10. Is your child fidgety?
11. Do you have trouble understanding the child’s speech?
12. Have trouble pronouncing consonants like P, B, V, T, etc.
13. Is the child a restless sleeper?
14. Look sleepy during the day?
15. Does poorly in school, particularly in mathematics or spelling?
16. Does your child breathe through the mouth?
17. Does your child often wet the bed at night?
18. Does your child grind his or her teeth?
19. Does your child often have nightmares?

(Sahim et al, 2009; Urschitz et al, 2004)

Reviewing data (from Sahin, Eitner, and Guenther, 2004) indicate that ADD, ADHD, daytime sleepiness, restless sleep, daytime mouth breathing, bed wetting, tooth grinding, poor school performance and morning headaches are 290% more prevalent in the habitual snorers than in non-snorers. Swollen tonsils and adenoids should be routinely checked on all children.

Testing for poor sleep breathing for children is done with polysomnography — the overnight sleep study; if apneic events and lowered blood oxygen are found, physicians most often prescribe surgery or PAP therapy. Typical dental appliances that advance the mandible in adults are not appropriate for treating airway issues in children, since they may cause excessive lower jaw growth. It takes a growth-oriented approach for dentists to impact airway health.

Treatment

The Perfect Start System is a series of specially designed appliances that are provided to help promote proper breathing habits. The system addresses mouth breathing, an open-bite, narrow palate, sucking and swallowing problems, and speech difficulties. The system prevents the mandible from slipping posteriorly while sleeping which stops the snoring.

Earl O. Bergersen, DDS, MSD, is former assistant professor, Northwestern University Orthodontic Department and was in former private practice in Winnetka, Illinois.
maintains an open airway, and can prevent many of the symptoms of sleep-disordered breathing.

The advancement of the mandible can stimulate 54% more mandibular growth when compared to a similar control sample from 5 to 8 years of age. The Perfect Start™ treatment moves the lower jaw in an anterior direction in the proper amount while also advancing the tongue. The Perfect Start™ System treats additional orthodontic problems such as crowding, overbite, overjet, gummy smiles and lack of coordination between the arches. These conditions can be corrected with the Perfect Start™ System will little or no future relapse of the correction.

A typical example of the mandibular advancement possible with the Perfect Start Kids™ appliance is seen in Figures 1A-1B. One should always be aware that children with recessive mandibles are also strong candidates for restricted pharyngeal airways and sleep-disordered breathing.

For further information on The Perfect Start™ System, please visit www.perfectstart.com, e-mail info@perfectstart.com, or call 1-844-413-2166.

Typically Asked Questions

Q. Can you give an example of a typical child that had these problems and the result obtained?
A. A 6 ½ year old boy in 2nd grade snored regularly, was a night mouth-breather, was hyperactive, had attention deficit, poor school performance, restless sleep, aggression toward peers, sleep talking and talking, poor ability to study, and bed wetting. He was given a Perfect Start “C” series and wore it only at night for 2 years. He immediately stopped snoring and only breathed through the nose while sleeping. His mathematics achievement had a 950% improvement (from the 6th to 57th percentile) and had a 3.84 grade point average (out of 4.0) at the end of 4th grade. Most of his behavioral problems were non-existent at the end of the 2 year period.

Q. What school subjects are most improved with this procedure?
A. Mathematics, science and spelling show significant improvement while reading and writing are usually not affected.

Q. If children have a sleep disorder, what is the likelihood of developing ADD / ADHD?
A. Children with moderate (19.8% of children) and severe (13.8%) sleep problems are 12.1 times more likely to have ADD / ADHD.

Q. Do these behavioral problems self-correct with increase in age?
A. No they do not; they tend not to improve or get worse with increasing age.

Q. Does an untreated child develop into an adult with severe breathing problems?
A. There is no research at present that can confirm this, but genetics does play a role.

Q. Are there other health problems that can occur when these sleep problems are left untreated?
A. The most severe health risks have to do with cardiovascular problems, high blood pressure, hypertrophy of the right side of the heart, low blood flow to the lungs, depression, poor physical growth, and speech problems.

References