Facial Meltdown!

by Carol Vander Stoep, RDH, BSDH, OMT

Attractive people enjoy advantages. Of course! They are not just perceived as more intelligent, they often are – partly because they receive more attention. They often receive superior economic and career opportunities – reasons enough to strive for maximizing one's genetic "beauty" potential.

Asked why he would not appoint a person who sought a particular job, Lincoln said, "I don't like his face." "But Mr President, he can't help that." Replied Lincoln, "Every man after age 40 is responsible for his face." Indeed we are and it starts at birth. Would you be surprised to know prominent, well-defined cheekbones, a square jawline, hollowed cheeks, and balanced facial features also indicate health? In fact, a beautifully developed face pays enormous health dividends – and to a large degree, is under each person's control.

To help your child avoid snoring/apnea, ADHD, or a real, not just perceived, ten+ point IQ drop, read on. Early wrinkles, early erectile dysfunction, diabetes, exhausted adrenals, crooked teeth, and other health problems may also be in the cards. Start early – facial development is ninety percent complete by age twelve.

Take Five

Place a standard 6mm soda straw between your lips, exclusively breathing through it for five minutes. Better yet, try a cocktail straw. Difficult, yes? Yet this is the size airway many people operate with because they did not maximize their genes by learning "good oral posture."

Poor Oral Posture Can Influence:

- Unexplained weight gain
- Unbalanced facial features that fall outside of the "Golden Ratio"
- Narrow airway and insufficient tongue space; both often lead to snoring and sleep apnea
- Inflammatory diseases such as heart disease, diabetes, gum disease, high blood pressure, and osteoporosis
- Early facial wrinkles
- Gummy smiles/gum disease
- Attention deficit hyperactivity disorder – ADHD
- Depression/anxiety/brain fog
- Tilted head, shoulders, and hips with an S-shaped spine. Forward head posture (FHP) is typical. FHP leads to sore neck and shoulder muscles and fibromyalgia
- Daytime sleepiness
- TMJ/jaw joint problems; clenching
- Morning headaches
- Nightmares
- Erectile dysfunction
- Ear infections; inability to clear ears
- Crowded teeth
- Bed wetting through early adolescence

Three Critical Oral Postures

First: Good oral posture means keeping lips sealed together while not using them during intimacy, or while eating or talking. Our mouths were never meant to be breathing tubes; bad things happen when we use them that way. Your nose is on your face for a reason!

Second: Where is your tongue right now? Is it plastered to the roof of your mouth or resting on the floor? Does your tongue tip touch your front teeth?

Third: What happens when you swallow? Does your tongue move forward? Can you swallow with your lips apart in a grimace, or must you activate lip and chin muscles? [Video animation of correct/incorrect swallowing: http://myoresearch.com/orthodontics/#soft_tissue_dysfunction/slide1. Click on "Watch Video".]

Breathing Easy

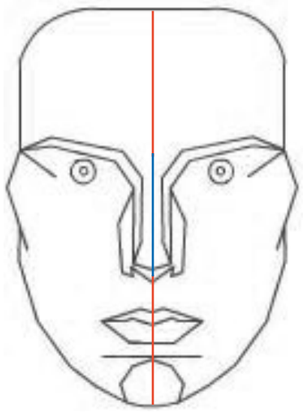
Breathing is fundamental. If your child were to choke, you know you'd jump to clear her airway. But many children – and adults – choke on their tongues regularly at night due to a common problem called sleep apnea, yet few are aware of their airway obstruction. We may consider sufficient tongue space and a wide, clear airway a birthright, but many westerners do not have one. Most of us have adjusted to and dismiss what seem like resulting minor health annoyances.

We send children in droves to orthodontists to fix expected tooth crowding, not realizing we are treating a symptom, not the root cause of

Author's real versus optimal development. Her cheekbones are less pronounced, lips less full, and lower jaw "weaker" than genetic programming intended. Optimal development (line overlay) would have granted larger sinuses with pronounced cheekbones, less constricted eye sockets for better vision, and a horizontal jawline rather than the obliquely angled one shown by the red line. Instead, her face has "melted". She developed the vertical facial growth that leads to long, narrow faces, crowded teeth, and jaw joint (TMJ) problems. Her airway has also melted to 4mm from the optimal 20+mm. Note also how far forward of her shoulders her ear canal is. She has a Head Forward Posture.

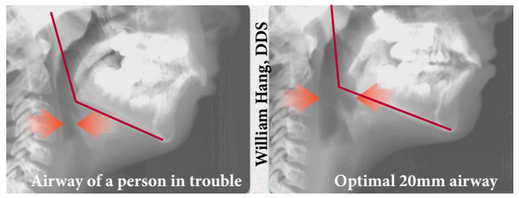
Unfortunately, this profile seems normal and is all too typical in today's world. It is not ideal for excellent health – or beauty.

