

Bed Wetting and Pediatric Sleep Apnea – Parent’s Information Report

Bed wetting along with several other common childhood problems, can be caused by a compromised airway which can lead to Sleep Disordered Breathing (SDB) in children. Another name for this condition in children is “Pediatric Sleep Apnea”. There are several signs and symptoms that if you know to look for, will help you know if your child suffers from a constricted airway.

This problem is much more common in children than most health professionals and or parents realize. To make matters worse, many if not most of the symptoms related to poor growth and development of the jaws and airway are misdiagnosed or simply unrecognized and not diagnosed at all.

The truth is that emerging research over the last 20 years has established important links between childhood breathing problems and childhood health / behavior issues that plague as many as 9 out of 10 children.

**9 out of 10 children
suffer from Sleep
Disordered
Breathing
Symptoms,
including Bed-
Wetting**

The Central Issue

The central issue for children suffering with Sleep Disordered Breathing is related to a compromised airway. With a constricted or under-developed airway your child struggles to receive enough oxygen at night.

Instead of getting a restful night’s sleep, the reduction in oxygen causes stress hormones to be produced. Despite being “asleep”, this subtle form of suffocation is very unsettling to the brain. It can create a “flight or fight” response and is sometimes accompanied by nightmares / night terrors ... all of which yields restless sleep and prevents good REM and deep Delta-stage health-restoring sleep. Bed wetting and lack of bladder control is another one of the unpleasant outcomes that happen with an imbalance of oxygen and stress hormones which create a “fight or flight” stress response.

The Troubles with Mouth Breathing

When a child struggles to get enough air during the night they usually resort to open-mouth breathing. But this only compounds the problems.

Mouth breathing is very different from nasal breathing. Mouth breathing allows dry, cool, unfiltered air into the throat and lungs. This is irritating to the throat, tonsils and lungs, and leads to increases in inflammation and throat/tonsil/ear infections - as well as decreased oxygen levels in the bloodstream generally. When this is added to the disruption in sleep cycles and not getting restful sleep, it yields restless sleep, decreased immune system function, and a stressed exhausted child often not able to think or behave well.

Conversely, when air travels through the nose it is filtered, warmed and moistened (humidified). This allows for better blood-oxygen levels – meaning more oxygen makes it to the brain, which in turn restores better brain function for the next day – resulting in a happier child. Simply put, everything works better!

Interestingly, the same principles apply at the other end of the age spectrum with adults who have sleep apnea. However, rather than misbehaving and acting out, the common problem for adults is a dull brain, excessive tiredness, and general irritability. With adults, there is also an increase in systemic inflammation which drives disease processes like heart disease, strokes, high blood pressure, diabetes, obesity, and kidney disease. It also results in daytime tiredness, lack of cognitive ability, and increased traffic accidents.

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Children don’t drive vehicles or have to worry about complex work-a-day problems. But they do have to think and perform well at school, get along with their peers, and make it through each day. And its better if they aren’t weighed down with issues like depression, hyperactivity, problem behaviors, and plain ‘ol tiredness!

The Negative Aspects of Mouth-Breathing in Children

- Contributes to a constricted airway
- Contributes to “crooked teeth” and mal-aligned jaws
- Interferes with success of orthodontic treatment
- Impairs proper exchange of oxygen and carbon dioxide in lungs
- Puts tongue in floor of mouth – interferes with proper swallow reflex
- Contributes to speech problems, improper swallowing, and head posture
- Contributes to tonsil enlargement and inflammation
- Linked to sleep disturbances and restless sleep
- Associated with behavioral problems and learning difficulties
- Associated with impaired lack of growth and development

Root Causes

When you understand the Root Causes it becomes much easier to understand both the source of the problem and the obvious solutions. What are the reasons that cause constriction or lack of development in the airway which results in Sleep Disordered Breathing in children? One of the core problems which strongly contribute to and cause a compromised airway in children is in improper use of the tongue.