Nature's Beauty Code



The Fibonacci Golden Ratio is Nature's Beauty Code. We find spatial relationships defined by the Golden Ratio, (1 to 1.68 …) throughout nature – in insects, flowers, art, architecture … and in faces. This mask represents a face in harmony with the Golden Ratio. When the overlaid features of this mask match a person's photograph, we perceive the person as attractive. Maybe more importantly, we can guess they breathe well.

The face should divide evenly into thirds, as represented by the bisecting colored lines. If a person often mouth breathes the lower third of the face elongates and neither jaw experiences the forward growth they should, with many repercussions for the airway – and beauty.



A "normal" airway is about 11mm; 20+mm is optimal. Many operate with less than a 6mm airway – about the size of a soda straw. Which would you choose?

tooth crowding. We are not born with extra body parts, yet we cavalierly extract crowded teeth in pursuit of an attractive smile, and believe wisdom tooth extraction a rite of passage. We sigh when we note our children are not developing the attractive square, chiseled jawline or desirable high cheekbones and hollowed cheeks we want for them. We rarely realize they are not maximizing their genetic potential for beauty or optimal health throughout life.

I'm Melting!

Consequences of Mouth Breathing

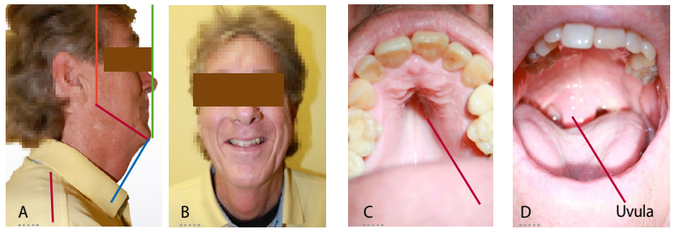
Consider for a moment how orthodontics works: light, gentle pressure on teeth over time slowly moves them. Take it a step further and realize intricate muscles around the face also remodel facial bones over time. If facial posture is incorrect, facial form is incorrect.

Children's faces are nearly fully formed by age twelve. Before this, their bones are plastic. If a child consistently mouth breathes for any reason, most commonly due to unresolved allergies, this habit creates a 3-dimensional facial contraction. The lower third of the face grows down and backwards, leaving a long, narrow-appearing face. Cheekbones, sinus cavities, and eye orbits do not expand as they should for best function.

In profile, the lower jaw can look like a bump in the neck; many men grow beards to hide a weak lower jaw. Because of jaw underdevelopment, back teeth crowd; wisdom teeth impact. The tongue also crowds into a smaller space. It becomes a "Suburban in a Mini-Coop garage". A final airway assault occurs as the lower jawline trends from horizontal to more vertical. The jaw and tongue move into airway space, as the images above show.

If you have jaw joint problems, this article likely applies. The lower jaw remodels far back in the jaw joint socket, often leading to pain, dysfunction, and sometimes debilitating movement disorders as it pinches critical nerves. Equalizing pressure in ear canals during flying or scuba diving is difficult, if not impossible.

A mouth breather must of necessity rest his tongue on the floor of his mouth. But if the tongue does not properly lock onto the palate, this muscle cannot counterbalance the inward forces of cheek muscles. The face narrows in a second dimension as cheek muscles crush the palate (the arch formed by the roof of the mouth). Front teeth also crowd, further constricting tongue space.



Long Faces: A. Orange: short posterior face. Green: long anterior face, particularly the lower facial third. This often leads to gummy smiles. Ideally, the orange and green lines should be about the same length, making the red line more horizontal. Red + orange: a wide jaw angle. This compromises the airway, as does a narrow face and poor muscle tone. Jaw joint problems are common for those with this profile. Blue: Wide angle from chin to collar bone equals high risk for sleep apnea, partly because a receded jaw constricts the airway. The ear canal should line up with the shoulder bone. Note the head forward, backward tilt posture. As in CPR, this unconscious maneuver helps open the airway. B. Note the long narrow face and the tongue rest between the teeth. C. Narrow "collapsed" palate – no longer room for the tongue to suction here. This man had extraction/retraction orthodontics as a child, which also stole forward facial growth. D. We see less than 50% of the uvula – not much airway space. Note also the tongue seems too big for its space. The tongue should fit easily within the confines of the teeth.

Crushed, narrow and high palatal arches lead to deviated nasal septa and subtract from sinus and eye orbit space. Cheekbones remain undeveloped and may look sunken. Eventually, there is less room for the tongue to properly suction onto the roof of the mouth. High, defined cheekbones are key to beauty and health. Jaw width and upper jaw shape create cheek fullness.

Maximizing the Beauty Gene

Snap judgement: "slack-jawed". First thought? Yup, just closing your mouth adds about 30 IQ points to people's perception of your brain power. What else does correct oral posture offer? When the tongue locks front-to-back against the roof of the mouth:

- It naturally expands facial width by stimulating stem cells along the palatal midline. A triple benefit results: a wide airway plus more room for teeth and tongue. Teeth erupt in a wide pattern around the tongue.
- The tongue is "toned", thus compact and less likely to choke off the airway.
- When the tongue undulates gently against the roof of the mouth during a proper swallow, eustachian tubes twist and their internal pressure changes. These constant pressure changes clear them and aerate the middle ear. Children suffer less middle ear infections!
- During a correct swallow, pressures build on a chain of bones that milks the pituitary gland of its important growth, thyroid, sex, and blood pressure regulating hormones. Why skip these free, critical hormones?
- Together with a lip seal, it allows the tongue to naturally suspend the lower jaw in space, relieving the need to clench even while sleeping.

Mouth breathers also typically have low CO_2 levels because their breath rate and volume is doubled compared to those who use their noses.

Carbon Dioxide – Its a Gas! Gas! Gas!

Wait a minute! Weren't we taught exhaled carbon dioxide is a waste

Low Carbon Dioxide (CO_2) Levels – The Missing Link in Poor Health Outcomes

There is a growing awareness that a person's acid/base balance (pH) rules health – that unbalanced conditions favor disease via unfriendly germ populations and excessive blood clotting. Those in the loop know inflammatory diseases such as heart disease and gum disease become more prevalent as acid conditions reign. Alkalizing diets are increasingly popular. Could proper breathing matter more?

CO2 contributes to our bicarbonate buffering system, which guards against pH swings. If we are short on this buffer, our saliva or urine may register as too acidic or too alkaline. If your Control Pause (CP) is between 1-20 seconds, you will likely show some of the symptoms in the following list. If your CP is between 20 – 40 seconds, symptoms are not apparent, but can quickly show up under stress. When the CP is in this range, buffering capacity is limited. A CP of over 40 means you can ignore the following list!

- Low CO_2 levels cause muscle excitability and tension. Excess excitability of heart muscle fibers and irregular heart beats (**arrhythmias)** are possible. **ADHD is** misdiagnosed all too often. Those with ADHD not only exhibit muscle excitability, but may be intuitively trying to build blood CO_2 levels by hard physical exertion. Working muscles produce CO_2. Perhaps 25 percent of children diagnosed with ADHD may actually have obstructive sleep apnea; their learning difficulties and behavior problems can be the consequence of chronic fragmented sleep as well as poor brain oxygenation. Children with sleep disturbances are often well below their peers in terms of height and weight.
- Low CO_2 allows smooth muscle spasms. This can lead to chest pains (**angina pectoris)** and **high blood pressure**; also **bronchospasms (lung)**, **Irritable Bowel Syndrome**, **musculoskeletal aches and pains**, and exacerbation of **hiatal hernias**. Low carbon dioxide blood levels are an important reason mouth breathers suffer **disturbed sleep, bedwetting**, and **asthma**. As Dr. Patrick McKeown says, "Unless you make the switch to nasal breathing, you will never solve your asthma."
- Low CO_2 levels constrict arteries. Low oxygenation from constricted brain arteries can cause **headaches** including **migraines, brain fog, poor concentration** and **nerve degeneration**. Every 1 mm Hg drop of CO_2 in blood vessels reduces blood flow to the brain by 2%. Constricted heart arteries lead to chest pains and **heart attacks**. Blood vessels dilate only when carbon dioxide is in the normal range. Constricted arteries and poor oxygenation make the heart, colon, spleen, liver, kidneys, and other **organs function less well**. When arteries constrict in the extremities, people experience **cold hands and feet**. If you have panic attacks, your blood vessels may constrict by fifty percent!
- Low CO_2 levels cause nerve excitability such as **numbness/tingling in feet and hands, ear-ringing, anxieties** and **phobias.**
- CO_2 helps release oxygen from red blood cells. Blood may carry sufficient oxygen, but low CO_2 levels in blood does not allow its release. The less CO_2, the less vital organs including the brain are oxygenated, thus they function poorly. Noticeable symptoms may be **breathlessness, dizziness, irritability, obsessiveness**, or **panic. And again, brain fog.**
- CO_2 rids bodies of excess ammonia and urea. Four AM is the body's primary detoxification time. If a person often has to take a bathroom break at 4AM, he likely has this ammonia-based problem. The body cannot take ammonia to urea without enough CO_2, so it irritates the **bladder** and the person has to make a bathroom run.
- Low CO_2 levels lead to **poor sleep quality**. When CO_2 levels drop, rapid eye movement sleep decreases significantly.
- Low CO_2 levels reduces total calcium, phosphorus, and ionized calcium blood levels. **Osteoporosis** anyone?
- Low CO_2 levels trigger nasal goblet cells to generate mucous in an effort to slow its loss by narrowing the air passages, not realizing the mouth is a downstream "leak". In circular misfortune, **stuffy noses** encourage mouth breathing, thus more CO_2 loss in a vicious cycle. The more one mouth breathes, the more allergens and dry, cool air they must process. Mouth breathing causes **enlarged tonsils**, which also narrow the airway.