Those with experience milking cows understand that one must use a rolling hand squeeze starting with the first finger and progressing to the small finger. This is necessary in order to pinch off and express the milk. The same principle applies with a baby when nursing on mother’s breast. The baby’s tongue “latches” and then rhythmically compresses the nipple against the roof of the mouth in a rolling motion, pressing firmly from front to back. This action is also what begins the swallow reflex.

The important point here is that it is this bracing pressure of the tongue against the roof of the mouth while swallowing that applies natural forces on the maxillary jaw bone to widen and expand the dental jaw (the arch form) and develops the upper jaw forward. With this widening of the roof-of-the-mouth the floor of the nasal cavity also drops lower which creates a larger nasal air-passage. (The bone that is the hard palate is also the floor of the nasal cavity.)

Note that the ideal position of the tongue when nasal breathing as well as when at rest and during swallowing, is in the forward part of the roof of the mouth – in the same position as if you were to paste your tongue to the roof of the mouth with peanut butter.

However, if the tongue, rather than being taught to swallow properly, is instead allowed to simply thrust forward-backward, as it does when sucking on a baby bottle or pacifier, it cannot provide the natural forces to the jaw bones and nasal airway to develop them normally. This tongue-thrust function can often persist into older childhood and even adulthood.

To summarize: With a better understanding of how all these dynamics play together it becomes easier to see how the consequences of this “mal-adaptive developmental cascade” is that the mid-face is unable to develop forward or in width – which in turn results in a high roof-of-the-mouth (hard palate), which in turn affects the size of the nasal airway, which in turn forces

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mouth breathing, which in turn inflames and enlarges the tonsils, which further constricts the airway, which in turn causes the teeth to come in crooked, which in turn causes the lower jaw to be positioned further backwards, which in turn causes potential jaw joint instability (“TMJ”), and which in turn leads to headaches, posture problems, and so forth and so on – and all of which in turn diminishes the quality of sleep and the ability of the brain to fully restore and reset itself on a nightly basis – which we will turn to next.

The Behavioral & Medical Problems of Childhood Sleep Disordered Breathing

Alongside the anatomical and developmental problems that this mal-adaptive cascade produces, are the effects on the brain, behavioral problems, and lack of general well-being that follows sub-optimal growth and development problems, as noted above.

Unfortunately, most people including physicians don’t understand that many behavioral and medical problems begin and persist due to a compromised airway in kids and children. It is not uncommon for a physician (and parents) to overlook airway and sleep considerations while dealing with behavior issues such as ADD/ADHD, oppositional and defiant disorders, or learning and social problems. Too often medications are used first for behavior and school problems without first evaluating the airway status, the development of the jaws and teeth, and the impact of inflamed tonsils.

Sometimes parents, not understanding the root problems unwittingly settle for medication solutions because they don’t know what else to do. The truth is that while medications are sometimes helpful, they don’t solve the foundation problem - if that includes growth & development problems related to tongue, jaws and airway development.

Behavioral signs and symptoms of Sleep Disordered Breathing are related to poor quality of sleep, the effects of inadequate oxygen and elevated hormone levels during the night.

Every parent knows for themselves that a good night’s sleep is so helpful in dealing with life, feeling good, being healthy, having a sharp mind, feeling rested and getting along with other people. It’s the very same thing for kids! When kids don’t sleep well and their brains are struggling, they don’t know why – they just act it out. Adults get tired and sleepy. Kids get wound up!

Imagine not having restful brain-restoring sleep, night after night; never able to get into the deeper delta-stage sleep and always having a feeling of suffocation while sleeping! (Can you guess where the nightmares/terrors come from?)

The bottom line is that the medical symptoms (i.e. the behavioral side of this problem) are usually linked primarily to or caused by airway problems, brain oxygen levels and stress hormone production in the body. This is a new and often contrary thought from the more often seen psychological, brain-chemistry, and prescription medication approach in vogue today.

This is why the American Academy of Pediatric Medicine has recommended in their literature that all children with suspected behavior problems should first be evaluated for airway issues related to nasal airway development, tonsils and adenoids, mouth breathing, and etc.