Carbon dioxide (CO_2) blood levels profoundly affect every aspect of health. Your breathing is normal/healthy only if you have normal tissue oxygenation and oxygen/carbon dioxide blood ratios.

Checking CO_2 Levels: Control Pause

How can you check if you are retaining enough CO_2? You should, after five relaxing minutes of sitting with good posture, be able to easily cease breathing for at least 40-60 seconds after an exhalation. That next breath should be as calm as the last. This is called a Control Pause.

Our brains set our respiratory rate. You can slowly raise your carbon dioxide levels, thus your Control Pause, by changing your brain's "set point" via practicing Buteyko breathing exercises. Dr. Patrick McKeown, an asthmatic for 26 years, no longer exhibits symptoms as a result of this breathing program and is a tireless advocate of Buteyko breathing methods to enhance health. Buteyko self-help books and coaches are available globally.

Lifestyles of the (CO_2) Poor and Sick

Eating processed foods or over-eating, stress, lack of exercise, CPAP use, and high home temperatures also induce low CO_2 levels via hyperventilation. Public speakers often over-breathe. Asthmatics live with a vicious cycle. The more they mouth breathe, the worse their asthma.

One wouldn't think so, but we get less muscle power during exercise when we mouth breathe than when we nasal breathe because oxygen releases from the blood stream into muscles and organs only when enough carbon dioxide (CO_2) is present. Mouth breathing releases too much CO_2. It is not how much oxygen we breathe in, it is whether we get to use it.

Clues to Use

If you hear a person breath while at rest, they sigh or sniff regularly, their breathing is irregular, they take large breaths prior to talking, yawn often, or they breathe using their upper chest instead of their diaphragm, they likely have low carbon dioxide levels.

Forward Head Posture

The tilt and forward head posture (FHP) typical of mouth breathers helps open the airway, as it does in cardio pulmonary resuscitation maneuvers (CPR) but at great cost. Unfortunately, any tilted head or one misaligned with the spine will influence the size, shape and position of all the twenty-nine skull bones, including the jaws. Consider an eight-to-ten pound bowling ball, weighing about the same as an adult head. When the adult head is tilted, containing mostly water, the fluid flows downhill, pressing on and distorting bones on the down side. The constant tilt also results in poor whole body posture, condemning one to a lifetime of neck and shoulder pain and other downstream health consequences.

Every inch the head moves forward of the shoulders amplifies its weight by ten pounds. If the opening of the ear canal is in line with the spine, the spine supports the ten pound head. If it is three inches forward of it, exhausted muscles must support what feels like forty pounds! This FHP contributes to head and neck pain, swallowing difficulties, migraines, pinched nerves, herniated neck discs, and arthritis.

Pain upregulates the central nervous system, which can contribute to fibromyalgia, chronic fatigue, and myofascial tender points. The entire gastrointestinal tract can become agitated and result in sluggish peristalsis and evacuation.

Slouching also reduces lung capacity by at least thirty percent and keeps one from breathing properly by expanding abdominal muscles. Breathing from the lower lungs helps clear them.

Poor balance resulting from a forward head posture overtaxes the brain. Ninety percent of the brain's energy and output is used to relate the physical body to gravity; only ten percent to thinking, metabolism, and healing. Why let poor posture change that ratio for the worse?

It is All Connected!

Health interrelationships are often more complex than we recognize. The condition of your mouth and what enters and exits it from infancy can affect the heart, blood vessels, lungs, bones, kidneys, artificial joints – and sexual responses. The complex subject of orofacial development and its broad health ramifications highlight these interconnections.

To review, mouth-breathing generally creates skeletal deformations that lead to obstructive sleep apnea by means of narrow airways, violated space for the tongue in all directions and enlarged tonsils. Small airway development is a result of an oblique jawline, facial narrowness and a lack of muscle tone in the tongue and soft palate. This general muscle flaccidity also helps lead to airway collapse during sleep as the tongue and other structures fall into the airway.

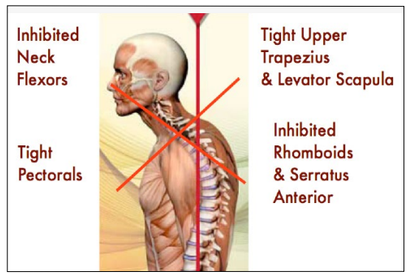
Some dental professionals who understand orofacial structures are beginning to screen for obstructive sleep apnea (OSA), easily accomplished while checking the airway during oral cancer exams. Some suggest an economical and non-invasive home sleep study like the Watermark Ares.

Fighting to Live! Diabetes and Weight

Sleep apnea is correlated with pre-diabetes, diabetes and weight gain. The repetitive choking that occurs during apnea events stresses the body, which in turn raises blood pressure and releases stress hormones. The body responds by making more blood sugar available to feed muscles preparing to fight. At the same time it makes it harder for these sugars to enter muscle cells. Blood sugar levels rise, as do insulin levels to help reduce elevated sugar levels. Stress hormones, insulin, and sugars all damage blood vessels.

Apnea also tampers with hunger hormones, decreasing leptin's "fullness" signal, while raising grehlin's "hunger" signal.

If a person has apnea, it is difficult to control blood pressure or lose weight. Drops in growth and thyroid hormones also lead to weight problems. Many people lose 40-50 pounds within a few months of successful apnea treatment or breathing normalization.



Forward Head Posture (FHP) impacts health in multiple ways, beyond sore neck and shoulder muscles. Hypertonic hyoids often cause jaws to resist translatory movement, causing jaw retrusion and jaw joint compression. FHP contributes to sleep apnea, pinched nerves, herniated discs, arthritis, and migraines. The entire GI Tract can become agitated, causing sluggish evacuation. Image: Courtesy of Eric Dalton, Certified Myoskeletal Therapist

If You Snore and Live Long Enough You Will Develop Apnea!

Snoring stresses relationships. Both partners become more interested when they learn sexual function relies on a healthy circulatory system – which snoring and apnea both downgrade. More shocking, the testosterone drops that accompany poor sleep lead to sexual dysfunction in both genders. Apnea may double the risk of erectile dysfunction. Why is no one screaming about this?

Heads up: snoring does not have to evolve into apnea before it kills. Snoring alone may contribute more to heart disease than does smoking or obesity, according to a new study by Henry Ford Hospital. A change in airway size of 1mm or less can be the difference between snoring and not. Why let so little stand in the way of so much?

Say YES to NO!

Mouth breathing, day or night, exerts other profound negative effects on wellbeing. Beyond morphing facial structure and functions for a lifetime, a critical consequence is that it bypasses an important way our bodies make nitric oxide (NO) – as we inhale through our nasal and sinus passages. Nitric oxide:

- Is the basis for the various erectile dysfunction pills like Cialis and Viagra
- Helps control microbes in sinuses and lungs
- Improves circulation by dilating blood vessels. Like carbon dioxide, it helps oxygen release into cells. Good circulation lowers blood pressure, improves sexual function and nourishes skin. Children who mouth breathe tend to have worse acne and may be prone to eczema and psoriasis. Ineffective oxygen or nitric oxide delivery to cells underlies many diseases.
- Increases alertness by suffusing the brain with more oxygen via relaxed blood vessels and enhanced oxygen release
- Helps regulate blood vessel tone
- Increases blood oxygen levels. Low blood oxygenation is associated with high blood pressure, heart attacks, and promotes cancer, diabetes, and other chronic diseases.
- Promotes relaxation and feelings of wellbeing

Early Actions Parents Should Take

It should be clear adult obstructive apnea diagnosis and treatment is fishing pretty far downstream. We should aim for the headwaters, becoming aware of and teaching proper oral postures and guiding our young children to get appropriate help for optimal facial growth.

1. Breast-feeding affords benefits beyond unmatched nutrition. Immunoglobulins and human proteins in breast milk help infants resist allergies while formula is often a significant source of protein allergies and stuffy noses. Clear nasal passages allow babies to breath through their noses instead of learning to mouth breathe.

Breast-fed infants also learn to work their lips, cheeks and tongues differently than bottle-fed babies. The coordination required for an infant to swallow and breathe while breastfeeding is a critical step in learning correct swallow patterns. Parents should also discourage non-nutritive sucking, whether it be via pacifiers, fingers, arms, or cheeks. These influence development by creating a strong vacuum within the mouth and teach babies an incorrect sucking pattern These habits also encourage the tongue to rest on the floor of the mouth.

Toddlers should switch to a regular cup as early as possible, since sippy cups are also a problem. The "Baby Led Weaning" book guides parents on how to help babies explore solid foods. It does not recommend pureed foods for many reasons, one being the child learns to work facial muscles early.

2. Watch for flattened cheeks or unusual mouth shape. These conditions almost always worsen. Dark circles under the eyes and slumping shoulders can indicate allergies, poor sleep, and poor oral posture. Do not ignore allergies or large tonsils or adenoids. Blocked noses lead to open mouth postures.

Sisters: The sister on the left generally breathes through her mouth. Her sister (right) predominantly nasal breathes. Note muscle tension differences, the facial angles and proportions.