Healthy Start Addresses

- Size of the airway
- Restless fragmented sleep
- Impaired growth and development
- Problematic behavior
- Impaired thinking & cognition
- Crooked teeth, TMJ problems

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Other Medical Health Problems of Childhood Sleep Disordered Breathing

Once you understand the main problem, then the association and prevalence of other allied and even secondary problems begins to make sense. This is the story of where “this leads to that” – the “dots-connecting” mentioned above.

Repetitive mouth breathing is irritating to the throat and tonsils. In small measure you can feel this sensation by quickly and deeply inhaling through a wide-open mouth – especially with cold outside air temperature. You may notice the sudden reflex it causes in the back of the throat. This cold dry unfiltered air is irritating to the throat and tonsils and can lead to more infections and enlarged tonsils – which further compromises the airway. With mouth breathing the mouth is dryer and less able to deal with bacterial biofilms as well. Ear infections and sinus problems are more common.

Structurally and functionally, due to an unstable bite with crooked teeth, chewing and jaw joint health is affected. Quite simply, the child’s life stage is set for a higher probability of TMJ, headaches, head/neck problems, posture issues – all this in addition to experiencing more chronic allergies, infections, immune system problems, sleep problems, behavior issues, learning difficulties, personality disorders, and so forth.

Sometimes these kids live in a pretty dark place. These are not bad kids. They need an airway, oxygen and good sleep! Imagine the daily depression and discouragement and not even knowing enough about it to realize what is really going on. It’s very discouraging to be daily affected by restless sleep and poor breathing – where your brain can’t heal and be in top form for the day.

That’s why finding a solution that addresses the Root Causes is so important! To not deal with these issues earlier than later (or worse yet, not at all) means starting and continuing in life at a considerable disadvantage.

Common Signs and Symptoms of Sleep Disordered Breathing in Children Include:

- Mouth Breathing
- Bed Wetting
- Nightmares
- Snoring “noisy breathing”
- ADD/ADHD
- Hyperactive
- Opposition / Defiance
- School Difficulty
- Allergies & Infections
- Restless Sleep
- Daytime Tiredness
- Teeth Grinding, Worn Teeth
- Infections (Tonsil, Throat, Ear)
- Headaches
- Enlarged Tonsils / Adenoids
- Tongue Thrust
- Malocclusion – “Crooked Teeth”
- Dental Overbite / Overjet
- Narrow Dental Arch (Vaulting Palate)
- Thumb/Finger Sucking
- Tongue-tied
- TMJ – popping / pain
- Tongue Thrust
- Venous Pooling (Bags Under Eyes)
- Speech Problems

The Solution

There is good news in this story, and that is that you can do something about it! The solution is to improve oxygen in the blood and give your child some hope for a better brighter future.

Finding the right solution is simply life-changing!

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However, because kids won’t stop growing, time is of the essence! You want to take advantage of this natural growth to naturally guide better growth and development and to give them the best opportunity at a good airway. If these windows of time pass, and growth ceases before using it properly, the solutions become harder.

The first step is to become educated, informed, and then to take action.

The answer, simply put is to improve the airway, increase the quality of sleep, correct bad habits and get the tongue working properly, and promote healthier development of the jaws, face and airway.

Because we have access to teeth, mouth and jaws, we can use specially designed dental appliances and early orthodontics to correct tongue habits and improve swallowing function which can help with proper growth and development. Tongue training therapy (called Myofunctional Therapy) is sometimes also used to help train the tongue to swallow better.

Again, the solution is quite simply to get more oxygen into the child’s bloodstream and brain by correcting the tongue posture and promoting better growth and development of the jaws and airway.

Having a Healthy Start means dealing with the Root Causes.

- Eliminate mouth breathing
- Stop bad habits like thumb sucking
- Establish nasal breathing which warms, filters and humidifies air
- Train the tongue to swallow properly
- Develop jaws & dental arches

This is best accomplished using Nature’s natural forces during growth and development to naturally guide jaw and nasal airway development and guide the teeth into their proper positions. Natural forces which gently build the face and jaws are the secret to having good airway and fewer side-effects from delayed or improper growth and development.

And – it’s the secret for helping your child become a better version of themselves.