3. Look for parted lips or chewing with an open mouth at any age as it indicates a person is breathing and chewing through the same space. One's face continues to change throughout life. It may grow downwards to such an extent a child may struggle to close his lips at all. Once this happens, it is very difficult to correct by means other than surgery. Persuade your child to keep his mouth closed at rest.

4. By age five there should be spaces between the front baby teeth. Their permanent successors, which arrive at about age six, are much larger. If there is insufficient space, they will crowd. It is easier to prevent crowding by creating space than to correct it afterwards. If lower front teeth are crowded at six years of age, do not adopt a 'wait and see' approach. At the very least, your child may need to improve his oral posture.

5. The tongue should be in the palate for most sounds. If it protrudes sideways or forwards between the teeth, the teeth will likely displace. A lisp usually indicates the tongue rests incorrectly. usually too low. The lips should contact between most syllables. Ask your child to count to five and see how far apart their lips are after the 'five'. If more that 3mm apart, there is a moderate problem; if more than 7mm, a severe problem.

6. Release tight frenums that anchor the tongue and lips and prevent a proper tongue rest position and swallow. Releases also relax shoulder girdle muscles. See https://vimeo.com/ondemand/tonguetiereleaseexercise.

Solutions

It is all too likely that you or a loved one needs help. Solving allergy problems and releasing a tightly anchored tongue are the first order of business. Large tonsils may subside after mouth breathing stops. Consider orofacial myofunctional therapy [http://www.myoacademy.net/myofunctional-therapist] to repattern muscles when necessary. Therapy involves making new neuromuscular pathways for better habits. You may want to evaluate cranial-sacral therapy in conjunction with myofunctional therapy.

If you perceive orthodontics is necessary, find a dentist who practices "full face" orthodontics. These practitioners prefer to start around age four to guide growth and develop the face forward, rather than downward and back. Properly done, an expansion will open the airway. Forward growth guidance gives a greater chance of having enough room for normal wisdom teeth eruption. Full face/orthotropic orthodontic techniques never involve tooth extraction or retraction because the tongue never adapts to its downsized house. Whatever orthodontic style you choose, ask how the plan will impact the airway.

Even adults may orthodontically expand their palates to experience relief. As the palate expands, lower teeth upright and the airway expands laterally. If the lower jaw releases from a trapped backwards position, as mine did, this takes pressure off the airway in the other dimension, opens eustachian tubes for easy clearing, and helps ease jaw joint discomforts.

As often happens, traditional orthodontics treats symptoms (crooked teeth), not causes. Teeth may look great, but at the expense of optimum facial attractiveness and function. Results are usually unstable and require retention. If no one addresses oral posture, even with retention, changes can occur over time.

A few dentists in the United States work with children to help with forward facial growth as just described, but treatment must start early to avoid surgery, certainly before age ten. These dentists also work with adults to correct the TMJ/breathing/apnea problems associated with the "extraction and retraction" orthodontics they had the first (and sometimes second) time around. Quite often, the best results require oral surgery to correct damage from a lifetime of poor oral posture. With jobs like airline pilot and truck driver at stake, adults see the value of correction. [Visit: www.orthotropics-na.org, www.biobloc.com, and www.facefocused.com]

Once again, it is simple answers that address root causes of complex health issues.

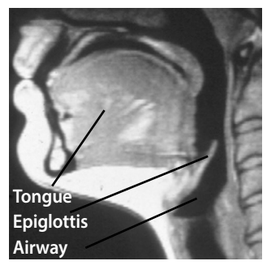
If you recognize in yourself any of these problems, address them. You will likely see a huge boost in the quality of your life.

Where Should Teeth Be?

Orthotropic orthodontists use techniques that develop forward horizontal growth beginning at an early age. Dr. William Hang describes one way to tell if a child is developing horizontally rather than vertically:

Cosmetic Line: Measure the correct position of the upper front teeth. Put a pencil mark on the most forward point of the nose and measure from there to the edge of the upper front teeth. Ideally, for Caucasians, it should be 28mm at the age of five and increase one mm each year until puberty, when it should be 38 to 42mm for a girl of sixteen and 40 to 44 for a boy of seventeen. If the measurement exceeds this by more than five millimeters, there will be some irregularity of the teeth and facial disfigurement; if more than eight millimeters the child is certain to grow up with an less attractive face than they should have.

Asian noses are about 4mm shorter than Caucasians, so correct for this in your calculations.

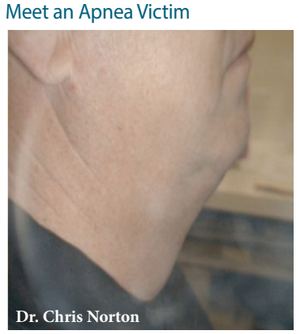


Obstructive sleep apnea sufferers are six times more likely to clench or grind their teeth. Oddly enough, clenching at night is one way to bring and keep the lower jaw forward to open the airway. It is an adaptive mechanism that pulls the tongue forward and away from the throat. This cutaway image shows how little the tongue must fall back to threaten the breathing by pushing on the epiglottis. Pulling the lower jaw forward is one way emergency responders open the airway to begin resuscitation.

Do not take the possibility of apnea lightly. It steals brain function, then your life. Sixty-five to eighty percent of patients who have had a stroke have sleep apnea, predominately obstructive sleep apnea. Sleep labs or home sleep studies like Watermark Aries determine if one has apnea and its severity.

Males with a 17 plus inch neck and females with a 16 plus inch neck have increased risk for sleep apnea. If your profile is similar to this man's, from your chin to the base of your neck, it is likely you have obstructive sleep apnea. It is not just the neck circumference that puts one at risk; it is that it would take very little backward jaw movement during sleep to block the airway.

Meet an Apnea Victim



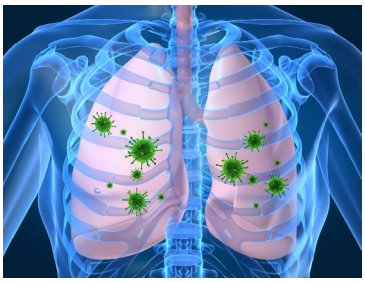
Screening Your Child or Yourself for Orofacial Myofunctional Therapy or Buteyko Needs

Adults can also benefit from repatterning oral and facial muscles as needed; evaluating and referring children who are still developing has the potential for the greatest health gains. Children also develop new neuromuscular pathways faster! Still, it is estimated that for those adults with mild to moderate sleep apnea, myofunctional therapy may benefit 39% of them to the exclusion of other, more invasive therapies. For others needing help, orofacial myofunctional therapy works in concert with all other treatment modalities including CPAP, Full Breath Solution (http://www.ihatecpap.com), lower jaw advancement positioners, and orthodontics. Faces remodel throughout life so it is important to learn to exclusively nasal breathe. We all should attain a Control Pause of at least forty seconds. To screen yourself for myofunctional therapy needs:

- Take a profile picture with ears exposed. Observe if you have a forward head posture wherein the ear canal does not line up directly with the shoulder, but is forward of it. Look also for the telltale backward tilt of the head. You can also back up against a wall and measure the number of inches between the wall and neck. It should be less than three inches.
- Notice if it is your upper chest (incorrect) or abdomen that rises during breathing, if you sit with your spine in a C-shape, whether you draw breaths from the mouth or nose, and whether you maintain a lip seal when not talking or smiling. Sometimes it takes months to figure out breathing patterns. Do not ignore sleep hours. If you snore, or wake up with a dry mouth, you are likely mouth-breathing.
- Look for allergy indications: dark circles under the eyes, sunken cheekbones, large tonsils, and small, unused nostrils. Modern dairy and wheat products are common allergens.
- Do you show signs of asthma? Yawn or sign often? These are signs of low CO_2 Consider Buteyko breath training.
- Check for tissue that anchors the tongue too tightly to the floor of the mouth. Open your mouth as widely as you can and measure the distance between the tips of the bottom and top teeth; next put the tip of your tongue about a half an inch behind the front teeth. This is called the Spot. If you must close more than fifty percent to do so, this vestigial embryonic skin should be released for proper tongue function and facial growth. The ideal is to close no more than forty percent, but myofunctional exercises can help stretch it. A myofunctional therapy session prior to a release helps maximize healing. Therapy afterwards is generally necessary to re-pattern and tone muscles.
- Grimace widely, lips apart. Spray water just inside the cheek with the teeth together, then try to swallow without moving any facial muscles including lips. If necessary, hold the lips apart with your fingers. A correct, passive swallow involves no facial muscles and only an undulation of the tongue as it rests on the palate. An active, incorrect swallow activates many facial muscles including the lip and chin muscles. The chin often looks like a dimpled golf ball during a swallow as it activates, particularly in older clients whose wrinkles have become permanent. The tongue pushes forward to touch front teeth in an effort to slingshot liquids (or food) down the throat. The lower jaw drops down and back and compresses the jaw joint with every swallow. Remodeling of the joint with accompanying popping, clicking and/or pain is common.
- Are your front teeth crowded and do you have either a too strong or too weak lower chin? Both indicate aberrations and accommodations in oral posture. Do the lower back teeth tilt inwards? Bony growths to the inside of the lower teeth are a good indication; they enlarge as people clench to stiffen airway muscles and keep the lower jaw from falling back on the airway and bringing the tongue with it. Do you have a narrow face? Look at the roof of your mouth. Is it narrow and high?
- Note airway size and tongue tone. Does your tongue seems too big for your mouth? Where does your tongue rest?
- Do you snore? Wake up rested? Feel energetic all day? Evaluate yourself with an Epworth Sleepiness Scale.