In Summary

Childhood Sleep Disordered Breathing is highly associated with mouth breathing. This results from not having a large enough nasal airway. The airway can be further constricted or compromised from allergies, sinus congestion, and enlarged tonsils – often a secondary problem due to mouth breathing.

These natural forces that come from proper tongue swallowing are what drive the growth and development of the jaws and mid-face, and develop the size of the airway. Optimal treatment and intervention is best if started earlier to take advantage of normal growth and development forces.

It is no longer acceptable to wait for kids to “grow up”, or for us to condemn children to live in a dark world that creates hyperactivity, ADD/ADHD, bedwetting, nightmares, headaches, anxiety, restless sleep ... when there are proven solutions designed by nature to naturally grow and develop an airway that will allow them to have a Healthy Start in life and to become the best version of themselves.

Children with wide and forward dental arches and who breathe through their nose – sleep better, do better in school, behave better and experience fewer health issues.

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How We Help

The Healthy Start System helps to retrain the tongue to swallow properly and to correct other oral habits. We use special appliances that utilize natural forces to expand the jaws and dental arches, and help train the tongue to swallow properly. This improved airway and better jaw and mid-face development increases the oxygen the child receives to the body and brain, which better assures improved sleep and normal brain and hormone function for the next day. This in turn leads to better neurological and psychological development, improved hormone control, and an overall healthier and happier child.

The Healthy Start System Addresses:

- Medical symptoms of Sleep Disordered Breathing
- Restless sleep, bed wetting, ADD/ADHD
- Frequent throat and ear infections
- Opening of the airway
- Development of jaws and facial profile
- Promote dental arch expansion
- Teaching proper swallowing
- Correct tongue posture / placement
- Tongue thrust correction
- Promote nasal breathing
- Correction of mouth breathing
- Habit correction – i.e. thumb sucking
- Guiding straight teeth development
- Correct overbite, overjet, dental crowding, gummy smile, cross-bite
- Uses the natural forces of the tongue, oral and face muscles for corrections

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Healthy Start FAQ

How Can I Know If My Child Has This Problem? What Should I Be Looking For?

Parents can utilize the Home Study to do a home screening to know what to look for. Please remember that the absence of any signs or symptoms does not make a diagnosis for NOT having pediatric sleep apnea. These are simply signs and symptoms to look for – any combination of which can indicate the possibility for a problem. Sometimes it is necessary to consult a knowledgeable dentist who treats pediatric sleep problems, a sleep physician, Ear Nose Throat physician, orthodontist, or pediatrician to finalize a diagnosis and/or to completely treat airway and growth/development problems. The first step is to do an easy Home Screening and then make an appointment with us to evaluate your findings and concerns.

What If I’ve Waited Too Long? Is It Ever Too Late?

While early treatment is best, it is always of benefit to begin doing something – even if you think you may have waited too long, or discovered too late the connection between your child’s problems and their airway and jaw growth and development issues. Often treatment is multi-disciplinary. This means that traditional orthodontics (i.e. ‘braces’) can still help to resolve spatial and functional problems – even when or after the jaw bones have stopped growing.

What Is Tongue MyoFunctional Therapy?

Myofunctional Therapy is a specialized approach to (re)training the tongue to swallow properly and to posture itself in the roof of the mouth. Many kids begin life developing a tongue thrust – the forces of which can destabilize teeth positions and delay or prevent ideal growth of the jaws and airway. Myofunctional Therapy often works in tandem with Healthy Start and/or orthodontic treatment to help create stable muscles which will help develop the face and jaws and airway.

Will Tonsils and Adenoids Need To Be Removed?

Answer: Not always! But if they are ‘in the way’ – then yes! Tonsils can become inflamed and enlarged in response to chronic mouth breathing. If they are enlarged they constrict and compromise the airway and must be dealt with – if you are going to have any hope of a quality airway that allows closed-mouth breathing through the nose during the day or night.

What Causes Nightmares and Night Terrors?

There are levels or stages within sleep. This is called “sleep architecture”. When the airway is compromised and oxygen is restricted it causes restless sleep – which continuously interrupts sleep and prevents the brain from entering the deeper health-restoring stages of delta-sleep. The brain is also concerned about not having enough oxygen – so it ‘thinks’ it is being strangled – which produces stress hormones (“fight or flight” adrenalin, cortisol, etc.). The combination of these happenings creates a situation where the brain is highly stressed and tired and can’t get beyond the dream REM stage of sleep – only the dreams are more like nightmares.

What Causes Bed Wetting?

Bedwetting is experienced by about 18% of children. When the oxygen levels in the brain is even slightly altered for prolonged times it triggers a subtle “fight or flight” response. Because the brain’s primary objective is to stay alive, it will prefer to use oxygen for the brain rather than to support bladder control. This, added to restless stressful sleep, and you have a “one-two” punch that often results in wet beds.

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Can My Child Still Have Sleep Problems If They Aren’t A Mouth Breather?

Answer: Yes! Research shows that 43% of children are “mouth breathers”. That leaves many who don’t “mouth breathe” who still have airway and sleep problems, for a variety of reasons. There are many signs & symptoms along with other causes and side-effects from these problems that need to be taken into account. However, mouth breathing or lips-apart posture even during wake times, is a strong indication that there is a problem.

My Child Doesn’t Snore. Does That Mean Everything Is Okay?

Answer: No! While adults who snore almost always have sleep apnea, most kids do not snore when they sleep even if they have sleep apnea. Certainly when they do, that is a strong indicator of airway constriction. What we are more interested in is “noisy breathing” when sleeping. Silent breathing is the gold standard and any evidence of air movement through the mouth or nose is not a good sign.

What If My Child Grinds Their Teeth While They Sleep? What Does That Mean?

It is widely accepted that night-time teeth grinding in kids is “normal” – that they will “grow out of it”. Also, because the damage done to teeth is in their baby teeth, soon to be lost anyway, that it is of little consequence. However, the concern here isn’t for the damage part, it is to the fact that the child is grinding teeth in the first place. And – no it is not desirable – even though it might be “normal”! What many dentists and physicians and health workers and parents don’t realize is that teeth grinding is the body’s reflex way to help brace the jaws in such a way to better support the airway. In actuality, teeth grinding is an indicator that there is an airway problem.

How Much Does the Healthy Start Approach Cost?

Generally, the cost of Healthy Start approach is about one-half the cost of traditional orthodontics.

Will Insurance Pay For Healthy Start?

Answer: Sometimes – depending on your insurance coverage. Generally speaking, if your plan includes orthodontic care, Healthy Start can be covered. Usually orthodontic benefits are a once-per-lifetime benefit – so if you use them for Healthy Start and later need traditional braces you will not have that coverage at that time.

Will My Child Still Need Braces?

The true answer is “maybe”! While the Healthy Start treatment often means the mouth and jaws can grow using nature’s natural forces, and that means the teeth will be better guided into their “straight” or normal positions, it is not a guarantee that follow-on traditional orthodontic treatment won’t be needed. But – if/when it is needed, it will be much easier and quicker treatment. Also, the older a child is when they start with the Healthy Start approach, the more likely orthodontic treatment is.

How Long Will Healthy Start Treatment Last?

This is not a “quick-fix” solution. It relies on the natural forces of nature and growth to work its “magic”! Patience is important. Consistency is important. And Compliance is important!

How And Why Is Compliance Important?

This is THE CRITICAL part of the Healthy Start approach. The oral appliances used are removable – which means the child can take or “spit” them out. In most cases they have to be removable because the jaws are still growing – and this is the best way to train the tongue to swallow properly (as well as to eliminate bad habits). It is ESSENTIAL that parents and

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caregivers be totally enrolled and consistent and compliant – or results will be less than desirable or non-existent.

Why Not Just Wait Until We Can Have Permanent Braces?

The simple answer is that if we decide to wait until the permanent teeth are all erupted and then put braces in place, we have missed about a decade of time spent growing up in a state of having a compromised airway – and having the medical and behavioral and dental symptoms and consequences dealt with. The whole point is to deal with the problem in a timely way so that growth and development proceed normally and we avoid (or improve) the many problems that put our children in such a dark place – often imprinting their personality and health problems – for life!