UPSIDE DOWN BREATHING

Most people breathe "upside down". Their breathing is shallow. Chest and shoulders rise with each breath. However note that very little of the lungs reside in the upper chest. There is far less blood flow in the upper lungs compared to the lower lungs, so air exchange is low. Bacteria and allergens clear slowly as a result. This is not how we are designed to breathe. We did not breathe this way as babies.



Neither chest muscles nor abdominal muscles are involved in correct breathing. To breathe more deeply, flip your breathing back to what many call "diaphragmatic breathing". The diaphragm muscle crosses the body just under the lungs. As the diaphragm contracts, it moves downward, pulling the bottom of the lungs with it. The larger volume of the lower lungs inflate as the lower ribs expand outward. This allows maximum air ventilation and lung clearance. It also allows profound relaxation.

This is one of the reasons breathing skills are so important during meditation. My experience shows people with upside down breathing have weak diaphragms through disuse.

For this reason I am making the BreathSlim device, a device I successfully use to increase my Control Pause and strengthen diaphragm muscles, available on my website. Normal breathing is 8-10 breaths per minute. Use PROMO CODE: CVS005 to receive a 10% discount.

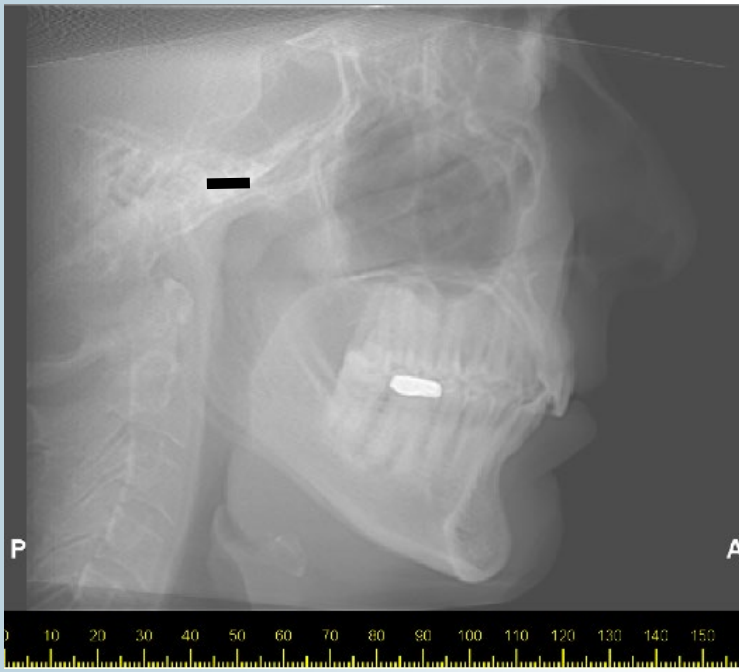
Also consider empowering yourself with the Myofunctional Therapy Companion Video now available at www.mouthmattersbook.com, www.yourmouthmatters.net, or https://vimeo.com/ondemand/myofunctionaltherapy.

Carol Vander Stoep, RDH, BSDH, OMT, is the author of *Mouth Matters, How Your Mouth Ages Your Body and What You Can Do About It.* This article is based on Chapter Twelve. Carol wishes she had a 20mm airway so she could run faster, and avoid apnea without undergoing orthodontics, surgery, and myofunctional therapy, but she learned this too late for herself and her children. She wants to make up for that by moving this information forward. A dental hygienist for over thirty years and an expert on biological dentistry and oral systemic health links, she is acutely aware of the staggering numbers of adults who have apnea, relapsed jaw surgeries, orthodontics, and jaw joint problems – and also the health threats to their children, who are not far behind.

Until long after she researched this subject, she had no idea any of this applied to her!

Age 5, already in trouble. A pre-orthodontic adult with an extremely narrow dental arch.

Because Carol believes in self-empowerment, she created a Myofunctional Therapy Companion Video to help people with limited access to care for whatever reason. www.mouthmattersbook.com, www.yourmouthmatters.net or https://vimeo.com/ondemand/myofunctionaltherapy.



Four millimeter airway prior to orthodontics to widen palate and release jaw forward. I chose to forgo surgery, curious as I am to know what "optimal" feels – and looks like. Nonetheless, myofunctional therapy significantly opened my airway in one dimension and toned my tongue, making it smaller. In the other dimension, the jaw release accomplished as a result of palatal expansion, arch broadening, and uprighting tilted teeth gave me about 2mm additional airway compared to the pre-orthodontic image above. It is enough so that I breathe easily at night and no longer clench.

Appreciation to Dr. William Hang for my orthodontics and his extensive work to change the field of facial development and orthodontics – it was worth it to fly to California! Also to Reza Movahed, DMD in St. Louis for offering to make his excellent oral surgery services available.